SEP 30 1996 22
Sta 34

ENGINEERING DATA TRANSMITTAL

1. EDT № 614563

2. To: (Receiving Organization) TWRS SAR Engineering	3. From: (Originating Organization) TWRS SAR Engineering	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: 8M100	6. Cog. Engr.: B.J. Niemi	7. Purchase Order No.: N/A
8. Originator Remarks: THIS DOCUMENT CONTAINS INFORMATION SUPPORTING THE TANK WASTE REMEDIATION SYSTEM FINAL SAFETY ANALYSIS REPORT. HAZARD ANALYSIS RESULTS ARE DESCRIBED AND DEFINED IN THIS REPORT.		9. Equip./Component No.: N/A 10. System/Bldg./Facility: TWRS
11. Receiver Remarks: N/A	11A. Design Baseline Document? [X] Yes [] No	12. Major Assm. Dwg. No.: N/A 13. Permit/Permit Application No.: N/A 14. Required Response Date: 9/27/96

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-TI-773	N/A	0	Hazard Analysis Results Report	N/A	1,2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	1	Cog.Eng. B.J. Niemi	B.J. Niemi	9/27/96	A3-37	1	1	Design Authority - S.H. Rifaey Sign by R.L. Schlosser on block 19 For signature			
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1	1	Proj. Mgr. G. L. Dunford	[signature]	9/27/96	A2-34						

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
B.J. Niemi 9/27/96 Signature of EDT Originator Date	S. H. Rifaey R.L. Schlosser 9/27/96 Design Authority Cognizant Manager Date	S. M. Stahl 9/27/96 Cognizant Manager Date	[] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (05/96) GEF097

BD-7400-172-1

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Hazard Analysis Results Report

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U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 61456 UC: 2030
Org. Code: 8M100 Charge Code: N1FT5
B&R Code: EW3120071 Total Pages: 628

Key Words: Hazard Analysis, Safety Analysis, Accident Analysis, Hazard Evaluation, HazOp, PHA, TWRS, Tank Farms, What-If Analysis

Abstract: This document describes and defines the Hazard Analysis Results for the Tank Waste Remediation System Final Safety Analysis Report.

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Chris Millingham 9/30/96
Release Approval Date

SEP 30 1996
DATE:
STA: 34
HANFORD RELEASE
ID: 22
Release Stamp

Approved for Public Release

HAZARD ANALYSIS RESULTS REPORT

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HAZARD ANALYSIS RESULTS REPORT

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LIST OF TERMS

DST	double-shell tank
HazOp	hazard and operability study
FSAR	Final Safety Analysis Report
ORPS	Occurrence Reporting and Processing System
PHA	preliminary hazards analysis
SSC	structure, system, and component
SST	single-shell tank
TSR	Technical Safety Requirement
TWRS	Tank Waste Remediation System

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HAZARD ANALYSIS RESULTS REPORT

1.0 INTRODUCTION

This Hazard Analysis Results Report describes the methodology used for the Tank Waste Remediation System (TWRS) Final Safety Analysis Report (FSAR) Project hazard analysis and documents the results. The hazard analysis was performed in accordance with DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports.*

The data generated by the hazard analysis were captured in a hazard analysis database, which is documented in WHC-SD-WM-TI-764, *Hazard Analysis Data Base Report.* The results are presented herein.

2.0 HAZARD ANALYSIS METHODOLOGY

This section presents the methodology used to perform the TWRS hazard analysis. A flow diagram of the hazard analysis process is illustrated in Figure 2-1. Hazards that can contribute to the uncontrolled release of radioactive or hazardous materials are systematically and comprehensively identified through the hazard identification process (see Section 2.1). Representative analysis cases are identified and applied to appropriate TWRS facilities by hazard topography (see Section 2.2). The hazard evaluation process (Section 2.3) identifies hazardous conditions for the representative cases and determines causes, preventive and mitigative features, and qualitative estimates of the frequency and consequence. Representative analysis was necessary to reduce the cost and schedule associated with development of the TWRS FSAR Project hazards analysis. The analysis of representative cases is possible for two reasons.

1. The hazard evaluations are qualitative assessments which apply to any specific situation with similar characteristics.

2. The 177 tanks in TWRS share similar characteristics.

Results of the hazard evaluations are used to select candidate accidents for quantitative analysis (see Section 2.4). Results of the hazard and accident analyses are then used to identify the safety structures, systems, and components (SSCs); Technical Safety Requirements (TSRs); and other controls required to protect the public, worker, and environment (see Section 2.5). The hazard and accident analyses results also support

determination of the final facility hazard classification (see Section 2.6). Results of the hazard analysis activities are recorded in a hazard analysis database (see Section 2.7).

2.1 HAZARD IDENTIFICATION

The hazard analysis includes identification of the hazards associated with TWRS design, processes, and operations. Hazards are defined as material, referred to as material at risk, with a potential adverse effect on people or the environment and the energy sources that could contribute to the uncontrolled release of that material. The hazard identification methods and techniques include the following:

- Review of past TWRS safety documents
- Review of TWRS reportable event history (e.g., unusual occurrence reports)
- Review of historical records of similar operations (e.g., Savannah River Site)
- Participation by current and former TWRS Operations and Engineering personnel in the hazard analysis effort
- Use of standardized checklists of potential hazardous materials and energy sources
- Information regarding TWRS material at risk
- TWRS facilities and operations descriptions
- Existing TWRS hazard analyses.

An initial set of hazards is identified on a tank farm level and other facility level using the form and related checklist in Tables 2.1-1 and 2.1-2. A field verification by means of a TWRS document review and facility walkdown supports identifying material at risk (type, form, quantity, and location) and relating the hazard identification to each tank.

This information about the material present in each TWRS facility is used to confirm or adjust the assumptions made about the material at risk used in the hazard evaluations. The accident analysis also is based on conservative assumptions about what material might be present, not the existing inventory. These assumptions about material at risk are as follows.

Chemical Inventory. The maximum hazardous chemical inventory for TWRS is developed using two sources. The first source is a listing of chemicals from the Hanford Site hazardous material inventory database (system), which is used to meet the requirements of *Superfund Amendments and Reauthorization Act (SARA) of 1986*. This database contains a list of purchased and stored chemicals within the facility. The second source of information

is WHC-SD-WM-SARR-011, *Toxic Chemical Considerations for Tank Farm Releases*. This document contains the bounding limits for chemical unit liter concentrations for the tanks within the facility.

Radiological Inventory. The TWRS worst-dose radiological inventory is based on information given in WHC-SD-WM-SARR-016, *Tank Waste Compositions and Atmospheric Dispersion Coefficients for Use in Accelerated Safety Analysis Consequence Assessments* and WHC-SD-WM-SARR-037, *Development of Radiological Concentrations and Unit Liter Doses for Tank Waste Remediation System Final Safety Analysis Report Radiological Consequence Calculations*. These documents contain bounding unit liter doses for the tanks within the facility.

2.2 HAZARD TOPOGRAPHY

The TWRS hazard topography is used to ensure comprehensive coverage of material at risk, phenomena, configurations, operations, and facilities. TWRS documents, including WHC-EP-0182-96, *Waste Tank Summary Report for Month Ending March 31, 1996*; WHC-SD-WM-SARR-009, *Construction, Maintenance, and Operational Activities Analysis Summaries*; and WHC-SD-WM-HIE-007, *Tank Waste Remediation System Final Safety Analysis Report Hazard Identification/Facility Configuration Verification Report* are used to help define the hazard topography.

The hazard topography is specifically used to accomplish the following.

- Identify the types of TWRS facility situations that are directly analyzed by a hazard evaluation (e.g., identify the specific representative analyses).
- Map the representative hazard evaluation results to each TWRS facility in the Scope of the TWRS FSAR.
- Store the results of the hazard identification effort for each TWRS facility in the Scope of the TWRS FSAR.

The hazard topography data are stored in the hazard analysis database and include the following.

- Facility Identifier—The facility identifier used by the TWRS Project.
- Facility Type—The TWRS facility type code (Table 2.2-1) used to relate hazard evaluation results to each facility. For example, a double-shell tank (DST) on the flammable gas watch list would be coded with a facility type code of DS.H. All hazardous conditions involving DSTs and hydrogen gas fires or explosions also would be assigned the DS.H code. This allows all hazardous conditions involving hydrogen fires/explosions to be related to the appropriate DSTs.

- Capacity—The design capacity of the vessel(s) at a facility.

- Material Inventory—The inventory of radioactive or hazardous materials in a facility. It includes the type, form, quantity, and location of the material (the location identification is generally the same as the facility identification).

- Energy Sources—The identification of potential energy sources associated with a facility (see Tables 2.1-1 and 2.1-2).

- Unique Phenomena—The unique phenomena associated with each facility. Unique phenomena include high heat, flammable gas, organics, and radiolysis.

- Unique Configuration—The unique major configuration items for each facility. Unique configurations include interfaces with other facilities, the existence of active or passive ventilation, DSTs, and single-shell tanks (SSTs).

- Representative Analyses—The hazard evaluations which contain results applicable to a facility.

2.3 HAZARD EVALUATION

The hazard evaluation is a structured and systematic examination of the TWRS facilities and operations using standard industry (American Institute of Chemical Engineers [AIChE]) hazard evaluation techniques. It is performed by a team of cognizant TWRS Operations and Engineering personnel, safety analysts familiar with TWRS, and technical experts in specialty areas.

Hazard evaluations representative of all TWRS facilities are performed. The representative hazard evaluations are chosen using selection criteria designed to ensure comprehensive coverage of TWRS facilities and their design and operation variations. Specific hazard evaluations are chosen to address the following:

- Major or unique material at risk inventory

- Major phenomenology (e.g., high heat, flammable gas, organics, radiolysis)

- Major configuration variations (e.g., interface with evaporator, active ventilation, passive ventilation, DSTs, SSTs)

- Routine TWRS operations (e.g., waste transfers, in-tank activities, waste sampling)

- Unique facilities (e.g., 204-AR Waste Unloading Facility, 2727-W Sodium Storage).

The representative hazard evaluations and the technique used for the respective analyses performed are listed in Table 2.3-1. Hazardous conditions were developed from the information obtained from hazard evaluations performed by hazard and operability studies (HazOps), preliminary hazards analyses (PHAs), or What-If analysis. These hazard evaluation techniques use a tabular format to capture pertinent information. The sequential numbering system used in the HazOp, PHA, or What-If tables is the basis for the hazardous condition alpha-numeric identifiers.

In the case of PHAs and What-If analyses, the identifier is straightforward. An abbreviated designation for a PHA or What-If is combined with the sequential numbering of the table to create the identifier. For example, CRN-13-b would be the thirteenth item in the PHA for crane activities. The -b indicates that further development of the item resulted in more than one hazardous condition. In the case of HazOps, the identifier is based on an abbreviated designation for the HazOp combined with the node number and process parameter. In some cases, a sequential numbering system was substituted for the process parameter. For example, 102AW-01-FLOW01 would indicate that this hazardous condition originated in the first node of the HazOp on Tank 241-AW-102 for the process parameter FLOW. The 01 specifies that this is the first deviation guide word in the table for this process parameter. In the case of 114SX-05.b.2, the hazardous condition came from the HazOp on the 114-SX tank farm, fifth node, second process parameter, second guide word. In all cases, the alpha-numeric identifier for each hazardous condition permits tracing the condition to the specific item in the applicable HazOp, PHA, or What-If table.

The hazard evaluation technique which is applied depends on the nature of the TWRS facility or operation being analyzed. The following hazard evaluation techniques are used:

- HazOp: systems, equipment, and processes
- PHA: facility operations and situations that are primarily operations driven
- "What If" analysis: external events, natural phenomena, and potential common-cause failures.

HazOp. The HazOp was developed to identify and evaluate safety hazards in systems, equipment, and processes and to identify operability problems which, although not hazardous, could compromise the productivity goals for which the plant was designed to achieve. Although originally developed to anticipate hazards and operability problems for technology with which organizations have little experience, the HazOp is very effective with existing operations. However, completion of a HazOp is time consuming, and depending on the complexity of the failure being investigated, can require considerable resources (e.g., personnel, information, software, etc.). Use of the HazOp requires a detailed source of information concerning the design and operation of a process.

In a HazOp, an interdisciplinary team uses a creative, systematic approach to identify hazard and operability problems that could lead to undesirable consequences. Because these

problems usually are caused by deviations from the process design, an experienced team leader systematically guides the team through the plant design. A fixed set of words (termed "guide words") is applied at specific points or "study nodes" in the plant design and combined with specific process parameters to identify potential deviations from the intended operation. Process parameters that may be examined include flow, temperature, pressure, viscosity, composition, phase, level, addition, reaction, maintenance, testing, instrumentation, and sampling. Guide words (and their meanings) include the following:

- "No/none"—Negation of design intent
- "More"—Quantitative increase
- "Less"—Quantitative decrease
- "As well as"—Qualitative increase
- "Part of"—Qualitative decrease
- "Reverse"—Logical opposite of intent
- "Other than"—Complete substitution.

Guidelines for Hazard Evaluation Procedures (AIChE 1992) gives a more detailed description of this technique.

PHA. The PHA technique is derived from Mil-Std 882B, *Military Standard System Safety Program Requirements* (DOD 1987). This technique is used to analyze facility operations and situations that are primarily operations driven. In a general way, a PHA focuses on the hazardous materials and major process areas of a plant. While the PHA technique normally is used in the preliminary phase of plant development for cases where experience provides little or no insight into potential safety problems, it also may be helpful when analyzing large, existing facilities or prioritizing hazards when circumstances prevent use of a more extensive technique. A PHA can be performed by one or two people who have a process safety background.

A list of hazards and generic hazardous situations are considered using the following process characteristics:

- Raw materials
- Intermediate and final products (and their reactivity)
- Plant equipment
- Facility layout
- Operating environment
- Operational activities (testing, maintenance, etc.)
- Interfaces among system components.

A PHA yields a qualitative description of the hazards related to a process design. A PHA also provides a qualitative ranking of hazardous situations that can be used to prioritize recommendations for reducing or eliminating hazards in subsequent life-cycle phases of the process.

Use of the PHA technique requires that analysts have access to available plant design criteria, equipment specifications, material specifications, and other sources of information. A detailed description of this technique is provided (AIChE 1992).

What-If Analysis. The What-If analysis is used to analyze external events, natural phenomena, and potential common-cause failures. The What-If analysis is a brainstorming approach in which a group of experienced personnel familiar with the subject process ask questions or voice concerns about possible undesired events. It is not as inherently structured as some other techniques (e.g., HazOp analysis). Instead, it requires the analyst to adapt the basic concept to the specific application.

Because the What-If analysis is so flexible, it can be performed at any stage of the process, using whatever process information and knowledge are available. For each area of the process, two or three people should be assigned to perform the analysis; however, a larger team may be preferred. It is better to use a large group for a complex process, dividing the process into smaller pieces, than to use a small group for the entire process.

The What-If analysis encourages the hazard analysis team to think of questions that begin with "what if." However, any process safety concern can be voiced even if the concern is not phrased as a question. Usually, a scribe records all questions on a chart pad, marking board, or computer. The questions are then divided into specific areas of investigation (usually related to consequences of interest), such as electrical safety, fire protection, or personnel safety. Each area is subsequently addressed by a team of knowledgeable members. The questions are formulated on the basis of experience and are applied to existing drawings and process descriptions. For an operating plant, the investigation may include interviews with plant staff not represented on the hazard analysis team.

A more detailed description of this technique is provided (AIChE 1992).

For each technique used, the hazard evaluation is summarized in the hazard analysis database and includes the following information:

- Hazardous condition
- Cause
- Frequency
- Consequence
- Existing preventive features (design and administrative)
- Existing mitigative features (design and administrative).

Potential hazardous conditions (excluding those identified as common industrial hazards) are developed using the hazards identified and the application of the hazard evaluation methods described above. The description of each hazardous condition includes release of material from a location caused by an event.

The hazard analysis database contains descriptions of causes for hazardous conditions. Identification of causes was based on the hazard identification results, reviews of the systems, historical event data, and other sources of information (existing safety documentation) including discussions with experienced facility personnel. Typical potential causes of the postulated hazardous conditions included equipment failures, operational errors, abnormal operating conditions, poor operating practices, and environmental conditions. The potential causes of a postulated hazardous condition are identified to support a qualitative frequency evaluation.

Each hazardous condition was assessed to determine a qualitative frequency of occurrence and consequence in accordance with Tables 2.3-2 and 2.3-3, respectively. The assessment of likelihood and consequence for each hazardous condition is a collective, qualitative judgment made by the hazard analysis team. The assessment is made for the initial hazard analysis, with the impact of existing controls taken into consideration. Subsequent likelihood and consequence assessments are made without considering controls and with considering controls (safety SSCs and TSRs). These assessments are input to the hazard analysis database.

The likelihood assessments are made in occurrences per tank farm year. The general criteria for likelihood assessments are as follows:

F3: The hazardous condition based on the cause(s) postulated has occurred or is likely to occur

F2: The hazardous condition based on the cause(s) postulated is foreseeable, but unlikely

F1: The hazardous condition based on the cause(s) postulated is perhaps possible, but extremely unlikely

F0: The hazardous condition based on the cause(s) postulated is considered too improbable to warrant further consideration.

Frequency assessments for hazardous conditions that are close to the upper limit of a category are conservatively assigned to the higher-likelihood category.

The consequence category assessments address potential impacts on health and safety, and the environment. The general criteria for consequence assessments are as follows:

S3: On the basis of material at risk and cause(s) postulated, there is sufficient material and release energy to impact a receptor at the Hanford Site boundary

S2: On the basis of material at risk and cause(s) postulated, there is sufficient material and energy to impact a receptor 100 m from the source of the material at risk

S1: On the basis of material at risk and cause(s) postulated, the release is confined to the facility in which it occurred

S0: On the basis of material at risk and cause(s) postulated, there is insufficient material released to affect facility workers

E3: All S3 hazardous conditions or major leaks from large storage tanks

E2: All S2 hazardous conditions or liquid releases or leaks outside facility boundaries

E1: Postulated releases not included in E3 or E2

E0: No release postulated.

The more severe consequence categories include the less severe consequences. For example, a hazardous condition assessed as having onsite consequences (S2) is also considered to have facility worker consequences (S1).

The hazard analysis database contains identified preventive features (existing controls) that have the potential to prevent, and therefore reduce, the estimated frequency of a postulated hazardous condition. Design and administrative controls (e.g., procedures, polices, and programs) are included as preventive features. Preventive controls were identified primarily by reviewing selected facility procedures and process description documentation, and by consulting experienced facility personnel.

The hazard analysis database contains identified mitigative features (existing controls) that have the potential to mitigate the consequences of a postulated hazardous condition. Design and administrative controls (e.g., procedures, polices, and programs) are included as mitigative features. Mitigative controls are identified primarily by reviewing selected facility procedures and process description documentation, and by consulting experienced facility personnel.

The hazard evaluations are documented in individual reports which identify the participants and hazard evaluation scope, material at risk, major assumptions, references, and the information in the HazOp, PHA, and "What If" forms (WHC-SD-WM-TI-759, *Hazard Evaluations for the Tank Waste Remediation System Final Safety Analysis Report*).

2.4 CANDIDATE ACCIDENT SELECTION

The hazardous conditions identified by the hazard evaluation are used to select candidate accidents for more detailed, quantitative analysis. The general selection criteria used are consistent with DOE-STD-3009-94: "The range of accident scenarios analyzed in a SAR should be such that a complete set of bounding conditions to define the envelope of accident conditions to which the operation could be subjected are evaluated and documented."

Information generated by the accident selection process is included in the hazard analysis database.

The concept of selecting candidate accidents from all hazardous conditions identified is based on the feasibility of characterizing risk and developing controls from a representative set of accidents. An accident is considered to be representative of a set of accidents if it has similar accident release characteristics or involves similar accident phenomena. Accidents which represent the most severe consequences and the highest risk (combination of frequency and consequence) are selected.

Representative accidents will be selected using the following criteria: accidents that bound those of lesser but similar potential consequences; accidents that represent the highest risk; and other accidents, while not necessarily bounding, that represent accidents presenting some unique but important phenomenological challenge to system safety. The selection process comprises six steps:

1. Initial screening
2. Assignment of accident release attributes
3. Creation of hazardous material release bins
4. Sorting of the hazardous conditions by cause
5. Selection of representative bounding accidents for each release attribute category
6. Selection of unique accidents.

In accordance with DOE-STD-3009-94 and consistent with the graded approach, the risks of a facility/activity may be characterized and appropriate controls developed using the detailed analysis of a representative set of accidents.

Initial Screening. All hazardous conditions not assessed as S3 (offsite consequences) or S2 (onsite consequences) are dropped from the selection process. These hazardous conditions will be addressed using the qualitative hazard analysis results only.

Assignment of Accident Release Attributes. Each hazardous condition (e.g., accident) is described with certain accident release attributes (Table 2.4-1) related to uncontrolled release of the material at risk. This is done to ensure that at least one candidate accident representing the possible spectrum of release conditions is selected.

The hazardous material release attributes used are as follows:

- Initial energy available to release the hazardous material
- Initial release location
- Initial form of the release.

Initial conditions are used for these assignments because it is possible (and sometimes likely) that other conditions may evolve during the course of the accident progression. For example, a release may begin as a pool of liquid on the ground but become airborne as wind blows over the pool. The progression of the accident is more thoroughly examined in the detailed accident analysis.

The attributes related to energy level have three designations: high, moderate, and low (see Table 2.4-1). A high energy level (A) is assigned to energetic events such as explosions, fires, and criticality. A moderate energy level (B) is assigned to events such as liquid spray from pressurized lines and from dropping hardware into a material that disturbs or causes it to splash or become airborne. A ventilation system that is breached when the fans are running could be assigned to a moderate energy classification. A low energy level (C) includes events such as leaks from nonpressurized liquid containers and leaks from passive ventilation systems.

The attributes related to the initial release location have three designations: atmospheric, ground surface, and subsurface (see Table 2.4-1). In some cases, the accident may result in release to more than one destination. An accident resulting in significant portions of materials being released to more than one destination is assigned one location attribute associated with the most severe consequence. If it is clear that the overall accident significance is related to one location, and only minor effects are possible from the others, then only one location attribute is also assigned.

Three attributes are related to the initial form of the release: vapor/gas/aerosol, liquid/slurry, and solid/sludge (see Table 2.4-1). Again, in some cases, the accident may result in release of more than one form of material and thus be assigned the attribute associated with the most severe consequence. If it is clear that the overall accident significance is related to one form, and only minor effects are possible from the others, then one form attribute is also assigned.

Creation of Hazardous Material Release Bins. Once the release attributes are assigned to each hazardous condition (accident), they are collected to form accident release categories or bins. Collecting accidents into bins involves grouping all accidents with common release attributes. For example, a certain accident may be assigned a high energy level for material that is released to the atmosphere as a vapor; its attributes would therefore be high/atmosphere/vapor. If bins are labeled using combinations of designators for the attributes shown in Table 2.4-1, the designation for the example would be A-1-a. All accidents with designator A-1-a are grouped together.

Sorting of the Hazardous Conditions by Cause. The hazardous conditions within each accident release category are organized by cause. This includes grouping by common accident phenomena (e.g., fire, criticality). The codes used to bin the accidents (hazardous conditions) by cause are listed in Table 2.4-2. For example, hazardous conditions involving a dome collapse and the dropping of a load are coded C10. Those accidents resulting in dome collapse caused by structural degradation are coded B12. All of these hazardous conditions are grouped in the same release attribute bin. Examination of the various causes supports selection of a representative set of accidents from each release attribute bin.

Selection of Representative Bounding Accidents for Each Release Attribute Category. Within each release attribute bin the most severe accident in terms of consequence, and the highest risk accident considering likelihood and consequences, are selected. In some cases, they are the same accident.

Selection of Unique Accidents. Accidents are selected to represent additional, unique causes within each release attribute bin. This is done to support development of controls for accidents with similar consequences but with different causes.

The final list of candidate accidents represents all S3 (offsite) and S2 (onsite) hazardous conditions identified by the hazard analysis. These hazardous conditions are grouped by candidate accident to facilitate incorporation of the information and conclusions from the accident analysis into the hazard analysis results when considering controls and hazard classification.

Adjustments are made to the list of accidents analyzed on the basis of results from accident analysis activities. To accommodate this anticipated situation, a table is developed to identify the candidate accidents and the accidents analyzed. The reasons for any differences are explained and the hazardous conditions are regrouped on the basis of the final set of analyzed accidents.

2.5 CONTROLS IDENTIFICATION

The hazard analysis results and the accident analysis results are used to identify safety-class and safety-significant SSCs, TSRs, and other controls required to protect the public, workers, and environment. The process of control identification is illustrated in Figure 2.5-1. Controls for protection of the public and onsite workers (100 m) are based on the results of the hazard analysis and the accident analysis. Controls for protection of facility workers and the environment are based primarily on the qualitative hazard analysis results.

The principal basis used for identifying safety SSCs and TSRs is risk guidelines. The objective is to identify the necessary and sufficient safety SSCs and TSRs that result in satisfying the risk guidelines. The risk guidelines for the public and onsite workers are given in Table 2.5-1. For facility workers, safety-significant SSCs and TSRs may be required for hazardous conditions with significant facility worker consequences (S1) and an uncontrolled

frequency of anticipated (F3). Figure 2.5-2 is a risk matrix that illustrates the application of the risk guidelines for all hazardous conditions.

The relationship between the quantitative risk guidelines and the qualitative risk matrix is determined by the frequency/consequence results of the accident analysis. For example, if the most severe consequence result for a hazardous condition (accident) exceeds the dose limit for the onsite worker, that hazardous condition is considered to have a consequence of S2 with the corresponding frequency. This combination of frequency/consequence determines the risk index of a hazardous condition based on Figure 2.5-2. If a hazardous condition has a frequency of F2 and a consequence of S2, it has a risk index of 12. For those hazardous conditions not directly analyzed as accidents, the risk index is determined by the qualitative frequency/consequence results of the hazard evaluations as refined by the information from the accident analysis.

Decisions regarding classifying SSCs as safety class or safety significant, and identifying TSR controls, require the involvement of the cognizant hazard and accident analysts within TWRS Operations and Engineering. Control decisions are based on the best available information for the potential hazardous condition or postulated accident and the uncontrolled risk; the hazard topography; the hazardous conditions represented by the postulated accident; and the existing and possible alternative controls, their estimated risk reduction effectiveness, and their estimated engineering and operations impacts (e.g., capital and operating costs, increased facility worker radiation/hazardous material exposure, environmental compliance, TWRS retrieval and disposal mission).

As shown in Figure 2.5-1, the safety SSCs, TSRs, and other controls are identified in a four-step process. First, for each postulated accident selected for quantitative analysis, a necessary and sufficient set of controls is identified. Second, using the hazard topography, a determination is made concerning whether the selected controls acceptably prevent or mitigate the postulated accident at all TWRS facilities where the accident could occur. If necessary, controls are identified for other TWRS facilities and operations. Third, a review of each hazardous condition represented by the analyzed accident is performed to determine if the selected controls acceptably prevent or mitigate the represented hazardous condition. Again, if necessary, additional or different controls are identified for the represented hazardous condition. Fourth, and finally, the total set of controls chosen to protect the public and onsite worker are reviewed to determine whether any significant facility worker hazards remain uncontrolled. If necessary, additional controls are identified for worker protection.

The decisions concerning safety SSCs, TSRs, and other controls providing defense in depth are documented, incorporated into the hazard and accident analyses, and the information is provided to support Chapters 4.0 and 5.0 of the TWRS FSAR.

2.6 HAZARD CLASSIFICATION

A final hazard classification of TWRS facilities is based on the results of the hazard and accident analyses. Hazard classification is based on the definitions of hazard categories in DOE 5480.23, *Nuclear Safety Analysis Reports* and the methodology for hazard classification in DOE-STD-1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*. As allowed by DOE-STD-1027-92, TWRS facilities that are independent (i.e., hazardous materials in one facility cannot interact with hazardous materials in another facility) are segmented and their individual hazard classifications are determined.

2.7 HAZARD ANALYSIS DATABASE

The hazard analysis database is used to collect the results of the hazard analysis activities and to generate reports and evaluations to support the hazard and accident analyses. The database and data fields are described in WHC-SD-WM-TI-764. The results from the initial hazard analysis activities are input to the hazard analysis database. This database supports the activities of hazard identification, hazard topography, hazard evaluation, and safety SSC and TSR identification. As these activities proceed, along with the accident analysis, additional information becomes available that results in refinements of the initial qualitative judgments made in the hazard analysis. These refinements are incorporated in the hazard analysis results by updating the hazard analysis database. The final hazard analysis results are reflected in the updated database.

The hazard analysis database contains the TWRS hazard topography and the hazard identification and evaluation results. These data are related through use of the facility type code (see Table 2.2-1). The contents of the hazard identification and hazard topography data tables are described in Sections 2.1 and 2.2, respectively. The hazard evaluation results are contained in the database, as follows.

1. **Identifier**—An identifier for each entry in the database that includes an indication of the facility or operation analyzed.

2. **Material at Risk**—A place keeper that indicates the location of the material inventory considered for release in each entry (see Table 2.7-1). Specific inventory information for each facility or location is contained in the hazard topography. Place keepers are used by the hazard evaluations to allow the analysis to be developed on a representative basis. For example, the hazardous conditions postulated in the hazard evaluation that result in the uncontrolled release of material from tank ventilation systems use the material at risk for these events as "contamination in ventilation system." The accident analysis uses a reasonably conservative quantified description of this material at risk for determining potential consequences.

3. **Hazardous Condition**—A brief description of the uncontrolled release of material including the location of the release and the condition of release.

4. **Cause**—A brief description of the cause of the uncontrolled release; generally, an identification of the initiating event for the release.

5. **Frequency**—The qualitative assessment of the frequency of the hazardous condition (see Table 2.3-2). Two frequency estimates are included: frequency without controls, and frequency with selected SSCs and TSRs. These entries are subject to update using accident analysis results.

6. **Consequence**—Qualitative assessment of the consequence of the hazardous condition (see Table 2.3-3). This entry is subject to update using accident analysis results.

7. **Risk**—The combination of frequency and consequence (see Figure 2.5-2). Two risk estimates are included: risk without controls, and risk with selected SSCs and TSRs. These entries are subject to update using accident analysis results.

8. **Controls**—Includes all existing controls identified by the hazard analysis activities. Controls are identified in two categories: engineered or administrative. Each category of controls is further divided into preventive and mitigative.

9. **Selected Controls**—Identifies selected SSCs and TSRs and whether they are preventive and mitigative features.

10. **Release Attribute**—This code is from the accident selection process (Table 2.4-1) and used to support candidate accident selection.

11. **Cause Group**—This is the hazardous condition cause group code (Table 2.4-2) used to support candidate accident selection and selection of controls.

12. **Facility Type**—TWRS facility-type code (Table 2.2-1) used to relate the hazard evaluation results to each TWRS facility using the hazard topography.

3.0 HAZARD ANALYSIS RESULTS

The results of the hazard analysis include information on TWRS hazard topography, hazard identification, accident selection, hazard evaluation, and control identification. These results are presented in tabular form in the following sections.

3.1 HAZARD TOPOGRAPHY RESULTS

The TWRS hazard topography captures the list of TWRS facilities within the scope of the TWRS FSAR, results of the hazard identification activities, and relates the individual hazard evaluations to TWRS facilities. The three principle sources of information for the hazard topography are as follows:

- WHC-SD-WM-HIE-007
- The TWRS FSAR hazard evaluation results
- The TWRS FSAR accident analysis results.

The hazard topography is displayed in Tables 3.1-1, 3.1-2, 3.1-3, 3.1-4, and the 3.1-5 series (3.1-5-A, 3.1-5-AN, 3.1-5-AP, 3.1-5-AW, 3.1-5-AX, 3.1-5-AY, 3.1-5-AZ, 3.1-5-B, 3.1-5-BX, 3.1-5-BY, 3.1-5-C, 3.1-5-S, 3.1-5-SX, 3.1-5-SY, 3.1-5-T, 3.1-5-TX, 3.1-5-TY, 3.1-5-U).

3.2 SUMMARY OF OCCURRENCES

The hazard identification activity included a review of occurrence reports for TWRS (200 Area tank farms and affiliated facilities). These reports were examined to assure that a comprehensive set of hazards and potential accident causes were addressed by the hazard analysis activity. Comprehensiveness was assured by comparing the nature of the occurrences to the potential causes or accidents identified by the hazard analysis, and verifying that those occurrences not covered are not material to the hazard analysis results. Review of the occurrences also was used to assist in determining frequencies for some of the hazardous conditions in the TWRS HazOps and PHAs.

Two databases of occurrences associated with the 200 Area tank farms and affiliated facilities have been generated in support of the TWRS FSAR. Development of these databases included a review of all unusual occurrence reports produced by Atlantic Richfield Hanford Company from January 1972 through June 1977, Rockwell Hanford Company from June 1977 through June 1987, and Westinghouse Hanford Company from June 1987 through December 1989. Copies of tank farm-associated unusual event reports, critiques, and event fact sheets for the years 1986 through 1990 were reviewed and included in the databases, where appropriate. The Occurrence Reporting and Processing System (ORPS) database was obtained electronically for the years 1990 to the present. This database includes all unusual occurrence reports, off-normal events, and critiques generated by the Westinghouse Hanford Company. The ORPS database was searched for occurrences in the tank farms and associated facilities. Actions that resulted in minor skin contaminations or reports of a minor spread of contamination (specks or contamination spread to personal clothing) from a tank farm or associated facility were not included in the databases, which are documented in the Appendix.

Table 3.2-1 is a summary of the occurrences which were reviewed and compared to the list of cause groups from the hazard analysis results. The list consists of the representative accidents and causes of the accidents. Table 3.2-2 is the list of occurrences not included in the hazard analyses and the number of times they occurred. All occurrence causes which potentially contribute to uncontrolled releases were addressed in the hazard analysis.

3.3 ACCIDENT SELECTION RESULTS

The TWRS FSAR hazard evaluations identified hazardous conditions resulting in uncontrolled releases of radioactive or hazardous material and their frequency of occurrence and consequences. From the list of hazardous conditions resulting in significant offsite or onsite consequences, a set of accidents was selected to represent these hazardous conditions. Table 3.3-1 lists the accident selected for analysis. Table 3.3-2 lists the selected accidents along with the hazardous conditions they represent.

3.4 HAZARD EVALUATION RESULTS

The hazard evaluations identified hazardous conditions with the potential for significant health, environmental, occupational, and radiation exposure consequences. Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5 list the hazardous conditions by consequence category (Note: hazardous conditions are listed in decreasing order of frequency for each consequence category). Included in the tables are potential environmental consequences. All consequence and frequency assessments in these tables are based on an assumed TWRS configuration with no controls.

3.5 CONTROL IDENTIFICATION RESULTS

Controls (e.g., safety SSCs and TSRs) were identified using hazard and accident analysis results. The safety SSCs and TSRs were allocated to all hazardous conditions identified by the hazard evaluations. Tables 3.5-1, 3.5-2, and 3.5-3 contain the results of the control identification.

4.0 REFERENCES

AIChE, 1992, *Guidelines for Hazard Evaluation Procedures*, 2nd edition, Center for Chemical Process Safety of the American Institute of Chemical Engineers, New York, New York.

DOD, 1987, *Military Standard System Safety Program Requirements*, Mil-Std 882B (Updated by Notice[1]), U.S. Department of Defense, Washington, D.C.

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WHC-SD-WM-SARR-037, 1996, *Development of Radiological Concentrations and Unit Liter Doses for Tank Waste Remediation System Final Safety Analysis Report Radiological Consequence Calculations*, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC-SD-WM-TI-759, 1996, *Hazard Evaluations for the Tank Waste Remediation System Final Safety Analysis Report*, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC-SD-WM-TI-764, 1996, *Hazard Analysis Data Base Report*, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

APPENDIX
SUMMARY OF OCCURRENCES

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CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
N. J. Milliken	Distribution	8M100-NJM-96017

Subject: OPERATIONAL EVENTS HISTORY FOR TANK WASTE REMEDIATION SYSTEM FINAL SAFETY ANALYSIS REPORT

INTERNAL DISTRIBUTION

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		G. R. Sawtelle	A3-37	X
		R. L. Schlosser	A3-37	X
		O. M. Serrano	T4-08	X
		R. J. Shupe	R2-82	X
		P. L. Smith	R3-08	X
		J. L. Stewart	A2-26	X
		A. R. Tedeschi	T4-07	X
		J. E. Truax	R2-50	X
		A. M. Umek	S7-81	X
		R. J. Van Vleet	A3-34	X
		A. E. Waltar	H0-32	X
		A. B. Webb	A3-37	X

A-6001-538 (01/95) WEF008

Westinghouse Hanford Company **Internal Memo**

From: TWRS SAR Engineering 8M100-NJM-96017
Phone: 376-7846 A3-37
Date: March 13, 1996
Subject: OPERATIONAL EVENTS HISTORY FOR TANK WASTE REMEDIATION SYSTEM FINAL SAFETY ANALYSIS REPORT

To: Distribution

cc: E. P. DiVincenzo A3-37
NJM File/LB

It has come to our attention that several people working on the Tank Waste Remediation System (TWRS) Final Safety Analysis Report (FSAR) are searching for historical operational events for inputs into their chapters/analyses. We had anticipated this need early in the development process and have been working on a resolution, but due to other more pressing activities we haven't been able to complete this task until now.

Attached for use are two documents: one that lists all Tank Farm Unusual Occurrence Reports from 1972 to the present and one that combines events with off-normals and critiques. The inclusion of off-normals allows us to include those "events" that were either downgraded to off-normals or declared as off-normals from the start. If it is required, backup documentation is also available for each input.

I hope you find this useful. If there are any questions, feel free to contact either myself at 376-7846 or Suzanne Lindberg at 376-7890.

3/13/96
N. J. Milliken
Engineer

cab

Attachments

Westinghouse Hanford Company | **Internal Memo**

8M400-SEL-96005

From: Consequence Analysis
Phone: 376-7890 A3-34
Date: March 11, 1996
Subject: TANK FARM OCCURRENCE DATABASES

To: N. J. Milliken A3-37

cc: SEL File/LB A3-34

Two databases of occurrences associated with the 200 Area tank farms and affiliated facilities have been generated. These databases are available in hard copy for all who need the information in the hazard analyses and safety analyses of the tank farms.

The development of these databases included a review of all Unusual Occurrence Reports produced by the Atlantic Richfield Hanford Company from January 1972, through June 1977, the Rockwell Hanford Company from June 1977, through June 1987, and the Westinghouse Hanford Company from June 1987, through December 1989. Hard copies were made of all of the Occurrence Reports found that were associated with the tank farms. Also, copies of tank farm associated Unusual Event Reports, Critiques, and Event Fact Sheets, for the years 1986 through 1990, were reviewed and included where appropriate. Hard copies of all of the reports mentioned above are available in my office. The Occurrence Reporting and Processing System (ORPS) database was obtained electronically for the years 1990 through the present. This database includes all Unusual Occurrence Reports, Off-Normal Events, and Critiques generated by the Westinghouse Hanford Company. Searches were made of the ORPS database for occurrences that took place in the tank farms and associated facilities. Actions that resulted in minor skin contaminations, or reports of a minor spread of contamination (specks, or contamination spread to personal clothing) from a tank farm or associated facility, were not included in the lists.

The Unusual Occurrence Database was developed using the Paradox software. The fields included are: OCCURRENCE NUMBER, DISCOVERY DATE, DESCRIPTION OF EVENT, and EVENT CAUSE. There are approximately 550 entries in this database.

The Tank Farm Events, Off-Normal and Critiques Database was developed using WordPerfect software. The fields included are: DATE, EVENT #, EVENT TYPE, and EVENT DESCRIPTION. The EVENT TYPE code includes ON for Off-Normal, and Critique. There are 306 entries in this table.

Both databases are considered "living documents" such that as events continue to occur, they will periodically be reviewed and entered into the databases and you will be given the updated copies.

Suzanne E. Lindberg
Senior Engineer, Risk Analysis Team

gjr

Concurrence:
D. S. Leach Date 3/12/96
D. S. Leach, Manager

8M100-NJM-96017

ATTACHMENT

TANK FARM UNUSUAL OCCURRENCE REPORTS
TANK FARM EVENTS, OFF-NORMAL AND CRITIQUES

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
1-8-86	86-01	ON	Diesel generator at 244-AR Vault failed, ran out of fuel
1-8-86	86-02	ON	Tank 101-AW pressurized after transfer, reason unknown
1-9-86	86-03	ON	Tank 101-AW slurry distributor plugged during transfer.
1-16-86	86-06	ON	Valve AX-B-15 leaked, allowing AY-102 to AW-102 transfer to enter AN-101.
1-23-86	86-07	ON	Failure to shutdown AY-102 annulus ventilation when required during transfer, @ minimum level.
2-2-86	86-10	ON	AY and AZ tanks pressurized due to primary and backup exhauster failure.
2-6-86	86-11	ON	204-AR 702 leak detector switch mislabeled, improperly bypassed. Transfer stopped due to bypass signal.
2-7-86	86-12	ON	Inst. technician proceeded with work w/o approval, caused exhauster to shutdown. 241-A control room.
2-11-86	86-13	ON	Primary exhauster shutdown, backup failed. Portable backup started, over-pressurized AY and AZ tanks.
3-28-86	86-14	ON	701-SX air compressor oil line ruptured, spraying oil causing smoke. Smoke detector tripped.
7-22-87	86-15	ON	152-AX catch tank level limit exceeded. Deentrainer flush valve left open.
2-25-86	86-16	ON	Primary exhauster shutdown, backup failed. Portable exhauster started, then backup started. 101-AZ tank pressurized.
2-25-86	86-17	ON	Primary exhauster shutdown, backup failed. Six AW tanks pressurized.
3-3-86	86-18	ON	SY-101 tank burp. Pressurized SY-101 & 103.
11-18-86	86-19	ON	241-AW annulus exhauster fan failed, loose blade caused hole in housing.
1-17-87	86-20	ON	Tank 106-AW pressurized during slurry transfer.
3-26-86	86-21	ON	Tank 105-AW pressurized during PUREX E-5 transfers. (4 times)
4-9-86	86-22	ON	Primary exhauster shutdown, backup failed. AY and AZ tanks pressurized.
4-8-86	86-24	ON	244-AR backup air compressor failed on loss of oil. Primary compressor had failed.
1-17-87	86-25	ON	241-AW primary & annulus exhauster failure. AW tanks pressurized.
1-21-87	86-27	ON	241-AW portable exhauster failed during primary exhauster maintenance. AW tanks pressurized.
6-30-86	86-29	ON	102-AW pressurized due to sump jet air DOV leak-through.
7-21-86	86-31	ON	Power shut off to 241-AN tank farm. Operations notified 30 days prior, but not at the time.
7-21-86	86-32	ON	271-AN air conditioner repair tripped building power off.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
7-23-86	86-33	ON	241-AW portable exhauster fail, would not restart. AW tanks pressurized.
8-7-86	86-35	ON	Backup exhauster failed to start on test. AZ tanks pressurized.
1-17-87	86-36	ON	102-AW tank pressurized during transfer, pressure instruments valved out.
9-17-86	86-38	ON	241-AW Raw water service pit strainer leaked 850 gallons due to improper size of hold down lid.
10-3-86	86-41	ON	AY & AZ farm steam diverter valve stuck during test, flow to 216-A-08 crib.
10-7-86	86-45	ON	AN farm air compressor failed causing loss of air to farm instruments.
11-7-86	86-49	ON	AZ farm airlift circulators shutdown too long. (out for test)
12-1-86	86-52	ON	Tank 101-AZ below minimum level requirement.
1-17-87	86-53	ON	Raw water filter drain left open, filled seal loop, allowed pressurization of AY tanks.
11-29-86	86-54	ON	Electrical outage at 200-East farm, AN, AP, and AW tanks pressure alarms activated.
12-1-86	86-55	ON	Power supply tripped to AP farm, tripped vent systems. Tanks pressurized.
12-1-86	86-56	ON	I-129 emissions from AW exhauster exceeding yearly guidelines.
12-9-86	86-58	ON	216-Z-20 crib level at 36", exceeding vapor barrier @ 30". Insufficient infiltration rate.
7-3-87	WHC-C-87-008	Critique	Four personnel had irritated nose and throats due to breathing in 241-C farm.
8-25-87	WHC-C-87-057-TF-03	Critique	Failure to take vacuum readings in SX farm. No vacuum gauge to read.
1-14-88	WHC-C-88-035-TF01	Critique	Water in crib 216-U-17 riser before crib startup.
2-1-88	WHC-C-88-048-TF-02	Critique	Elevated Ruthenium-106 effluent from 241-AP farm exhaust.
5-21-88	WHC-C-88-105-TF-05	Critique	Contamination spread from 241-S farm while washing sludge to pit drain.
7-14-88	WHC-C-88-118-TF-06	Critique	Liquid observation well failure, resulting contamination spread.
8-2-88	WHC-C-88-128-TF-07	Critique	241-SY exhauster failure, tanks pressurized. Pressure alarms failed.
9-12-88	WHC-C-88-132-TF-08	Critique	Crib 216-S-26 not handling 222-S flows. Level rising.
9-19-88	WHC-C-88-161-TF-09	Critique	101-SY exceeded level increase criteria.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
12-10-88	WHC-C-88-185-TF-10	Critique	Misrouted condensate from A-417 to 101-AZ tank, instead of 102-AY receiver tank.
3-22-89	WHC-C-89-54-TF-02	Critique	Weight factor and radiation levels exceed criteria in 101-AX leak detection pit.
4-30-89	WHC-C-89-55-TF-03	Critique	Weight factor and radiation levels exceed criteria in 102-AZ leak detection pit.
9-28-89	WHC-C-89-106-TF-08	Critique	Employee felt ill after walking by AP farm. Assumed ammonia inhalation.
10-27-89	WHC-C-89-117-TF-09	Critique	241-AZ vent header found to contain cracks through the wall.
9-14-90	WHC-TANKFARM-1990-54	ON	1500 gallon leak through open raw water valve to 244-BX DCRT.
10-1-90	WHC-TANKFARM-1990-102	ON	241-AN annunciator panel power loss, loss of alarm capabilities for AN farm.
10-11-90	WHC-TANKFARM-1990-134	ON	Level decrease in tank C-103. Assumed evaporation.
10-19-90	WHC-TANKFARM-1990-162	ON	One acre of land along Powerhouse ditch found contaminated.
10-24-90	WHC-TANKFARM-1990-173	ON	101-SY vents through crust and level drops.
10-24-90	WHC-TANKFARM-1990-181	ON	Employee smoking, eating and drinking in radiation zone, 271-SY-241 instrument building.
11-04-90	WHC-TANKFARM-1990-205	ON	244-BX flush-pit valve leak adds 700 gallons to 244-BX DCRT.
11-11-90	WHC-TANKFARM-1990-219	ON	242-A Monitoring and Control System failed. No monitoring of some East Area alarms.
11-13-90	WHC-TANKFARM-1990-223	ON	Portable exhauster monitoring failure on tank C-106. Stack effluent not monitored.
12-4-90	WHC-TANKFARM-1990-291	ON	Liquid level increase in 241-BY-10. Assumed crystal growth.
12-10-90	WHC-TANKFARM-1990-315	ON	Radiation readings under tanks A-101, 102, & 105 not taken.
12-19-90	WHC-TANKFARM-1990-346	ON	AW farm backup exhaust fan failed to start as required. High pressure in tank farm.
12-20-90	WHC-TANKFARM-1990-352	ON	Frozen water pipe in 244-TX instrument building ruptured and leaked into 244-TX DCRT. (700 gallons)
12-22-90	WHC-TANKFARM-1990-373	ON	Frozen water line in 244-BX instrument building ruptured and leaked into 244-BX DCRT. (550 gallons)
12-23-90	WHC-TANKFARM-1990-376	ON	Raw water valve in 244-TX service pit ruptured due to freezing, leaked 1750 gallons into 244-TX DCRT.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
1-1-91	WHC-TANKFARM-1991-001	ON	244-AR steam leak tripped fire alarm.
1-11-91	WHC-TANKFARM-1991-32	ON	241-AW primary exhaust fan restarted during testing, while personnel near by. "Near-miss" injury.
1-15-91	WHC-TANKFARM-1991-43	ON	702-A exhauster shutdown, standby fan out-of-service. Portable fan started, air-lift circulators stopped. (AY and AZ tanks)
1-23-91	WHC-TANKFARM-1991-72	ON	Portable air compressor failure causes loss of inst. air at 244-AR vault.
1-23-91	WHC-TANKFARM-1991-74	ON	Above ground sensing line failed causing 101-AY high pressure alarm.
1-26-91	WHC-TANKFARM-1991-82	ON	Broken water line in BY-302 compressor building causes fire alarm.
1-28-91	WHC-TANKFARM-1991-85	ON	Annunciator panel failure @ 271-AP caused loss of AP tank farm alarms.
2-16-91	WHC-TANKFARM-1991-141	ON	101-SY pressure increased and level decreased due to venting.
2-28-91	WHC-TANKFARM-1991-175	ON	Sanitary water system underground leaks in 241-BY farm.
3-13-91	WHC-TANKFARM-1991-203	ON	101-SY hydrogen monitor vacuum pump failure.
3-14-91	WHC-TANKFARM-1991-206	ON	SX-106 liquid level increase beyond limit.
3-21-91	WHC-TANKFARM-1991-226	ON	241-AP primary exhauster failed causing pressurization in 105-AP tank.
4-8-91	WHC-TANKFARM-1991-1003	ON	241-A warm water sump level control out-of-service, not calibrated for four years.
4-9-91	WHC-TANKFARM-1991-1004	ON	241-A evacuation due to valving out instrument air line during maintenance.
4-9-91	WHC-TANKFARM-1991-1005	ON	TY-104 and 105 failed breather filters not replaced within time limit due to windy conditions.
4-23-91	WHC-TANKFARM-1991-1010	ON	244-AR stack CAM and record sampler vacuum pumps out-of-service.
4-30-91	WHC-TANKFARM-1991-1011	ON	Compressor failure causes loss of exhausters at 242-S and high pressure alarm at 102-SY tank.
5-16-91	WHC-TANKFARM-1991-1013	ON	High pressure alarm due to venting in 101-SY.
6-4-91	WHC-TANKFARM-1991-1018	ON	S-302-A catch tank level increase due to hose leak into diversion box. (90 gallons)
6-18-91	WHC-TANKFARM-1991-1019	ON	Control room unmanned during pumping of 102 and 109-BY tanks.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
6-19-91	WHC-TANKFARM-1991-1020	ON	216-S-26 crib level 6" above limit.
6-21-91	WHC-TANKFARM-1991-1022	ON	241-BY drywells high radiation readings during 102 and 109-BY transfers.
6-22-91	WHC-TANKFARM-1991-1023	ON	Portable compressor seized, high pressure alarms tripped at 241-AW farm.
6-29-91	WHC-TANKFARM-1991-1026	ON	Power lost to 200-East Area during electrical storm.
7-16-91	WHC-TANKFARM-1991-1028	ON	Employee contaminated while taking liquid level readings at 152-AX.
8-6-91	WHC-TANKFARM-1991-1031	ON	Momentary power loss to 200-East and West Areas.
8-23-91	WHC-TANKFARM-1991-1035	ON	Many waste tank FIC instruments are out-of-service, they are not a priority item for maintenance.
8-26-91	WHC-TANKFARM-1991-1036	ON	Failure to obtain tank AN-103 level reading as required.
8-30-91	WHC-TANKFARM-1991-1037	ON	Water valve left open at 244-TX spilling 600 gallons on the ground.
9-6-91	WHC-TANKFARM-1991-1038	ON	Three employees reported vapor inhalation in 103-C farm.
9-16-91	WHC-TANKFARM-1991-1043	ON	Construction worker reported inhaling an unknown vapor in 241-C farm.
9-19-91	WHC-TANKFARM-1991-1045	ON	Failure to take liquid level reading at TK-003-CR vault.
10-4-91	WHC-TANKFARM-1991-1051	ON	Exceeded two-year limit on tank BX-104 dome deflection survey.
10-22-91	WHC-TANKFARM-1991-1054	ON	Tank 244-CR-003 Ph readings too low hydroxide concentration.
11-12-91	WHC-TANKFARM-1991-1061	ON	Review determined that 88 tanks were not being monitored for temperature as required for non-watchlist tanks.
11-22-91	WHC-TANKFARM-1991-1065	ON	Tank 101-SY calculated heat loading exceeded OSD limits.
11-26-91	WHC-TANKFARM-1991-1067	ON	Front-end loader backed into and broke a thermocouple riser at T-108 tank.
11-28-91	WHC-TANKFARM-1991-1068	ON	AY-102 level increased during transfer from 244-CR-003 to AY-101.
12-4-91	WHC-TANKFARM-1991-1069	ON	101-SY level decrease and pressurization during tank venting.
12-4-91	WHC-TANKFARM-1991-1070	ON	76 counts per second spike found when lateral radiation scan completed on tank 103-A.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
12-5-91	WHC-TANKFARM-1991-1071	ON	55 gallon drum exceeded requirements for 90-day storage.
12-6-91	WHC-TANKFARM-1991-1072	ON	Liquid level limit exceed for tank AN-103.
12-7-91	WHC-TANKFARM-1991-1074	ON	Water leak into AY service water pit during airlift circulator flush.
12-10-91	WHC-TANKFARM-1991-1075	ON	Employee exceeded weekly radiation exposure limit working in 151-S diversion box.
12-17-91	WHC-TANKFARM-1991-1077	ON	241-AN exhauster shutdown, attempts to start fans failed. Seven tanks had static flow for two hours.
12-20-91	WHC-TANKFARM-1991-1078	ON	Sample bottle exceeded 90-day storage requirement.
12-26-91	WHC-TANKFARM-1991-1082	ON	Data on 1-7-AN annulus leak detection record copied from previous shift. No new report recorded.
12-31-91	WHC-TANKFARM-1991-1085	ON	Air compressor failure leads to 241-SX exhauster shutdown.
1-1-92	WHC-TANKFARM-1992-01	ON	Truck at 241-TX farm picked up tumbleweeds on carriage, tumbleweeds ignited.
1-6-92	WHC-TANKFARM-1992-03	ON	Both leak detector systems for SY-101 lost. Probe failed while CAM was out-of-service.
1-24-92	WHC-TANKFARM-1992-09	ON	During a transfer line hydro test in 241-S farm, water leaked and drained into valve pit.
1-24-92	WHC-TANKFARM-1992-10	ON	C-105 and 106 exhauster failed.
2-25-92	WHC-TANKFARM-1992-15	ON	SX farm exhauster shutdown due to portable compressor shutdown when it ran out of fuel.
2-25-92	WHC-TANKFARM-1992-16	ON	Engineer tracing annunciator wires tripped airlift circulator alarm and farm high pressure alarm.
2-28-92	WHC-TANKFARM-1992-20	ON	While fueling a portable compressor at 241-BY, fuel was spilled on the ground.
2-28-92	WHC-TANKFARM-1992-23	ON	@$$-TX receiver tank over-filled due to bad instrumentation.
3-6-92	WHC-TANKFARM-1992-25	ON	Tank C-100 inadvertently transferred to 102-AW.
3-10-92	WHC-TANKFARM-1992-26	ON	DANGER tag at SY farm cleared without proper authorization.
3-24-92	WHC-TANKFARM-1992-29	ON	Operator backed a van into a riser and punctured the gas tank. Spilled fuel onto the ground.
4-2-92	WHC-TANKFARM-1992-31	ON	Hazardous substance in railcar not pumped at 204-AR within time limits.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
4-20-92	WHC-TANKFARM-1992-32	ON	101-SY gas venting, level decreased about 9 inches.
4-29-92	WHC-TANKFARM-1992-36	ON	Transformer failure interrupts 241-S farm leak detection and level monitoring instruments.
5-14-92	WHC-TANKFARM-1992-40	ON	Transfer line SL-116 in 241-S farm, failed hydro test, leak sprayed out heat trace conduit.
5-14-92	WHC-TANKFARM-1992-41	ON	Small animals tracked contamination along the fence line of 241-AY farm.
6-10-92	WHC-TANKFARM-1992-45	ON	Attempting to hydro test transfer line SL-115, 200 gallons more than the calculated line holdup was added. Assume line failed.
6-12-92	WHC-TANKFARM-1992-46	ON	Attempted to hydro test transfer line SN-215, line did not hold pressure for 30 seconds. Assume line failed.
6-18-92	WHC-TANKFARM-1992-49	ON	Failure to comply with lock and tag requirements doing work in 241-TX farm.
7-15-92	WHC-TANKFARM-1992-54	ON	Transfer made through diversion box which drains to catch tank A-302-A which level above 50%. Exceeded level limit.
7-20-92	WHC-TANKFARM-1992-56	ON	105/106-C exhauster CAM failed efficiency test due to moisture inside CAM.
7-28-92	WHC-TANKFARM-1992-57	ON	Improper installation of cryogenic vacuum pump on tank 103-C. Samples invalid because of pump location.
8-21-92	WHC-TANKFARM-1992-58	ON	Personnel entered SX farm without proper respiratory protection.
8-20-92	WHC-TANKFARM-1992-60	ON	High level of contamination in Liquid Observation Well in 104-SX tank.
9-3-92	WHC-TANKFARM-1992-63	ON	Increased pressure and decreased level during venting of 101-SY tank.
9-10-92	WHC-TANKFARM-1992-64	ON	101-SY venting seemed to have broken off one of four air lances in tank.
8-14-92	WHC-TANKFARM-1992-65	ON	Increased radiation readings in 241-C drywell.
9-19-92	WHC-TANKFARM-1992-67	ON	Lock and tag cleared from tank farm without proper authorization.
9-25-92	WHC-TANKFARM-1992-70	ON	Personnel contamination from working in 241-SY farm.
9-30-92	WHC-TANKFARM-1992-72	ON	During 106-AN to 102-AP transfer, 102-AW level increased. 3575 gallon discrepancy in tank level.
10-6-92	WHC-TANKFARM-1992-76	ON	Thermocouple tree stuck, then bent and broken while removing it from 101-SY.
10-7-92	WHC-TANKFARM-1992-77	ON	Unauthorized pressure increase needed to remove thermocouple tree from 101-SY tank.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
10-19-92	WHC-TANKFARM-1992-78	ON	SX-103 level decrease exceeded limits.
10-19-92	WHC-TANKFARM-1992-79	ON	Seven deteriorated waste bags found in 241-S farm. Some broken and spilled on ground.
10-21-92	WHC-TANKFARM-1992-83	ON	AW-101 pressurization and level decrease. Tank placed on flammable gas watchlist.
11-6-92	WHC-TANKFARM-1992-85	ON	Aging waste temperature readings not taken because the data sheet was missing.
10-9-92	WHC-TANKFARM-1992-86	ON	SX-105 level decrease exceeded limits. Assume evaporation is cause.
10-22-92	WHC-TANKFARM-1992-87	ON	Procedure compliance deficiencies during 107-C vapor sampling.
12-3-92	WHC-TANKFARM-1992-88	ON	Personnel contamination during excavation in 241-SY tank farm.
12-8-92	WHC-TANKFARM-1992-90	ON	Periodic higher than normal radiation readings on AN-107 annulus CAM.
1-7-93	WHC-TANKFARM-1993-02	ON	Personnel contamination during piping grinding operation in 241-SY excavation.
1-13-93	WHC-TANKFARM-1993-06	ON	Packaged air lances in 241-SY farm exceeded 120-day storage limit.
1-15-93	WHC-TANKFARM-1993-08	ON	Transfer from 204-AR to 101-AY failed due to frozen jumpers in path.
1-21-93	WHC-TANKFARM-1993-10	ON	Air lance package leakage while in 241-SY farm.
1-26-93	WHC-TANKFARM-1993-14	ON	Transfer from 204-AR railcar to 101-SY made. Some of flow ended up in 102-AY.
2-2-93	WHC-TANKFARM-1993-16	ON	Pressurization and level decrease resulting from 101-SY venting.
2-1-93	WHC-TANKFARM-1993-17	ON	Fire in waste drum in 241-T due to welding activity catching paper towels on fire.
2-2-93	WHC-TANKFARM-1993-18	ON	204-AR ventilation fan failure, failed to re-start manually.
1-28-93	WHC-TANKFARM-1993-19	ON	Ammonia-like odor in 241-T farm.
2-4-93	WHC-TANKFARM-1993-20	ON	242-A circuits deenergized for modifications, control valve opened allowing raw water flow to 106-AW tank.
2-5-93	WHC-TANKFARM-1993-21	ON	Service water valve left open after flushing in 241-AX, caused unaccounted for raw water usage.
2-12-93	WHC-TANKFARM-1993-24	ON	202-B tank level increase limit exceeded.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
2-22-93	WHC-TANKFARM-1993-25	ON	Tank T-101 pumping schedule not met.
2-24-93	WHC-TANKFARM-1993-26	ON	Attempt to install shield plug in 101-SY riser found riser was not symmetrical. Mixer pump will have to be modified to fit in riser.
3-8-93	WHC-TANKFARM-1993-29	ON	Ammonia-like odors from 241-SY farm.
3-10-93	WHC-TANKFARM-1993-30	ON	Failure to return 104-BY ventilation system to service after testing. O.O.S. from Feb. 24 to Mar. 4.
3-17-93	WHC-TANKFARM-1993-31	ON	Aging waste ventilation system recirc. pump out-of-service, but not tagged out.
1-18-93	WHC-TANKFARM-1993-36	ON	103-BX level increase exceeded level criteria.
4-7-93	WHC-TANKFARM-1993-38	ON	Ammonia-like odors from 241-BX farm.
4-21-93	WHC-TANKFARM-1993-40	ON	102-T core sample casks uncontrolled.
5-10-93	WHC-TANKFARM-1993-47	ON	Raw water leak to ground at 107-C during and after raw water line pressure test.
5-24-93	WHC-TANKFARM-1993-49	ON	241-AP in-service exhauster heater breaker found open.
5-25-93	WHC-TANKFARM-1993-50	ON	Raw water valve left open after maintenance, puddle formed over 102-BY tank. Check valve failed, 3442 gallons spilled.
6-17-93	WHC-TANKFARM-1993-55	ON	Operator smelled foul odor in at 101-A, resulted in headache and dry throat.
6-26-93	WHC-TANKFARM-1993-58	ON	101-SY pressurized and level decrease during venting.
7-14-93	WHC-TANKFARM-1993-62	ON	Portable exhauster supporting 241-SY farm shutdown. Primary exhauster out-of-service. Tripped high pressure alarm.
7-29-93	WHC-TANKFARM-1993-65	ON	Work done on ferrocyanide and organic watchlist tank (TX-118) without electrically bonded tools.
7-31-93	WHC-TANKFARM-1993-68	ON	Unexplained raw water usage after flush of 241-AZ airlift circulators. 665 gallons unaccounted for.
8-8-93	WHC-TANKFARM-1993-70	ON	Attempt to start primary exhauster and shutdown backup exhauster results in high pressure alarm, 241-AN farm.
8-10-93	WHC-TANKFARM-1993-71	ON	Attempting to check for un unplugged drain, a rock was tied to a rope and lowered into open nozzle in tank. Contaminated personnel.
8-12-93	WHC-TANKFARM-1993-73	ON	Administrative hold on tank farm work was imposed due to lapses in management and employee accountability.
8-14-93	WHC-TANKFARM-1993-74	ON	Requirement exceeded for taking pressure readings in 241-SX farm.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
8-16-93	WHC-TANKFARM-1993-75	ON	Personnel cut off tip of finger while changing nitrogen bottles in 241-SY farm.
8-17-93	WHC-TANKFARM-1993-76	ON	Personnel backed van into riser in 241-S farm. Ruptured fuel tank under van.
8-22-93	WHC-TANKFARM-1993-77	ON	Personnel failed to abort 101-SY mixer pump test when indicator failed.
8-26-93	WHC-TANKFARM-1993-78	ON	On numerous occasions the temperature data for watchlist tanks was not taken.
8-27-93	WHC-TANKFARM-1993-79	ON	101-SY tank atmosphere was pressurized momentarily after mixer pump operation.
9-2-93	WHC-TANKFARM-1993-81	ON	Personnel experienced headache and sore throat from unusual odors from 241-TX farm.
9-6-93	WHC-TANKFARM-1993-83	ON	Aging waste tank farm pressure recorder out of paper, violating an Operational Safety Requirement.
9-7-93	WHC-TANKFARM-1993-84	ON	Unexplained raw water usage in 241-AX farm.
9-26-93	WHC-TANKFARM-1993-88	ON	Continuous air monitor at 241-AY and AZ farm (Aging waste) failed.
10-25-93, 11-2-93	WHC-TANKFARM-1993-93	ON	Rollover of 101-SY tank waste caused shutdown of mixer pump due to high pressure trip. (2 occasions)
11-16-93	WHC-TANKFARM-1993-98	ON	241-SX sludge cooler exhauster operating with a vacuum beyond limits.
11-23-93	WHC-TANKFARM-1993-100	ON	Low dP alarm for 241-SY exhauster second stage HEPA filter found disabled.
4-13-93	WHC-TANKFARM-1993-102	ON	241-SY ventilation filters not tested within 72 hours of maintenance, as required.
11-30-93	WHC-TANKFARM-1993-103	ON	Waste tank level requirement changed, 101-AW level exceeds new limit of 416".
12-2-93	WHC-TANKFARM-1993-106	ON	18-inch clay pipe discovered within the 110 foot buffer zone in 241-T farm. Pipe installed in 1943.
12-3-93	WHC-TANKFARM-1993-110	ON	Potential USQ concerning T-111 core samples containing uncharacterized reactive components.
12-10-93	WHC-TANKFARM-1993-111	ON	East/West vent station catch tank level limit exceeded.
12-6-93	WHC-TANKFARM-1993-112	ON	Lock and tag violation on electrical plug in DACS trailer in 241-SY farm.
12-15-93	WHC-TANKFARM-1993-114	ON	241-C farm breathing air carbon monoxide alarm trip due to sampling truck running next to compressor intake.
12-16-93	WHC-TANKFARM-1993-115	ON	U-107 tank added to flammable gas watchlist.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
1-8-94	WHC-TANKFARM-1994-01	ON	Transfer not aborted as required when leak detector tripped.
1-26-94	WHC-TANKFARM-1994-04	ON	AN-105 annulus continuous air monitor removed from service without invoking surveillance as required.
1-27-94	WHC-TANKFARM-1994-05	ON	Failure to install required alarms in DCRTs.
2-1-94	WHC-TANKFARM-1994-06	ON	Steam trap failure in 241-SX farm causes steam plume.
2-10-94	WHC-TANKFARM-1994-07	ON	Primary ventilation lost at 241-AN farm for one hour. Pressures reached atmospheric, but did not go higher.
2-11-94	WHC-TANKFARM-1994-08	ON	Lack of filter paper in alpha radiation detector and faulty microswitch caused exhauster to trip in 241-SY farm. Portable exhauster started.
3-10-94	WHC-TANKFARM-1994-14	ON	Missed filter differential pressure readings in 241-AW and AP tank farms.
4-27-94	WHC-TANKFARM-1994-23	ON	Spurious shutdown signal at evaporator caused 2000 gallons of waste to dump back into 102-AW.
5-16-94	WHC-TANKFARM-1994-027	ON	East/West vent station catch tank level exceeded limit.
5-4-94	WHC-TANKFARM-1994-29	ON	Sample supporting line broke allowing sampling device to fall into 107-AN riser.
6-3-94	WHC-TANKFARM-1994-33	ON	Electrically "hot" taped wires touched terminal strip housing causing a breaker trip that tripped 241-AP primary exhauster. High pressure alarm tripped.
6-9-94	WHC-TANKFARM-1994-34	ON	Lock and danger tag on 101-SY mixer pump breaker left unlocked.
7-5-94	WHC-TANKFARM-1994-38	ON	Steam heat not returned to service after 241-SY exhauster maintenance.
8-5-94	WHC-TANKFARM-1994-40	ON	Electrical utilities severed power cable, lost ventilation in AN, AP, AW, and C farms, and 244-BX and 244-CR.
8-8-94	WHC-TANKFARM-1994-42	ON	Truck driver drove under steam line near 103-SY tank, striking steam line and knocking off insulating material.
8-19-94	WHC-TANKFARM-1994-45	ON	Feeder breaker to 241-AN farm opened, tripping both primary and annulus ventilation fans. Pressurized waste tanks.
8-19-94	WHC-TANKFARM-1994-46	ON	The Ph values for 102-AY and 104-AP samples were below 12. Hydroxide concentrations too low.
8-19-94	WHC-TANKFARM-1994-47	ON	106-S liquid level float missing, wire had corroded after being installed only two months.
8-25-94	WHC-TANKFARM-1994-48	ON	244-CR vault fan #2 out for repair, fan #1 removed from service due to vibration problems. Loss of both fans violates OSD requirements.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
9-13-94	WHC-TANKFARM-1994-49	ON	241-SY continuous air monitor tripped and fan shutdown when testing. Procedure did not include trip bypass step. Tanks pressurized due to fan shutdown.
10-1-94	WHC-TANKFARM-1994-55	ON	241-AW primary ventilation shutdown, could not be restarted. Loss of confinement in farm.
10-4-94	WHC-TANKFARM-1994-57	ON	101-AW tank had gas release event. Tank pressure increased, hydrogen concentration increased, and level decreased. Tank is on hydrogen watchlist.
10-26-94	WHC-TANKFARM-1994-59	ON	Transfer line SL-503 failed during transfer from 204-AR to 102-AY. Tripped leak detector in sluice pit on tank 102-AY.
11-2-94	WHC-TANKFARM-1994-60	ON	Excavators in 241-SY farm discovered, and subsequently punched a hole in the top of, an underground tank they did not know was there.
11-2-94	WHC-TANKFARM-1994-62	ON	During saltwell pumping of 109-BY a high radiation dose rate existed. Saltwell pump discharge also developed a leak.
11-16-94	WHC-TANKFARM-1994-64	ON	101-BX manual tape level readings not taken due to airborne activity in area.
12-8-94	WHC-TANKFARM-1994-67	ON	Main control power breaker tripped at 241-AN. Primary and annulus exhausters shutdown.
12-27-94	WHC-TANKFARM-1994-73	ON	104-SX LOW readings showed 102% of LFL and ammonia >700 PPM. Stopped work in area.
12-28-94	WHC-TANKFARM-1994-74	ON	106-AW exhaust isolation valve closed to watch position indicator. Pressurization alarm tripped.
12-29-94	WHC-TANKFARM-1994-75	ON	This occurrence covers many discoveries of suspect parts. Including 56 bolts in 241-U farm.
1-18-95	WHC-TANKFARM-1995-07	ON	241-SY portable exhauster shutdown while HPT was testing continuous air monitor. Primary system out-of service.
1-20-95	WHC-TANKFARM-1995-08	ON	Potential environmental regulatory deficiency exists due to unknown status of Miscellaneous Underground Storage Tanks.
1-26-95	WHC-TANKFARM-1995-11	ON	Rotary Mode Core Sampler was operated in an unapproved manner ("bumped" while in push mode) while sampling BY-106.
2-1-95	WHC-TANKFARM-1995-13	ON	Personnel failed to wear correct dosimetry (finger rings) while in 106-C sluice pit.
2-15-95	WHC-TANKFARM-1995-14	ON	Rotary Mode Core Sampler operated without proper detector in service.
2-17-95	WHC-TANKFARM-1995-15	ON	Electrical utilities personnel tripped off electrical power to East/West Areas while installing a microwave transfer trip.
2-22-95	WHC-TANKFARM-1995-16	ON	Installation of new level instrument in 104-AP resulted in current level indication below limit.
2-23-95	WHC-TANKFARM-1995-17	ON	Incorrect valve locked out in 241-TX, to replace air dryer and regulating valve.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
1-30-95	WHC-TANKFARM-1995-18	ON	Tank B-103 breather filter isolated from tank by drywell. Tank in contact through other tanks in cascade.
2-13-95	WHC-TANKFARM-1995-20	ON	Propylene glycol leaked from the Rotary Mode Core Sampler truck causing an electrical short and resulted in a fire.
3-7-95	WHC-TANKFARM-1995-22	ON	Caution tag hung in 241-AN farm without authorization signature.
3-7-95	WHC-TANKFARM-1995-23	ON	Transfer from 204-AR to 102-AY leaked into A-350 catch tank, leak in 241-A-A pit nozzle.
3-13-95	WHC-TANKFARM-1995-26	ON	241-T farm breather filter valve discovered in the closed position.
3-16-95	WHC-TANKFARM-1995-27	ON	In preparation for taking a vapor sample from S-111, a valve that was "danger" tagged out for another job was opened.
3-24-95	WHC-TANKFARM-1995-31	ON	General operating condition; potential environmental regulatory deficiency: failure to remove liquids from catch tanks in a timely manner.
3-30-95	WHC-TANKFARM-1995-34	ON	WHC lock and tag removed from S-111 valves, but ICF KH locks and tags still hung. Violation of procedure.
3-29-95	WHC-TANKFARM-1995-35	ON	Auger rod incorrect length for C-101 auger sampling.
4-4-95	WHC-TANKFARM-1995-36	ON	Aging waste facility stack CAM functional test not completed within time limit.
4-11-95	WHC-TANKFARM-1995-39	ON	Rotary mode core sampling truck energized by 120 volts due to incorrect wiring. (no injuries occurred)
4-12-95	WHC-TANKFARM-1995-40	ON	Work done on TY-104 without using bonded tools as required.
4-13-95	WHC-TANKFARM-1995-41	ON	Leak found by 244-A camera crew during B Plant transfer.
4-26-95	WHC-TANKFARM-1995-42	ON	Failure to meet weekly readings requirement for S-108 liquid observation well.
5-3-95	WHC-TANKFARM-1995-44	ON	241-AW pressurization alarm occurred during camera installation in 106-AW central pump pit.
5-2-95	WHC-TANKFARM-1995-45	ON	Subcontractor employee unescorted in 241-TX farm. Violated radiological controls.
5-6-95	WHC-TANKFARM-1995-47	ON	Rotary mode core sampling truck shielded receiver bent due to transversing the drilling rig while the receiver was in the stored position.
5-24-95	WHC-TANKFARM-1995-49	ON	Sampling done in U-103 tank without using the required bonded tools.
5-30-95	WHC-TANKFARM-1995-50	ON	Energized electrical wire struck during hand excavation near 102-AZ tank.
6-16-95	WHC-TANKFARM-1995-52	ON	Discovery of drug contraband in 241-SX instrument shack.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
6-16-95	WHC-TANKFARM-1995-53	ON	Failure of mechanical interlock switches allowed rotation of rotary mode core sampler platform beyond design limits.
6-29-95	WHC-TANKFARM-1995-54	ON	242-T isolated, monitoring discontinued. Monitoring requirements were not changed, so discontinuing the monitoring violated the requirements.
5-15-95	WHC-TANKFARM-1995-56	ON	241-AW lockout installed without proper signature authorization.
7-25-95	WHC-TANKFARM-1995-64	ON	241-SY stack CAM high radiation alarm would not alarm on high radiation.
8-3-95	WHC-TANKFARM-1995-65	ON	Personnel exceeded weekly exposure limit working at BY-105.
8-4-95	WHC-TANKFARM-1995-66	ON	Rotary mode core sampler unable to retrieve complete sample from BY-108 due to failure to install the waste collection sampler in drill string.
8-7-95	WHC-TANKFARM-1995-67	ON	Diesel generator at BX/BY farm fuel leaked into soil.
8-29-95	WHC-TANKFARM-1995-70	ON	Vapor sample taken from B-110 instead of B-112. Person-in-charge was directing operation from outside farm and directed sampling truck to wrong tank.
8-31-95	WHC-TANKFARM-1995-72	ON	244-BX exhauster shutdown. Saltwell pumping from 103, 106, and 109-BX continued into DCRT without exhauster operation as required.
8-31-95	WHC-TANKFARM-1995-73	ON	Potential organic-nitrate chemical reaction discovered for 13 waste tanks. USQ evaluation in progress.
9-13-95	WHC-TANKFARM-1995-75	ON	Lockout at 102-AY airlift circulator valve had unsecured chain.
9-25-95	WHC-TANKFARM-1995-77	ON	241-SY exhauster shutdown, pressurization alarm.
9-27-95	WHC-TANKFARM-1995-78	ON	Core sampling in S-107 found vapor sample drill string reading 130% of Lower Explosive Limit (LEL). Tank headspace sample read 6% LEL.
10-4-95	WHC-TANKFARM-1995-81	ON	Transfer line SN-274 leaked during transfer between AX-B valve pit and 101-AN. Leak at flexible jumper connection. 2 gallons leaked.
10-3-95	WHC-TANKFARM-1995-82	ON	Result of personnel opening breaker at 241-S farm caused shutdown of backup exhauster at 241-SY.
10-5-95	WHC-TANKFARM-1995-86	ON	Implemented new criticality specifications for transfer systems without changing the Interim Safety Basis.
9-26-95	WHC-TANKFARM-1995-90	ON	Found 8000 gallons of liquid in 240-S-151 diversion box. Assume liquid from snow melt and rain, diversion box out of service since March, 1987.
10-19-95	WHC-TANKFARM-1995-91	ON	Incorrect transfer line filled for pressure test. SN-245 filled rather than SN-246.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
10-23-95	WHC-TANKFARM-1995-93	ON	Gravel spreading truck entered and left Radiological Buffer Area in 241-TY farm without proper controls in place.
10-26-95	WHC-TANKFARM-1995-94	ON	Vapor sample of rotary mode core sampler drill string from BY-110 read 300% Lower Explosive Limit. Tank headspace sample read <1% LEL.
10-31-95	WHC-TANKFARM-1995-96	ON	Mobile crane repositioned in 241-AN farm, crushed edge of electrical pull box.
11-2-95	WHC-TANKFARM-1995-97	ON	High pressure alarm at AW-106 tank. High vacuum alarm setpoint outside LCO limit.
11-6-95	WHC-TANKFARM-1995-99	ON	Potential National Fire Prevention Association (NFPA) code deficiency on push and rotary mode core sampling trucks.
11-9-95	WHC-TANKFARM-1995-100	ON	Waste drum at BX/BY Satellite Accumulation Area exceeded stay time limit.
11-13-95	WHC-TANKFARM-1995-101	ON	241-AZ annulus exhauster shutdown and started smoking.
11-15-95	WHC-TANKFARM-1995-105	ON	Grab sample from 102-AY contains less than the requirement for hydroxide.
11-21-94	WHC-TANKFARM-1995-109	ON	Pressure test of supernate transfer line SN-246 (yard line) failed, indicating loss of integrity.
12-5-95	WHC-TANKFARM-1995-111	ON	Unused 1.5" test riser in 241-TY farm found to contain 450% of LFL.
12-6-95	WHC-TANKFARM-1995-112	ON	AN farm exhauster pre-filter changeout occurred without required air sample taken prior to start of work.
12-11-95	WHC-TANKFARM-1995-114	ON	107-AN tank pressure instrument air line froze due to tripped breaker on heat trace line.
12-13-95	WHC-TANKFARM-1995-115	ON	High winds blew off the AN Farm Primary Ventilation System sheet metal cover, shearing the annulus filter differential pressure instruments when the cover came to rest against the annulus stack.
12-22-95	WHC-TANKFARM-1995-120	ON	Discrepancy found between the Operating Specifications Documents (OSD-T-151-00031) requirement for liquid level readings in Tank 102-S and the operator rounds sheets that had been completed.
1-4-96	WHC-TANKFARM-1996-002	ON	Psychometrics performed on 241-AN-tank farm without proper signatures on work package.
1-8-96	WHC-TANKFARM-1996-003	ON	Personnel skin contamination due to pumping leak detection pits in 241-AW farm without wearing any Personal Protective Equipment.
1-15-96	WHC-TANKFARM-1996-007	ON	Sampling results indicated the waste in DCRT 244-TX did not meet the requirements for hydroxide concentration.
1-17-96	WHC-TANKFARM-1996-009	ON	When lifting the quill rod portion of the rotary mode core sampler out of tank 109-U (a flammable gas watchlist tank) a mechanical spark was generated.

TANK FARM EVENTS, OFF-NORMAL (ON) and CRITIQUES			
DATE	**EVENT #**	**EVENT TYPE**	**EVENT DESCRIPTION**
1-17-96	WHC-TANKFARM-1996-010	ON	During work in the 241-S tank farm to remove the above ground ventilation system ducting, the required surveys of the vacuum outlet HEPA filters had not been performed.
1-22-96	WHC-TANKFARM-1996-011	ON	Inadequate work release at 242-A Evaporator results in near-miss electrical incident.
1-30-96	WHC-TANKFARM-1996-012	ON	Pressure transmitter for tank 106-AW failed which disabled the alarm capabilities.
2-1-96	WHC-TANKFARM-1996-013	ON	Failed pressure switch caused shutdown of 241-SY primary exhauster.
2-7-96	WHC-TANKFARM-1996-014	ON	Decontamination spray wand was being tested when a leaking connection sprayed contamination on the operator. To be used on tank 107-AN camera.
2-9-96	WHC-TANKFARM-1996-015	ON	209-E car and mixer room exhauster unscheduled shutdown due to a fire system valve opening.
2-13-96	WHC-TANKFARM-1996-016	ON	Discovered cesium-137 under 241-SX tank farm at the 110 foot depth. This is much deeper than previously assumed or modeled.
2-15-96	WHC-TANKFARM-1996-017	ON	While removing a thermocouple tree from 101-AZ the tree got stuck with 37 feet of it out, and 18 feet still in the tank. Operator used his hands to shake the tree and received a high radiation dose.
2-21-96	WHC-TANKFARM-1996-019	ON	Railcar was scheduled to have 1000 to 1500 gallons pumped into it at T-Plant. It was found to have 15,000 to 18,000 gallons in it instead of the 1000 to 1500 gallons.
3-8-96	WHC-TANKFARM-1996-022	ON	The AY-02A pit center cover block was removed for pit upgrade. Cores had been drilled in it, and cracks were appearing, making the structural integrity questionable. To be replaced.
3-7-96	WHC-TANKFARM-1996-023	ON	Plugged instrument air line to 101-AY pressure instruments, caused failure of remote monitoring.
3-18-96	WHC-TANKFARM-1996-026	ON	Unauthorized low flying helicopters performing aerial radiological surveys over 241-A, AW, AX, AY, AZ, and C farms.
3-20-96	WHC-TANKFARM-1996-027	ON	Discovered no pressure on 204-AR Fire Suppression System when conducting fire system tests.
3-21-96	WHC-TANKFARM-1996-028	ON	101-SY mixer pump operated with no ammonia monitoring to the DACS system. One monitor was out of service, the other failed during the pump run.
4-9-96	WHC-TANKFARM-1996-032	ON	241-SY primary exhauster shutdown automatically for no apparent reason. Tanks did not pressurize.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
72-26	04/20/1972	WASTE TRANSFER LINE THAT FLOWS TO 241-A-152 LEAKED INTO ENCASEMENT, THEN THRU COVER BLOCK JOINTS TO GROUND.	WASTE LINE FAILED, ENCASEMENT DRAINS PLUGGED.
72-49	07/06/1972	IRONWORKER-RIGGER PREPARING TO RELEASE A JAM, CABLE LET GO AND BROKE HIS FINGER.	ERROR IN JUDGMENT WHEN WORKING AROUND PINCH POINTS.
72-54	08/11/1972	BROKE 6-INCH SANITARY WATER LINE WITH BACKHOE.	PERSONNEL ERROR, FAILURE TO NOTE WATER LINE USING DETAILED DRAWING.
72-67	10/29/1972	MISROUTED 3,700 GALLONS OF PAS TO TANK 101-AY INSTEAD OF 003-CR.	PERSONNEL ERROR/INCORRECT SETTING FOR TRANSFER ROUTE MADE AT 151-AX DIVERTER STATION.
72-72	11/20/1972	LEAK FROM TRANSFER LINE DURING FLUSHING CAUSED SPRAY UP THROUGH VALVE OPERATOR HOLES IN VALVE PIT COVER.	GASKET FAILURE IN VALVE PIT.
73-1	01/08/1973	LIVE 13.8 KV LINE DOWN NEAR 244 UR, LINE WAS FLASHING AND BURNING.	WIRE BROKE FROM APPARENT FATIGUE ON WIRE FROM COLD WEATHER AND VIBRATION.
73-45	07/05/1973	BACKHOE RAN OVER AND BROKE A FLANGE ON A BELOW GRADE RISER ON A TRANSFER LINE AT 241-T TANK FARM. WATERY LIQUID WAS SEEN SEEPING FROM THE GROUND.	PIPE FLANGES ON TRANSFER LINES AT T-FARM WERE NOT ADEQUATELY MARKED.
73-73	11/01/1973	FAILURE OF A HEATER IN 241-TX-118 VENTILATION EXHAUST CAUSED LOADING OF PRIMARY FILTER.	MECHANICAL FAILURE OF OFF-GAS HEATER.
73-78	11/14/1973	DURING TRANSFER FROM 107-S TO 102-S THE TRANSFER LINE PLUGGED AND WASTE BACKED UP AND FLOWED OUT THE TANK RISER ONTO THE GROUND.	APPARENT PLUGGING OF TRANSFER LINE BY CRYSTALLIZED MATERIAL.
73-80	11/15/1973	POSSIBLE TANK DOME OVERLOADING AFTER WASTE SPILL IN S-FARM. SOIL WAS PLACED OVER THE SPILL AND POSSIBLY OVERLOADED 102-S AND 103-S DOMES.	PROCEDURE/ WEIGHT OF COVER SOIL WAS NOT KNOWN PRIOR TO COVERING THE TANKS.
73-82	11/21/1973	RAIN AND ROTTING TIMBERS CAUSED SUBSIDENCE OF 216-B-12 CRIB, CRIB REMOVED FROM SERVICE.	DEGRADATION OF CRIB OVER TIME.
73-86	12/11/1973	EMPLOYEE ENTERED THE AREA OF AN OPEN 42" RISER ON 118-TX TANK WITHOUT RESPIRATOR OR LIFE BELT.	PERSONNEL FAILURE TO FOLLOW PROCEDURE CONCERNING ENTRANCE TO AREA WITH OPEN RISER.
74-9	02/15/1974	NEW LEVEL LIMITS ESTABLISHED FOR WASTE TANKS IN AUGUST, 1973, FOUND THAT THERE WERE 19 TANKS THAT EXCEEDED THE NEW LIMITS, 8 TANKS STILL EXCEEDED THE LIMIT ON 2/15/74.	EVAPORATOR OUTAGES HAVE PREVENTED EMPTYING THE TANKS AS RAPIDLY AS SCHEDULED.
74-16	03/09/1974	LARGE AMOUNT OF FOAM (FROM SLUDGE ACIDIFICATION) IN 244-AR VAULT TANK 001 MIGRATED INTO TANKS 002, 004 AND TO THE VESSEL VENT HEADER, WHICH FAILED THE HEPA FILTER.	INCREASED FOAM DEVELOPED DUE TO A RISE IN pH DURING ACIDIFICATION.
74-21	03/27/1974	UNEXPLAINED DECREASE OF 0.3 INCHES IN WASTE TANK 105-S.	UNKNOWN.
74-22	03/24/1974	UNEXPLAINED DECREASE OF 0.45 INCHES IN WASTE TANK 112-S.	UNKNOWN.
74-23	04/03/1974	UNEXPLAINED DECREASE OF 1 1/2 INCHES IN WASTE TANK 110-TX.	UNKNOWN.
74-26	04/08/1974	UNEXPLAINED DECREASE OF 0.30 INCHES IN WASTE TANK 112-BX.	UNKNOWN.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
74-27	04/05/1974	UNEXPLAINED DECREASE OF LEVEL IN WASTE TANK 107-BY.	UNKNOWN.
74-28	04/10/1974	UNEXPLAINED DECREASE OF 3 1/2 INCHES IN WASTE TANK 102-TX.	UNKNOWN.
74-29	04/07/1974	WASTE TANK 109-TX EXCEEDED TEMPERATURE INCREASE LIMIT OF 22oC (40oF) IN EIGHT DAY PERIOD.	RESTART OF EVAPORATOR FEED TO THIS TANK AND INADEQUATE RESPONSE TIME DID NOT ALLOW MIXING PHENOMENA TO DEVELOP.
74-30	03/31/1974	FAILURE TO OBTAIN MONTHLY SAMPLES FROM TANK 102-AY, THE SPARE BOILING WASTE TANK IN 200 EAST AREA	PERSONNEL ERROR, FAILURE TO FOLLOW ADMINISTRATIVE CONTROLS.
74-31	04/13/1974	FAILURE TO OBTAIN FIC GAUGE READINGS IN 241-T FARM AS REQUIRED.	MECHANICAL FAILURE. ELECTRICAL SHORT AND RESULTING MCC FIRE (CAUSED BY BIRD NEST IN MCC ENCLOSURE) PREVENTED TAKING TANK LIQUID LEVEL READINGS.
74-32	04/18/1974	INSTRUMENT POWER OUTAGE IN 241-S TANK FARM CAUSED BY PERSONNEL AUGURING A TEST HOLE TO FIND A PIPING LEAK.	PERSONNEL FAILURE. EMPLOYEE FAILED TO HAND DIG PRIOR TO USING THE AUGER. CABLES WERE NOT IN THE LOCATION INDICATED ON THE TANK FARM DRAWING.
74-37	05/03/1974	DURING A TRANSFER THE LEVEL IN 102-BY DROPPED 10 INCHES, INCREASED 10 3/4 INCHES IN TANK 111-BX. LEVEL IN 111-BX EVENTUALLY DROPPED 3/4 INCH (CONSIDERED SIGNIFICANT LEVEL DECREASE).	LEVEL DECREASE BELIEVED TO BE CAUSED BY STABILIZATION OF THE CRUST SURFACE AFTER TRANSFER.
74-38	05/03/1974	SIGNIFICANT RADIATION READINGS IN A LEAK DETECTION LATERAL BELOW TANK 111-SX.	APPARENT TANK LEAK, TANK SALTWELL PUMPED AFTER LEAK INDICATED.
74-41	05/19/1974	244-AR VAULT VESSEL VENT SECONDARY HEPA FILTERS FOUND WET AND PERFORATED AFTER REPLACEMENT OF PRIMARY FILTERS.	ASSUMED DEPOSITION OF AMMONIUM NITRATE ON FILTERS FROM B PLANT DAMAGED FILTERS.
74-43	05/27/1974	3800 GALLONS OF PUREX ACIDIFIED SLUDGE MISTRANSFERRED FROM 244-AR VAULT TO 106-A TANK INSTEAD OF TO CR VAULT.	PERSONNEL FAILURE. DIVERTER SETTINGS INCORRECT.
74-44	05/27/1974	150 GALLONS OF NITRIC ACID ADDED TO TANK 002 AT 244-AR VAULT INSTEAD OF TANK 001. ADDED TO 10,500 GALLONS OF SLUDGE SLURRY.	PERSONNEL ERROR. OPENED WRONG VALVE OUT OF CHEMICAL MAKEUP TANK.
74-88	06/13/1974	INCREASED ACTIVITY IN TANK 106-TY DRY WELL INDICATES TANK LEAK.	MECHANICAL FAILURE. TANK DEGRADATION OVER TIME. (SUSPECTED LEAKER IS 105-TY)
74-101	06/25/1974	INCREASED ACTIVITY IN DRY WELLS BY TANK 103-TY.	ASSUMED TANK LEAKAGE, DEGRADATION OVER TIME.
74-102	06/26/1974	INCREASED ACTIVITY IN TANK 105-TY DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-103	06/27/1974	SUSPECTED DEFORMED TANK LINER IN TANK 201-B.	CORRODED BAFFLE DROPPED INTO TANK BELOW A RISER, CONJECTURED TO BE A LINER DEFORMATION.
74-104	06/27/1974	INCREASED ACTIVITY IN TANK 101-BX DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-106	07/01/1974	INCREASED ACTIVITY IN TANK 103-BY DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-108	07/07/1974	INCREASED ACTIVITY IN DRY WELL AND TANK 109-T LEVEL DROP INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-112	07/18/1974	INCREASED ACTIVITY IN TANK 110-B DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-117	08/07/1974	INCREASED ACTIVITY IN TANK 105-BY DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
74-120	08/13/1974	INCREASED ACTIVITY IN DRY WELLS BETWEEN TANKS 104-C AND 105-C INDICATES POSSIBLE TANK LEAK.	ASSUMED FROM OTHER INDICATIONS THAT THESE TANKS ARE SOUND, NO LEAKAGE. LEAK INDICATION COULD BE FROM EARLIER LEAK IN SPARE FILL LINE TO 105-C.
74-121	08/16/1974	RADIOACTIVE LIQUID LEAKED FROM SAMPLE CUP RISER IN TANK 001-AR AT 244-AR VAULT DURING pH METER STANDARDIZATION.	CAUSE WAS NOT DETERMINED.
74-123	08/16/1974	INCREASED ACTIVITY IN TANK 102-BY DRY WELL INDICATES TANK LEAK.	ASSUMED FROM OTHER INDICATIONS THAT THIS TANK IS SOUND. READINGS COULD BE FROM LATERAL MIGRATION OF SOIL CONTAMINATION.
74-127	08/26/1974	CONTAMINATION SPREAD DURING CLEANUP OF 154-B DIVERSION BOX.	CONTAMINATION SPREAD DUE TO WIND-CARRY OF PARTICULATE.
74-129	09/04/1974	INCREASED ACTIVITY IN TANKS 113 AND 114-TX DRYWELL INDICATE TANK LEAK.	ACTIVITY ASSUMED TO BE FROM TANK LEAKAGE OR SOIL CONTAMINATION MIGRATION.
74-130	09/16/1974	CONTAMINATION SPREAD DURING TRANSFER OF 53 FOOT LONG TUBE BUNDLE HEAT EXCHANGER FROM TANK 104-A TO 101-A.	PERSONNEL ERROR/PROCEDURE.
74-132	09/24/1974	UNEXPLAINED DECREASE OF 1 INCH OF LIQUID LEVEL IN TANK 110-SX.	UNKNOWN.
74-134	10/09/1974	SPILL OF 1 1/2 GALLONS OF RADIOACTIVE LIQUID WHEN OPENING A STRAINER TO ISOLATE A STEAM COIL FOR MAINTENANCE IN 241-A FARM.	PERSONNEL ERROR/PROCEDURE. PIPEFITTER ASSUMED GAUGE WAS INCORRECT WHEN IT SHOWED 20 PSIG REMAINING IN STRAINED AFTER DRAIN OPENED. THEN PLUG UNPLUGGED.
74-141	10/28/1974	INCREASED ACTIVITY IN TANK 101-B DRY WELL INDICATES TANK LEAK.	TANK LEAKAGE, DEGRADATION OVER TIME.
74-144	11/05/1974	CONTAMINATION SPREAD FROM OPEN PUMP PIT ON TANK 106-A DURING REMOVAL OF A FAILED JUMPER. THE JUMPER WAS DROPPED AND CONTAMINATION SPLASHED UP OVER THE PIT WALL.	PROCEDURE, NOT SUFFICIENT CONTAINMENT PROVIDED WHILE PUMP PIT OPEN.
74-148	11/22/1974	INCREASED ACTIVITY BETWEEN TANKS 108-C AND 109-C.	ASSUMED MIGRATION OF SOIL CONTAMINATION.
74-151	12/02/1974	LIQUID LEVEL IN TANK 102-SX DECREASED 1 INCH AFTER A TRANSFER INTO TANK.	ASSUMED TANK SETTLING TOOK LONGER THAN USUAL.
74-152	12/05/1974	LIQUID LEVEL IN TANK 112-TX DECREASED 4 1/2 INCHES AFTER A FLUSH OF MANUAL LIQUID LEVEL TAPE.	ASSUMED A DEPRESSION FORMED IN TANK CRUST AS A RESULT OF WATER FLUSHING THROUGH MANUAL TAPE.
74-153	12/13/1974	INCREASED ACTIVITY IN TANK 107-BY DRY WELLS.	ASSUMED MIGRATION OF SOIL CONTAMINATION.
74-154	12/11/1974	MISROUTING OF WASTE DURING TRANSFER FILLED 241-EW VENT STATION CATCH TANK FROM 18.75 INCHES TO 73.75 INCHES.	PERSONNEL ERROR. TFO PLANNER-SCHEDULER ERRED IN NOZZLE CONNECTION PROCEDURE INSTRUCTIONS.
74-159	12/30/1974	UNDERGROUND ELECTRICAL CABLE POWERING 244-AR VAULT COOLING WATER EFFLUENT DIVERSION VALVE BROKEN BY BACKHOE EXCAVATION.	PERSONNEL ERROR. BACKHOE OPERATOR CLEARED TRENCH WITHOUT HAND DIGGING TAKING PLACE.
75-02	01/06/1975	INCREASED ACTIVITY BETWEEN TANKS 105-T AND 108-T.	ASSUMED THAT TANK 105-T IS SOUND, AND 108-T IS QUESTIONABLE DUE TO OTHER MEASUREMENTS.
75-03	01/06/1975	244-AR VAULT HAD AN ACTIVATION OF EMERGENCY VENTILATION SYSTEM, AND VESSEL VENT SYSTEM SHUTDOWN.	MECHANICAL FAILURE, OVERHEATED CIRCUIT BREAKER IN ELECTRICAL SUPPLY TO AIR COMPRESSOR.
75-04	01/07/1975	INCREASED ACTIVITY BETWEEN TANKS 110-SX AND 111-SX.	UNKNOWN.
75-05	01/08/1975	ACTIVATION OF 244-AR EMERGENCY VENTILATION SYSTEM SEVERAL TIMES IN MORNING.	HIGH WINDS CAUSED DIFFERENTIAL PRESSURE FLUCTUATIONS THAT TRIPPED EMERGENCY SYSTEM.
75-09	01/31/1975	241-U FARM TANK DOME LOADING INDICATES THE SOIL COVER OVER THE TANKS IS ONE FOOT HIGHER THAN AS-BUILT DRAWINGS, POTENTIAL OVERLOAD.	DRAWINGS WERE INCORRECT, BUT DOME LOADINGS ARE WITHIN LIMITS.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
75-15	02/13/1975	SPILL OF CONTAMINATION TO GROUND DURING OVERGROUND TRANSFER FROM TANK 105-BY.	PERSONNEL ERROR, MATERIAL FAILURE. PLASTIC WRAPPED JOINTS ON OVERGROUND LINE DID NOT HOLD THE LEAK.
75-16	02/13/1975	RELEASE OF CONTAMINATION OUTSIDE 244-AR VAULT WHEN WASHING CANYON FLOOR AND WATER PUDDLED UNDER DOOR. A LOSS OF BUILDING NEGATIVE PRESSURE ALLOWED CONTAMINATION OUTSIDE.	PERSONNEL ERROR. FLOOR WASHED DURING PLANNED USE OF EMERGENCY GENERATOR, WHICH CAUSED A TEMPORARY LOS OF BUILDING NEGATIVE PRESSURE.
75-17	02/18/1975	DECREASE IN LIQUID LEVEL IN TANK 101-T AFTER TRANSFER INTO TANK.	ASSUMED STABILIZATION OF SURFACE AFTER TRANSFER.
75-19	02/18/1975	DECREASE IN LIQUID LEVEL IN TANK 112-BY.	ASSUMED TANK CRUSTING IS ERRATIC.
75-29	03/21/1975	FAILURE OF SECONDARY FILTERS IN 244-AR VAULT VESSEL VENT SYSTEM, FILTERS WERE WET AND WARPED.	UNKNOWN. (ALSO SEE 74-41 OCCURRENCE)
75-33	03/31/1975	244-AR VAULT COOLING WATER DIVERSION VALVE DIVERTED AFTER RADIATION ALARM IN CANYON.	RADIATION ALARMS ATTRIBUTED TO WELDING IN AREA.
75-35	04/04/1975	EMPLOYEE FORCED A SAMPLER INTO TANK AFTER THE SAMPLER HAD REACHED THE BOTTOM OF TANK. SAMPLER BOWED, WHICH CAUSED IT TO BE DIFFICULT TO REMOVE THRU RISER, BREAKING THE SAMPLE WIRE.	PERSONNEL ERROR, DEVIATION FROM PROCEDURE.
75-36	04/06/1975	OVERFILLED TANK 002-CR IN 271-CR, TANK LIMIT IS 13,000 GALLONS, FILLED WITH 16,947 GALLONS.	PERSONNEL ERROR. OPERATOR PUSHED PUMP BUTTON INSTEAD OF AGITATOR BUTTON.
75-38	04/09/1975	TANK 101-BY LIQUID LEVEL EXCEEDED LEVEL LIMIT.	UNCONTROLLED WATER ADDITIONS DURING PUMP INSTALLATION, TESTING AND FLUSHING.
75-39	04/08/1975	LEAKAGE FROM TANK 104-A, AS NOTED IN LATERALS BENEATH TANK.	MECHANICAL FAILURE, TANK LINER FAILED.
75-41	04/08/1975	LIQUID LEVEL IN TANK 107-U DECREASED .80 INCHES.	ASSUMED TRANSFER INTO TANK CAUSED FOAMING WHICH HAD TO STABILIZE.
75-42	04/09/1975	TRANSFER OF WASTE WITH pH OF 4.2 FROM 244-AR TO TANK 107-U. pH LIMIT SHOULD BE GREATER THAN 9.	ASSUMED PERSONNEL ERROR.
75-44	04/08/1975	LIQUID LEVEL IN TANK 104-TX DECREASED .70 INCHES.	ASSUMED LEVEL DECREASE DUE TO ADDITION OF HOT WASTE AND THE RESULTING EVAPORATION VIA EXHAUSTER OPERATION.
75-47	04/09/1975	INCREASED ACTIVITY IN TANK 104-AX DRY WELL.	ASSUME THAT ACTIVITY IS DUE TO SHALLOW CONTAMINATION FROM EARLIER FAILED TRANSFER LINES, SURFACE SPILLS, OR OTHER DIRECT BURIED FACILITY FAILURES.
75-51	04/18/1975	LIQUID LEVEL IN TANK 108-T DECREASED .60 INCHES.	UNKNOWN.
75-54	04/17/1975	INCREASED RADIATION ACTIVITY IN LATERAL BENEATH TANK 112-SX.	ASSUMED THAT THE ACTIVITY IS DUE TO PRE-EXISTING CONTAMINATION.
75-56	04/18/1975	INCREASED ACTIVITY IN TANK 107-BY DRY WELLS.	UNKNOWN, COULD BE TANK LEAK OR REDISTRIBUTION OF SOIL CONTAMINATION.
75-57	04/25/1975	LIQUID LEVEL IN TANK 107-TX DECREASED .80 INCHES.	ASSUME LEVEL DECREASE DUE TO INCREASED EVAPORATION FROM EXHAUSTER OPERATION.
75-58	04/30/1975	INCREASED ACTIVITY IN TANK 101-B DRY WELL.	UNKNOWN, COULD BE TANK LEAK OR MIGRATION OF SOIL CONTAMINATION.
75-60	05/16/1975	INCREASED ACTIVITY IN TANK 102-AX DRY WELL.	UNKNOWN.
75-61	05/23/1975	HIGH dP ACROSS TANK 118-TX EXHAUSTER HEPA FILTERS.	PERSONNEL ERROR. FAILURE TO RESPOND TO INCREASING dP INDICATION AND CHANGE FILTERS.
75-64	06/07/1975	LIQUID LEVEL IN TANK 106-TX DECREASED 5 1/2 INCHES.	UNKNOWN.
75-67	06/26/1975	LIQUID LEVEL IN TANK 110-U DECREASED .50 INCHES.	TANK DECLARED A LEAKER ON 7/9/75.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
75-68	06/25/1975	INCREASED ACTIVITY IN LATERAL BENEATH TANK 112-SX.	TANK IS A LEAKER, INCREASED ACTIVITY COULD BE DUE TO SHIFT IN SOIL CONDITIONS.
75-69	06/25/1975	INCREASED ACTIVITY IN LATERAL BENEATH TANK 115-SX.	LIMITED CHANGE, READINGS TAKEN WITH A NEW, MORE SENSITIVE INSTRUMENT.
75-78	07/16/1975	JUMPER CONNECTOR FAILURE DURING WASTE TRANSFER FROM 107-TX TO 103-U. JUMPER LOCATED IN 153-TXR DIVERSION BOX.	MECHANICAL FAILURE OF FLEX JUMPER, THREADS STRIPPED.
75-82	07/29/1975	VEHICLE ACCIDENT IN 241-U TANK FARM, STRUCK AN 8-INCH WELL CASING THAT PROTRUDED UP 18-INCHES. PICKUP TRUCK HAD TO BE LIFTED OFF THE CASING.	PERSONNEL ERROR. CUT A TURN SHORT, NON-ESSENTIAL TANK FARM TRAFFIC NEEDS TO BE ELIMINATED.
75-87	07/31/1975	INCREASED ACTIVITY IN TANK 101-B DRY WELL.	UNKNOWN, COULD BE FROM PREVIOUS SOIL CONTAMINATION.
75-85	08/05/1975	EXCESSIVE LIQUID LEVEL IN TANK 105-A, LIMIT EXCEEDED BY 4 1/2 INCHES.	PERSONNEL ERROR, ACCIDENTAL RAW WATER DISCHARGE TO TANK.
75-86	07/24/1975	MINOR INJURY WHILE LIFTING A COVER PLATE WITH CRANE AT 104-TX PUMP PIT.	PERSONNEL ERROR. WORK BEGUN PRIOR TO CRANE LOAD BEING SECURED.
75-89	08/15/1975	SHARP DECREASE IN TANK 103-SX LEVEL FOLLOWING TRANSFER FROM 106-SX.	ASSUMED TRANSFER OF 100,000 GALLONS OF DILUTE 242-S FEED BROKE DOWN THE HEAVY CRUST FORMATION IN TANK.
75-90	08/17/1975	INCREASED ACTIVITY IN TANK 102-AX DRY WELL.	ASSUMED MIGRATION OF SOIL CONTAMINANTS.
75-92	08/20/1975	244-AR VAULT VESSEL VENT SYSTEM SHUTDOWN DUE TO HIGH dP ACROSS FILTER.	PERSONNEL ERROR. TANK 001-AR pH EXCEEDED LIMITS CAUSING FOAM THAT CARRIED OVER TO VENTILATION SYSTEM.
75-94	06/18/1975	WASTE DRUM CONTAINING GREATER THAN 200 GRAMS OF PLUTONIUM STORED AT THE ASPHALT STORAGE PAD.	PERSONNEL ERROR. FAILURE TO FOLLOW ADMINISTRATIVE PROCEDURE.
75-97	08/22/1975	UNPLANNED WASTE TRANSFER FROM 102-A TANK TO 101-A TANK.	PERSONNEL ERROR. INADVERTENT ENERGIZING OF 102-A PUMP INSTEAD OF 101-A PUMP.
75-98	08/15/1975	EXCESSIVE DOME LOADING IN TANK FARMS A, AX, AY, AZ, BX, BY, AND TX.	PERSONNEL ERROR. IDENTIFIED BY TOPOGRAPHIC SURVEYS.
75-101	08/09/1975	LIQUID LEVEL DECREASE OF .70 INCHES IN TANK 107-TX FOLLOWING TRANSFER OUT OF TANK.	ASSUMED LEVEL DECREASE DUE TO EVAPORATION VIA EXHAUSTER.
75-102	09/17/1975	BURIAL OF SIX DRUMS OF POTENTIALLY EXPLOSIVE MATERIAL IN BURIAL TRENCH.	PERSONNEL ERROR. FAILURE TO FOLLOW DISPOSAL PROCEDURES.
75-108	09/29/1975	LIQUID LEVEL LIMIT EXCEEDED IN TANK 110-S, INCREASED 9 INCHES IN FIVE MONTHS.	SUSPECTED UNKNOWN CHEMICAL PHENOMENON CAUSING TANK CONTENTS GROWTH.
75-109	09/30/1975	LIQUID LEVEL LIMIT EXCEEDED IN TANK 111-S, INCREASED 10 INCHES IN FIVE MONTHS.	SUSPECTED UNKNOWN CHEMICAL PHENOMENON CAUSING TANK CONTENTS GROWTH.
75-110	10/02/1975	RADIATION ALARM IN 101-AY "B" LEAK DETECTION PIT AFTER TRANSFER FROM 152-AX DIVERTER STATION CATCH TANK.	UNKNOWN, TRANSFER PIPELINE MAY HAVE LEAKED.
75-111	10/03/1975	2200 GALLON WASTE TRANSFER THROUGH OPEN JUMPER NOZZLE FLOWED VIA PUMP PIT DRAIN INTO INCORRECT TARGET TANK.	PERSONNEL ERROR. JUMPER NOT INSTALLED FOR TRANSFER, ROUTE NOT CHECKED.
75-115	10/11/1975	SMALL, SLOW, LEAK OCCURRED IN OVERGROUND TRANSFER LINE BETWEEN 108-C AND 103-C.	MECHANICAL FAILURE. LEAK AT CONNECTOR HEAD TO TRANSFER PUMP.
75-116	10/11/1975	LIQUID LEVEL DECREASE IN TANK 102-SX AFTER 242-S SLURRY TRANSFER IN.	SUSPECTED SLURRY BUILDUP AT ENTRANCE TO TANK, THEN SLOWLY FLOWED OUT OVER WASTE SURFACE.

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75-117	10/09/1975	LIQUID LEVEL DECREASE IN TANK 110-BY AFTER TRANSFER IN.	INTRODUCTION OF STEAM AND HOT WATER TRANSFER LINE FLUSH SEEMS TO CAUSE A LEVEL DROP IN TANK.
75-118	10/12/1975	LIQUID LEVEL INCREASE IN TANK 110-SX AFTER TRANSFER OUT.	SUSPECT A DEPRESSED AREA AROUND PUMP OCCURRED DURING TRANSFER IS SLOWLY FILLING IN.
75-119	10/14/1975	401-SX BUILDING VESSEL VENTILATION CONDENSATE COOLING WATER EXCEEDED RADIONUCLIDE SPECIFICATIONS.	UNKNOWN, BUT SUSPECTED FAILED CONDENSER.
75-127	11/09/1975	MISROUTING OF TRANSFER INTO TANK 102-AY INSTEAD OF 103-A.	PERSONNEL ERROR. USED WRONG PROCEDURE FOR SECOND PHASE OF TRANSFER.
75-130	11/14/1975	CONTAMINATION SPREAD IN PARKING AREA NEAR A FARM VENTILATION BUILDING. EXHAUSTS A, AX, AY, AND AZ FARMS.	UNKNOWN, ASSUME SOURCE IS A FARM VENTILATION STACK.
75-132	11/10/1975	LIQUID LEVEL IN TANK 111-BY DECREASED 1 INCH OVER FOUR DAYS.	SUSPECT LEVEL LOST VIA EVAPORATION, AND PROBLEM WITH DIFFICULTY IN READING TANK LEVEL.
75-134	11/21/1975	MISROUTED WASTE TRANSFER FROM 104-SX TO 101-SX PIT.	PERSONNEL ERROR. OPERATOR CHANGED VALVE SETTINGS WHILE WALKING THROUGH A PROCEDURE.
75-135	10/31/1975	A FARM PROCESS CONDENSATE pH TOO LOW.	SUSPECT pH PROBLEM FROM 102-AY STEAM COIL CONDENSATE.
75-141	12/02/1975	SIGNIFICANT MATERIAL BALANCE DISCREPANCY AFTER TRANSFER FROM TANK 102-C TO 103-C.	UNKNOWN, SUSPECT LEVEL GAUGE ANOMALIES A RESULT OF THE CHARACTER OF THE MATERIAL SURFACE IN TANK 102-C.
75-145	12/19/1975	POSSIBLE TRANSFER PIPING LEAKAGE DURING TRANSFER FROM TANK 103-B TO 110-SX.	UNKNOWN, MATERIAL BALANCE PROBLEM WAS NOT RESOLVED.
75-146	12/26/1975	LIQUID LEVEL IN TANK 114-TX DECREASED 11.25 INCHES.	SUSPECT A SHIFT IN SURFACE BEING CONTACTED BY THE LEVEL PROBE.
75-147	12/30/1975	INCREASED ACTIVITY IN TANK 101-T DRY WELL.	SUSPECT ACTIVITY IS FROM A MIGRATION OF SOIL CONTAMINATION.
76-04	01/09/1976	SIGNIFICANT RADIATION READINGS IN AN EXCAVATION SITE WHERE PERSONNEL WERE WORKING DUE TO A WASTE TRANSFER NEARBY.	PERSONNEL ERROR. RISK TO PERSONNEL FROM WASTE TRANSFER NOT ADEQUATELY CONSIDERED.
76-05	01/16/1976	LIQUID LEVEL IN TANK 101-S DECREASED MORE THAN 1 INCH.	SUSPECT A COLLAPSE OF FOAM AFTER A RECENT TRANSFER INTO TANK.
76-06	01/17/1976	LIQUID LEVEL DECREASE IN TANK 106-TX FOLLOWING A FLUSH OF THE LEVEL MONITORING TAPE.	SUSPECT A BUILDUP OF CRUST ON THE MANUAL TAPE PLUMB.
76-08	01/20/1976	INCREASED ACTIVITY IN TANK 104-AX DRY WELL.	ASSUMED MIGRATION OF SOIL CONTAMINATION.
76-14	01/29/1976	LIQUID LEVEL IN TANK 109-C DECREASED .90 INCHES.	ASSUME LEVEL CHANGE INDICATION DUE TO BUILDUP OF SOLIDS ON TAPE PLUMMET.
76-15	01/27/1976	CROSS-COUNTRY TRANSFER LINE PLUGGED DURING TRANSFER FROM 107-S TO 109-B AFTER PUMP SHUTDOWN DUE TO POWER LOSS.	PLUG DUE TO CUTTING DILUTION WATER DURING TRANSFER.
76-21	02/18/1976	WIND SWEPT TUMBLEWEEDS FORCED A VALVE OPEN SPILLING RAW WATER INTO 241-TX-155 DIVERSION BOX, AND SEVERAL CATCH TANKS AND INTO 20 OPEN NOZZLES. SPILLED 35,000 GALLONS.	ASSUME THAT WIND SWEPT TUMBLEWEEDS FORCED OPEN AN L-SHAPED VALVE HANDLE.
76-22	02/17/1976	RAW WATER SPILL (UOR 76-21) CAUSED LIQUID LEVEL INCREASE BEYOND LIMIT IN TANK 103-TY, A KNOWN LEAKER.	LEVEL INCREASE CAUSED BY OVERFLOW FROM CATCH TANK TX-302-B.
76-23	02/17/1976	LIQUID LEVEL DECREASE IN DIVERSION BOX 155-TX AND CATCH TANK TX-302-B AFTER RAW WATER SPILL (UOR 76-21).	ASSUME WATER LEVEL DECREASE DUE TO LEAKS IN DIVERSION BOX-CATCH TANK STRUCTURE.
76-24	02/23/1976	STEAM USED INSTEAD OF AIR AFTER TRANSFER LINE FLUSH.	PERSONNEL ERROR. FAILURE TO FOLLOW PROCEDURE.
76-25	02/26/1976	OPERATOR INJURED HIS FOOT WHEN HE SLIPPED AS A CAISSON WAS BEING LIFTED OUT OF THE GROUND AT 241-BX TANK FARM.	PERSONNEL ERROR. OPERATOR TRIED TO PULL FALLEN WOODEN BARRICADE FROM HOLE, AND SLIPPED INTO HOLE.

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76-30	03/10/1976	LIQUID LEVEL INDICATION DECREASED FOR 152-AX DIVERTER STATION CATCH TANK DURING WASTE TRANSFER.	MECHANICAL FAILURE. APPARENT FAILURE OF LEVEL INSTRUMENTATION.
76-31	03/17/1976	LIQUID LEVEL IN TANK 112-BY DECREASED 2 1/2 INCHES.	ASSUMED CRUST HAS SHIFTED CAUSING LEVEL DECREASE INDICATION.
76-36	03/23/1976	LIQUID LEVEL IN TANK 102-BY DECREASED 1 INCH.	ASSUMED CRYSTAL BUILDUP ON LEVEL PLUMMET CAUSED LEVEL INDICATION CHANGE.
76-38	03/26/1976	LIQUID LEVEL IN TANK 108-TX DECREASED 1 INCH.	ASSUMED SALT BUILDUP ON FIC PLUMMET.
76-39	03/22/1976	LIQUID LEVEL IN TANK 108-SX INCREASED, EXCEEDING THE .50 INCH CRITERIA.	UNKNOWN. TANK IS OUT-OF-SERVICE, A KNOWN LEAKER.
76-40	03/23/1976	LIQUID LEVEL IN TANK 105-SX INCREASED 2.1 INCHES.	ASSUMED SLURRY GROWTH, TYPICAL OF 242-S SLURRIES.
76-41	02/29/1976	RADIATION INCREASE IN 102-AX LEAK DETECTION PIT.	WATER IN LEAK DETECTION PIT EVAPORATED, RADIATION INDICATION INCREASED AS PIT BOTTOM WAS EXPOSED.
76-42	03/23/1976	LIQUID LEVEL IN TANK 111-C INCREASED, EXCEEDING .50 INCH CRITERIA.	UNKNOWN, ASSUME ERRATIC LEVEL READINGS DUE TO PROBLEM WITH OBTAINING GOOD CONTACT WITH SURFACE.
76-45	03/31/1976	LIQUID LEVEL IN TANK 110-S INCREASED 2.3 INCHES.	ASSUMED SLURRY GROWTH, TYPICAL OF 242-S SLURRIES.
76-46	03/29/1976	103-AX PUMP RUN WITHOUT FLOW TO BEARINGS DUE TO MISVALVING OF COOLING WATER TO 101-AX PUMP.	PERSONNEL ERROR, FAILURE TO FOLLOW VALVING PROCEDURE.
76-47	04/07/1976	TANK 115-TX REUSED AS A SALT WELL LIQUOR RECEIVER AFTER BEING DECLARED REMOVED-FROM-SERVICE.	PERSONNEL ERROR. FAILURE TO FOLLOW TANK IN-SERVICE ADMINISTRATIVE CONTROLS.
76-48	04/12/1976	DURING JUMPER INSTALLATION IN 241-A TANK FARM, RADIATION MONITOR RECOMMENDED WORK HALT DUE TO WIND, OPERATIONS SUPERVISOR DIRECTED THAT ONE MORE CONNECTOR HEAD BE INSTALLED TO FINISH THE JOB.	PERSONNEL, POLICY CONFLICT OF ASSIGNED AUTHORITY.
76-49	04/14/1976	LIQUID LEVEL IN TANK 105-TY INCREASED 32 INCHES.	LEVEL INDICATION INCREASE DUE TO REPLACING THE ROD PLUMMET WITH A DOUGHNUT PLUMMET.
76-50	04/19/1976	LIQUID LEVEL IN TANK 114-TX INCREASED 2.25 INCHES.	ASSUME LEVEL CHANGE DUE TO DRAINBACK OF LIQUID ON SALTCAKE AT HIGHER ELEVATIONS.
76-51	04/14/1976	LIQUID LEVEL IN TANK 113-SX INCREASED 1.5 INCHES.	SUSPECT THE LEVEL PLUMMET IS CONTACTING AN OLD LEVEL TAPE.
76-52	03/24/1976	LIQUID LEVEL IN TANK 105-S INCREASE EXCEEDED CRITERIA.	ASSUME SLURRY GROWTH, TYPICAL OF 242-S SLURRIES.
76-53	04/14/1976	LIQUID LEVEL IN TANK 102-TX INCREASED 2 INCHES.	ASSUME MATERIAL GROWTH ON TAPE PLUMMET.
76-55	04/08/1976	TRANSFER TO 244-AR MADE OF MATERIAL WITH HIGH H+ CONCENTRATION.	PERSONNEL ERROR. MISINTERPRETATION OF SPECIFICATION, FAILURE TO FOLLOW PROCEDURE.
76-56	04/09/1976	RADIATION ACTIVITY INCREASE IN TANK 106-T DRY WELL EXCEEDS CRITERIA.	MIGRATION OF CONTAMINATION FROM PREVIOUS TANK LEAK.
76-59	04/20/1976	RADIATION ACTIVITY INCREASE IN TANK 104-AX DRY WELL EXCEEDS CRITERIA.	MIGRATION OF CONTAMINATION FROM PREVIOUS EXHAUST HEADER LEAK.
76-60	04/20/1976	INCREASED ACTIVITY IN TANK 107-T DRY WELL.	ASSUME DISPERSION MECHANISM IN SOIL OF PREVIOUS CONTAMINATION.
76-61	04/25/1976	SPILLED 500 GALLONS OF WATER WHEN OVERGROUND LINE FROM 104-TX TO 108-TX PUMP PIT CONNECTION FAILED.	MECHANICAL. HOSE CONNECTION FAILED.
76-62	04/26/1976	LIQUID LEVEL IN TANK 105-U INCREASED 2.4 INCHES.	ASSUME SLURRY GROWTH, TYPICAL OF 242-S SLURRIES.
76-64	04/29/1976	CONTAMINATION RELEASE WHEN A PILOT HOLE WAS DRILLED IN A FLUSHED OUT TRANSFER PIPE, BEING READIED FOR REROUTING.	TRAPPED AIR IN THE HEAT TRACED LINE PUSHED OUT LIQUID WHEN THE HOLE WAS DRILLED IN THE PIPE.

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76-66	05/05/1976	LIQUID LEVEL IN TANK 106-TX INCREASED GREATER THAN CRITERIA.	LEVEL TAPE WAS FLUSHED AND A CRUSTED ICICLE WAS REMOVED, LEVEL WAS THEN NORMAL.
76-67	05/05/1976	LIQUID LEVEL IN TANK 109-U INCREASED GREATER THAN CRITERIA.	ASSUME THAT SLUDGE IS FORMING ON TANK LIQUID SERVICE.
76-68	04/20/1976	RADIATION ACTIVITY INCREASE IN TANK 101-BX DRY WELL EXCEEDED CRITERIA.	MIGRATION OF CONTAMINATION FROM PREVIOUS LEAK FROM PUMP CASING.
76-69	03/30/1976	CHANGE IN SURFACE LEVEL READING IN TANK 117-TX EXCEEDS CRITERIA.	CHANGING AREA OF MEASUREMENT. LEVEL PLUMMET HAD BEEN STRIKING MOUND OF DIATOMACEOUS EARTH IN THE CENTER OF THE TANK, NEW READINGS WERE TAKEN IN A DIFFERENT LOCATION.
76-70	05/10/1976	LIQUID LEVEL IN TANK 101-S DECREASE EXCEEDED CRITERIA.	ASSUME THE SURFACE LEVEL IS TOO DRY TO GET AN ACCURATE READING, FLUSHES OF TAPE PLUMMET HAVE WASHED OUT A DEPRESSION IN WASTE SURFACE.
76-71	05/10/1976	LIQUID LEVEL IN TANK 203-T INCREASED 1.25 INCHES.	ASSUME THAT THE INCREASE WAS A TEMPORARY PHENOMENON WHICH FOLLOWED A SALT WELL TRANSFER.
76-72	05/07/1976	PERSONNEL ENTERED BX TANK FARM WITHOUT USING PROTECTIVE CLOTHING.	PERSONNEL ERROR. FAILURE TO FOLLOW TANK FARM ENTRANCE PROCEDURE.
76-73	05/05/1976	MONITORING OF 101-A DRY WELL NOT PERFORMED ON SCHEDULE.	PERSONNEL ERROR. A DRILLING RIG WAS IN THE WAY SO THAT THE SURVEILLANCE COULD NOT BE MADE.
76-74	05/17/1976	RADIATION ACTIVITY INCREASE IN TANK 110-U DRY WELL.	ASSUME MIGRATION OF PREVIOUS SOIL CONTAMINATION.
76-76	05/22/1976	LIQUID LEVEL IN TANK 204-T INCREASED 1.25 INCHES.	INCREASE FOLLOWED A SALT WELL TRANSFER, ASSUME A DRAIN DOWN FROM OUTLYING WASTE SURFACES.
76-77	05/24/1976	LIQUID LEVEL IN TANK 106-U INCREASED 1.10 INCHES.	ASSUME A BUILDUP OF CRUST OVER TIME.
76-80	05/27/1976	LIQUID LEVEL IN TANK 108-U INCREASED 1.05 INCHES.	ASSUME INCREASE IS DUE TO DRAINAGE FROM EXHAUST SYSTEMS CONDENSATE.
76-81	05/28/1976	LIQUID LEVEL IN TANK 107-S DECREASED 0.5 INCHES.	DECREASE IN LEVEL IS APPARENTLY DUE TO EVAPORATIVE LOSS AND DROP IN TEMPERATURE OF THE LIQUID WASTE.
76-83	06/02/1976	LIQUID LEVEL IN TANK 103-SX INCREASED 2.10 INCHES.	ASSUME LEVEL INCREASE IS TYPICAL OF 242-S SLURRY SALT CAKE BEHAVIOR.
76-85	06/08/1976	LIQUID LEVEL IN TANK 104-SX INCREASED 2.10 INCHES.	ASSUME LEVEL INCREASE IS TYPICAL OF 242-S SLURRY SALT CAKE BEHAVIOR.
76-87	06/13/1976	LIQUID LEVEL IN TANK 111-TX INCREASED 1.25 INCHES.	LEVEL INCREASE DUE TO IN-LEAKAGE FROM A STEAM LEAK INTO A FLUSH PIT.
76-89	06/21/1976	LIQUID LEVEL IN TANK 105-U DECREASE EXCEEDED CRITERIA.	ASSUME LEVEL DECREASE IS DUE TO A BREAKDOWN OR PENETRATION OF FLOATING MATERIAL ON TANK WASTE SURFACE.
76-90	06/28/1976	SURFACE LEVEL IN TANK 110-U INCREASED 1.0 INCH.	ASSUME A SURFACE ANOMALY OR TEMPORARY MATERIAL BUILDUP ON THE GAUGE PLUMMET.
76-91	06/29/1976	LIQUID LEVEL IN TANK 110-SX DECREASED 0.75 INCHES.	ASSUME DECREASE DUE TO EVAPORATION AND ERRATIC READINGS USING MANUAL TAPE.
76-94	07/20/1976	LIQUID LEVEL IN TANK 108-C DECREASED 0.50 INCHES.	ASSUME SURFACE LEVEL SETTLING FOLLOWING SALT WELL PUMPING.
76-95	07/23/1976	LIQUID LEVEL IN TANK 101-S DECREASED 1.10 INCHES.	ASSUME DECREASE DUE TO EVAPORATION AND ERRATIC READINGS DUE TO SURFACE CONDITION.
76-96	07/28/1976	LIQUID LEVEL IN TANK 103-SX DECREASED 1.6 INCHES.	ASSUME DECREASE IS DUE TO LIQUEFACTION OF THE CRUST AFTER A 60,000 GALLON TRANSFER FROM 110-SX.
76-97	07/08/1976	LIQUID LEVEL IN TANK 106-TX INCREASED 1.25 INCHES.	ASSUME INCREASE IS DUE TO BUILDUP ON THE GAUGE PLUMMET.
76-98	07/08/1976	LIQUID LEVEL IN TANK 102-S INCREASED 1.20 INCHES.	ASSUME INCREASE IS DUE TO SLUDGE FORMATION TYPICAL OF 242-S FEED.

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76-99	07/08/1976	LIQUID LEVEL IN TANK 115-TX INCREASED 1.25 INCHES.	UNKNOWN.
76-100	07/13/1976	RADIATION ACTIVITY INCREASE IN TANK 104-A LATERALS.	ASSUME MIGRATION OF PREVIOUSLY LEAKED WASTE.
76-101	07/16/1976	LIQUID LEVEL IN TANK 114-TX INCREASE EXCEEDED CRITERIA.	INCREASE DUE TO GAUGE CONTINUITY REPAIR.
76-102	07/20/1976	LIQUID LEVEL IN TANK 109-TX DECREASED, POSSIBLY EXCEEDING CRITERIA.	DECREASE IS DUE TO EVAPORATION AND TEMPERATURE DROP OF LIQUID WASTE.
76-103	07/20/1976	LIQUID LEVEL IN TANK 104-TX DECREASED 0.55 INCHES.	ASSUME LEVEL DECREASE IS DUE TO WASTE TEMPERATURE DROP.
76-109	07/28/1976	SURFACE LEVEL IN TANK 102-BX EXCEEDED LEVEL LIMIT.	LEVEL READINGS ARE ERRATIC DUE TO SURFACE IRREGULARITIES.
76-115	08/24/1976	PERSONNEL AND EQUIPMENT CONTAMINATION DURING PUMP REMOVAL FROM TANK 103-A.	PERSONNEL AND PROCEDURE ERRORS. PUMP BASE NOT SUPPORTED SO IT MOVED DURING TRANSFER, CONTAMINATION WAS DISLODGED.
76-118	08/31/1976	CROSS-COUNTRY TRANSFER LINE V361 ENCASEMENT SWAB RISERS HAD ACTIVITY INCREASE.	POSSIBLE MIGRATION OF PREVIOUS CONTAMINATION.
76-119	08/31/1976	RADIATION ACTIVITY IN TANK 107-SX DRY WELL INCREASED.	ASSUME INCREASED ACTIVITY DUE TO MIGRATION OF SOIL CONTAMINATION.
76-124	09/14/1976	MAXIMUM LEVEL LIMIT IN TANK 105-A EXCEEDED.	PERSONNEL, PROCEDURE ERRORS. ADDED TOO MUCH WATER TO TANK DURING SPRINKLING OPERATION.
76-125	09/21/1976	SURFACE LEVEL IN TANK 104-SX INCREASED 3.05 INCHES.	ASSUME INCREASE DUE TO FLOTATION AND GROWTH OF SALT CRUST FOLLOWING SLURRY RECEPTION.
76-126	09/21/1976	LIQUID LEVEL IN TANK 106-S INCREASED 3.0 INCHES.	SUSPECTED TRANSFER LINE VALVE IN-LEAKAGE IN SA VALVE PIT.
76-128	09/25/1976	APPARENT MAXIMUM LEVEL LIMIT EXCEEDED IN 002-AR SUMP.	LEVEL READINGS CHANGED WHEN THE ZIPCORD LEVEL GAUGE WAS REPLACED WITH A MANUAL TAPE REEL.
76-129	09/25/1976	APPARENT MAXIMUM LEVEL LIMIT EXCEEDED IN 003-UR SUMP.	LEVEL READINGS CHANGED WHEN THE ZIPCORD LEVEL GAUGE WAS REPLACED WITH A MANUAL TAPE REEL.
76-131	09/27/1976	RADIOACTIVE WASTE SPILL DURING JUMPER DISCONNECTION IN 105-U PUMP PIT.	MECHANICAL FAILURE. WASTE TRANSFER ONGOING IN ADJACENT TANK PRESSURIZED JUMPER DUE TO PARTIAL FAILURE OF A CLOSED VALVE.
76-132	09/21/1976	RADIATION INCREASE IN TANK 101-AY ANNULUS EXHAUST AIR.	ASSUME PROCESS CONDENSATE PASSING THROUGH CROSS-TIE BETWEEN ANNULUS VENT SYSTEM AND THE VESSEL VENT SYSTEM.
76-136	10/05/1976	RADIOACTIVE LIQUID SPRAYED FROM A CHECK VALVE UNDER REPAIR ONTO THREE PERSONNEL IN BX TANK FARM.	PERSONNEL ERROR. PREPARATIONS FOR THE REPAIR WERE INADEQUATE.
76-137	10/06/1976	LIQUID LEVEL IN TANK 108-TX DECREASE EXCEEDED CRITERIA.	ASSUME MANUAL TAPE PLUMMET IS CONTACTING A MOUND OF SALT IN THE TANK RESULTING IN ERRONEOUS READINGS.
76-138	10/04/1976	LIQUID LEVEL IN TANK 102-AY DECREASED 2.5 INCHES.	DECREASE IN TANK VOLUME DUE TO SHUTTING OFF STEAM TO HEATING COIL AND HIGH TEMPERATURES CAUSING EVAPORATION.
76-139	10/07/1976	INCREASED ACTIVITY IN CROSS-COUNTRY TRANSFER LINE V361 SWAB RISERS.	ASSUME CONTAMINATION IS FROM PREVIOUS LEAKS.
76-142	10/16/1976	LIQUID LEVEL IN TANK 108-BY INCREASED 3.5 INCHES.	ASSUME SURFACE SHIFT FROM SALT WELL PUMPING. ALSO, TAPE PLUMMET IS NESTLED IN A SWIRL OF OLD TAPE.
76-143	10/04/1976	APPARENT LEAK DETECTION PIT LEVEL INCREASES FOR TANK 102-AZ.	INSTRUMENT AIR VALVED OFF SOME INSTRUMENTS AND FAULTY TRANSMITTER. TANK NOT IN SERVICE AT TIME OF ANOMALIES.
76-146	10/25/1976	SURFACE LEVEL INDICATION IN TANK 108-SX INCREASED WHEN NEW MANUAL TAPE INSTALLED.	NEW TAPE NOT CALIBRATED CORRECTLY ACCORDING TO SYSTEM REFERENCE DRAWING.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
76-148	10/28/1976	LIQUID LEVEL IN TANK 102-AY BELOW MINIMUM LIMIT.	PROCEDURE. TANK PUMPED DOWN TO MINIMUM, THEN MAINTENANCE ON LEVEL TAPE OCCURRED, RESULTING IN LEVEL INDICATION BELOW MINIMUM LIMIT.
76-153	11/04/1976	LIQUID LEVEL IN TANK 105-C DECREASE EXCEEDED CRITERIA.	ASSUME LEVEL DECREASE DUE TO EVAPORATION.
76-155	11/08/1976	LIQUID LEVEL IN TANK 113-SX INCREASE EXCEEDED CRITERIA.	ASSUME LEVEL GAUGE PLUMMET MANIPULATION EFFECTS LEVEL INDICATION.
76-156	11/12/1976	LIQUID LEVEL IN TANK 115-TX INCREASED 3.0 INCHES.	ASSUME LIQUID DRAINING FROM SURROUNDING AREA OR SALT HAS SLUMPED INTO POOL AFTER TANK PUMPOUT.
76-163	12/03/1976	RADIATION ACTIVITY IN TANK 107-SX DRY WELL INCREASED.	ASSUME PREVIOUS LEAK CONTAMINATION IS MIGRATING.
76-164	12/03/1976	RADIATION ACTIVITY IN TANK 114-TX DRY WELL INCREASED.	ASSUME ACTIVITY IS DUE TO MIGRATION OF SOIL CONTAMINATION.
76-165	12/03/1976	WATER USED FOR 102-AX PUMP PIT WASH DOWN VAPORIZED AND CONTAMINATED THE GROUND AND VEHICLES NEAR THE PIT.	PERSONNEL ERROR. PERSONNEL DID NOT ANTICIPATE THE WATER FLASHING TO STEAM DUE TO COLD AMBIENT TEMPERATURE (22oF) AND LOW HUMIDITY.
76-172	12/15/1976	LIQUID LEVEL IN TANK 105-SX INCREASED 3.0 INCHES.	ASSUME SLURRY GROWTH TYPICAL OF 242-S EVAPORATOR SLURRIES.
76-174	12/21/1976	LIQUID LEVEL IN TANK 106-U DECREASED 0.5 INCHES.	UNKNOWN. ASSUME TANK IS SOUND.
76-175	12/28/1976	RADIATION ACTIVITY IN TANK 105-T DRY WELL INCREASED.	ASSUME LATERAL MIGRATION OF SOIL CONTAMINATION.
76-176	12/28/1976	RADIATION ACTIVITY IN TANK 101-T DRY WELL INCREASED.	ASSUME FURTHER MIGRATION OF PREVIOUS SOIL CONTAMINATION.
77-01	01/03/1977	LIQUID LEVEL IN 001-TXR SUMP DECREASED 2.0 INCHES.	ASSUME RAINWATER DRAINAGE OR ZIPCORD LOCATION WAS THE CAUSE OF LEVEL INDICATION CHANGE.
77-05	01/10/1977	LIQUID LEVEL IN TANK 104-TX DECREASED .60 INCHES.	ASSUME LEVEL DECREASE ATTRIBUTABLE TO TEMPERATURE DROP.
77-06	01/14/1977	RADIOACTIVE ACTIVITY IN TANK 114-TX DRY WELL INCREASED.	ASSUME MIGRATION OF SOIL CONTAMINATION.
77-07	01/13/1977	LIQUID LEVEL IN TANK 102-SX INCREASED 3.0 INCHES.	ASSUME LEVEL CHANGE TYPICAL OF SLURRIES FROM 242-S EVAPORATOR.
77-08	01/13/1977	LIQUID LEVEL IN TANK 103-SX INCREASED 3.0 INCHES.	ASSUME LEVEL CHANGE TYPICAL OF SLURRIES FROM 242-S EVAPORATOR.
77-11	01/17/1977	LIQUID LEVEL IN TANK 101-S DECREASED .70 INCHES.	ASSUME CRUST MOVEMENT OR SURFACE DRYING COULD CAUSE LEVEL INDICATION CHANGES.
77-17	01/27/1977	SURFACE LEVEL IN TANK 104-SX INCREASED 3.01 INCHES.	ASSUME LEVEL INCREASE DUE TO FLOTATION AND GROWTH OF SALT CRUST.
77-18	01/27/1977	LIQUID LEVEL IN TANK 115-TX INCREASED 3.75 INCHES.	MECHANICAL FAILURE. BROKEN WATER VALVE IN FLUSH PIT DRAINING TO 115-TX.
77-19	01/31/1977	LIQUID LEVEL IN TANK 104-AX DECREASED 1.20 INCHES.	ASSUME LEVEL DECREASE DUE TO INCREASED EVAPORATION WITH INSTALLATION OF AN INLET AIR FILTER.
77-20	02/01/1977	LIQUID LEVEL IN TANK 107-TX DECREASED .40 INCHES.	ASSUME LEVEL DECREASE DUE TO REACTIVATING THE EXHAUSTER.
77-22	02/03/1977	TRANSFER PIPELINE EXPOSED AND STRUCK DURING EXCAVATION NEAR 244-AR VAULT.	PERSONNEL ERROR. PIPELINE LOCATION NOT NOTED ON EXCAVATION PERMIT.
77-23	02/07/1977	WATER LEAKAGE FROM 108-BX FLUSH PIT DRAINED TO TANK 108-BX.	MECHANICAL FAILURE. WATER VALVE BONNET BLEW OFF DURING FLUSH OF LINE BETWEEN 110-BY AND 105-BX.
77-25	02/08/1977	RADIATION ACTIVITY IN TANK 110-U DRY WELL INCREASED.	ASSUME MIGRATION OF SOIL CONTAMINATION.
77-29	02/22/1977	LIQUID LEVEL IN TANK 106-SX INCREASED 3 INCHES.	ASSUME LEVEL INCREASE TYPICAL OF WASTE SLURRIES RECEIVED FROM 242-S EVAPORATOR.
77-30	02/27/1977	LIQUID LEVEL IN TANK 111-U DECREASED .65 INCHES.	ASSUME LEVEL DECREASE DUE TO VOLUME CHANGES FROM TEMPERATURE DECREASE.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
77-31	02/28/1977	004-AR WEIGHT FACTOR REFERENCE LINE PLUGGED DURING TRANSFER, CAUSING OVERFILLING OF TANK AND AUTOMATIC SHUTDOWN OF VESSEL VENT SYSTEM.	MATERIAL. PLUGGED WEIGHT FACTOR REFERENCE LINE.
77-33	03/06/1977	LIQUID LEVEL IN TANK 103-SX INCREASED 3 INCHES.	ASSUME LEVEL INCREASE TYPICAL OF WASTE SLURRIES RECEIVED FROM 242-S EVAPORATOR.
77-34	03/02/1977	RADIATION ACTIVITY IN TANK 107-SX DRY WELL INCREASED.	ASSUME MIGRATION OF SOIL CONTAMINATION.
77-35	03/08/1977	LIQUID LEVEL IN TANK 202-C INCREASED >2.25 INCHES.	UNKNOWN. POSSIBLE RAW WATER IN-LEAKAGE CAUSE FOR LEVEL INCREASE.
77-36	03/10/1977	LIQUID LEVEL IN TANK 101-AX DECREASED >.50 INCHES.	ASSUME TANK INVENTORY OF WARM WASTE INCREASED EVAPORATIVE LOSS.
77-37	03/13/1977	LIQUID LEVEL IN TANK 102-SX INCREASED >3 INCHES.	ASSUME LEVEL INCREASE TYPICAL OF WASTE SLURRIES RECEIVED FROM 242-S EVAPORATOR.
77-43	03/25/1977	LIQUID LEVEL IN TANK 103-SX EXCEEDED MAXIMUM OPERATING LIMIT.	ASSUME LEVEL INCREASE DUE TO SALT CAKE GROWTH.
77-46	03/31/1977	LIQUID LEVEL IN 002-BXR-SUMP INCREASED >2 INCHES.	ASSUME LEVEL INCREASE DUE TO DRAINAGE OF RAINWATER.
77-52	04/12/1977	RADIOACTIVE CONDENSATE DRIPPING ONTO GROUND FROM 102-SY VENTILATION EXHAUST LINE.	MECHANICAL FAILURE. LEAKS DEVELOPED WITHIN THREE DAYS OF STARTING TO FILL NEW TANK.
77-53	04/15/1977	LIQUID LEVEL IN TANK 103-SX DECREASED >.5 INCHES.	ASSUME LATERAL MOVEMENT OF CRUST AFTER TRANSFER OUT OF TANK.
77-54	04/17/1977	RADIOACTIVE ACTIVITY ON 102-SY ANNULUS AIR SAMPLING FILTER FOLLOWING TRANSFER INTO TANK.	ASSUME RADIOACTIVE AEROSOL TRAVELED FROM TANK UP THROUGH PUMP PIT DRAIN AND INTO ANNULUS THROUGH ANNULUS PUMP PIT DUE TO NEGATIVE PRESSURE.
77-55	04/22/1977	LIQUID LEVEL IN TANK 107-TX INCREASED AND THEN DECREASED FOLLOWING CRANE WORK IN AREA.	UNKNOWN.
77-58	04/23/1977	LIQUID LEVEL IN 240-S-302 CATCH TANK DECREASED >2 INCHES.	ASSUME INCREASED EVAPORATION DUE TO NEGATIVE PRESSURE APPLIED TO TANK FROM THE REDOX PLANT.
77-59	04/24/1977	LIQUID LEVEL IN 002-UR TANK DECREASED 0.25 INCHES.	UNKNOWN.
77-60	04/26/1977	LIQUID LEVEL IN TANK 105-U DECREASED 1.35 INCHES.	ASSUME LEVEL INCREASE DUE TO SURFACE MATERIAL MOVEMENT OR SLOUGHING OFF OF MATERIAL COLLECTED ON FIC PLUMMET.
77-64	04/30/1977	MISROUTED WASTE TRANSFER INTO TANKS 101-SY, 103-SY, AND 103-SY LEAK DETECTION PIT, DURING TRANSFER FROM 111-U TO 102-SY.	PERSONNEL ERROR. TRANSFER MISROUTED.
77-65	04/29/1977	LIQUID LEVEL IN TANK TX-302-A CATCH TANK DECREASED >2 INCHES.	UNKNOWN.
77-66	05/04/1977	LIQUID LEVEL IN TANK 12-BX DECREASED >.5 INCHES.	FAILURE TO READJUST THE BASELINE FOLLOWING MAINTENANCE ON FIC PLUMMET.
77-68	05/10/1977	OVERFILLED TANK 103-S DURING TRANSFER FROM 242-S EVAPORATOR AND DIVERSION OF STEAM CONDENSATE.	PERSONNEL ERROR. STEAM CONDENSATE WAS INADVERTENTLY VALVE TO WASTE TANK INSTEAD OF CRIB.
77-69	05/10/1977	LIQUID LEVEL IN TANK 106-BY INCREASED 2 INCHES.	ASSUME FAILURE OF MANUAL LIQUID LEVEL MEASURING DEVICE.
77-70	05/11/1977	LIQUID LEVEL IN TANK 108-TX SHOWED DISCREPANCY OF 24 INCHES BETWEEN FIC AND THE MANUAL TAPE.	FIC TAPE WAS FABRICATED INCORRECTLY.
77-71	05/13/1977	LIQUID LEVEL IN TANK 102-SX DECREASED 2.95 INCHES AFTER TRANSFER FROM 103-S.	ASSUME MIXING SALT CAKE AND DILUTE WASTE IN TRANSFER CAUSED LEVEL DECREASE. NO CAUSE WAS CERTAIN.
77-73	05/20/1977	LIQUID LEVEL IN TANK 106-U DECREASED 1.7 INCHES.	UNKNOWN. TANK CONTENTS ORDERED TRANSFERRED.
77-74	05/23/1977	LIQUID LEVEL IN TANK 105-SX DECREASED >.5 INCHES.	ASSUME THE FIC INSTRUMENT IS NOT IN CONTACT WITH LIQUID, EXPECTED TO VARY.

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77-76	05/25/1977	LIQUID LEVEL IN TANK 110-BX DECREASED 1.25 INCHES.	ASSUME INACCURATE INSTRUMENT READING OF THE LIQUID LEVEL.
77-77	05/24/1977	LIQUID LEVEL IN TANK 107-BY INCREASED 2.25 INCHES.	ASSUME LEVEL INDICATION CHANGE DUE TO UNEVEN SURFACE OF WASTE.
77-78	05/25/1977	LIQUID LEVEL IN 151-AX DIVERTER STATION CATCH TANK EXCEEDED MAXIMUM LIMIT.	OVERFLOW TO CATCH TANK WAS ANTICIPATED, BUT EXCEEDED THE LEVEL LIMIT WAS NOT. PROCEDURE PROBLEM.
77-79	05/24/1977	OPERATIONS PERSONNEL CONTAMINATED WHILE INSERTING A NEW MANUAL TAPE IN TANK 106-SX.	PERSONNEL AND PROCEDURE ERROR. SHOULD HAVE WORN WATER PROOF GLOVES.
77-81	05/25/1977	LIQUID LEVEL IN TANK 103-B EXCEEDED REUSE CRITERION.	PERSONNEL AND PROCEDURE ERROR. EMPLOYEE FAILED TO USE REUSE PROCEDURE AND PROCEDURE HAD INADEQUATE APPROVAL FORM.
77-82	05/29/1977	LIQUID LEVEL IN TANK 106-SX INCREASED >3 INCHES.	ASSUME INCREASE DUE TO WASTE VOLUME EXPANSION, AND ACCUMULATION OF MATERIAL ON FIC LEVEL DEVICE.
77-84	05/31/1977	PERSONNEL CONTAMINATION WHILE REMOVING A SLUDGE WEIGHT FROM TANK 104-AX RISER.	PERSONNEL ERROR. IMPROPER REMOVAL OF PROTECTIVE CLOTHING.
77-87	06/06/1977	LIQUID LEVEL IN 002-TXR SUMP EXCEEDED LIMIT.	INCREASE DUE TO RAINWATER SEEPING INTO SUMP.
77-91	06/10/1977	RAW WATER LINE BREAK NEAR TANKS 112-SX AND 115-SX CAUSING 100 SQUARE FOOT PUDDLE.	MECHANICAL FAILURE. RAW WATER LINE BREAK.
77-92	06/09/1977	LIQUID LEVEL IN TANK 101-SY INCREASED 2.95 INCHES.	ASSUME WASTE EXPANSION IN TANK. RECEIVER OF 242-S EVAPORATOR CRYSTALLIZER.
77-93	06/11/1977	LIQUID LEVEL IN TANK 103-BX DECREASED .6 INCHES.	ASSUME REDISTRIBUTION OF SLUDGE FOLLOWING TRANSFER OF 46 INCHES.
77-100	06/21/1977	LIQUID LEVEL IN 011-BXR TANK DECREASED 1.25 INCHES.	UNKNOWN.
77-101	06/21/1977	LIQUID LEVEL 002-BXR SUMP INCREASED 2.25 INCHES.	ASSUME LEVEL INCREASE MAY BE DUE TO RAINWATER DRAINAGE.
77-103	12/07/1977	MANY INSTANCES OF RADIATION ACTIVITY IN TANK 103-TX DRY WELLS.	ASSUME MANY CAUSES OF INCREASED ACTIVITY: TANK LEAK, TANK OVERFILL, TRANSFER LINE LEAKAGE, MIGRATION OF SOIL CONTAMINATION, OR CONTAMINATION CARRIED BY MATERIAL CHANNELING.
77-105	06/29/1977	TANK 111-U OVERFILLED DURING A TRANSFER FROM 107-TX AND 102-U.	PERSONNEL ERROR. FAILURE TO NOTE LEVEL LIMIT, AND FAILURE TO RESPOND TO HIGH LEVEL ALARM.
77-107	06/30/1977	LIQUID LEVEL IN TANK 102-TX DECREASED 7 INCHES.	HOT WATER FLUSH OF LEVEL TAPE AND PLUMMET CAUSED LEVEL INDICATION CHANGE.
77-108	06/30/1977	LIQUID LEVEL IN TANK 106-A DECREASED 1 INCH.	ASSUME INCREASED EVAPORATION CAUSED LEVEL DECREASE.
77-109	07/05/1977	LIQUID LEVEL IN TANK 105-TX DECREASED 2.5 INCHES.	UNKNOWN.
77-114	05/06/1977	LIQUID LEVEL IN TANK 109-B DECREASED 3.5 INCHES.	ASSUME LEVEL INDICATION CHANGE CAUSED BY EROSION OF SALT CRUST UNDER THE PLUMMET CAUSED BY A FLUSH.
77-115	07/06/1977	LIQUID LEVEL IN TANK 107-TX DECREASED .5 INCHES.	LEVEL CHANGE CAUSED BY OPERATION OF A SUBMERSIBLE PUMP.
77-116	07/09/1977	LIQUID LEVEL IN TANK 102-TY DECREASED .8 INCHES.	ASSUMED SLUMPING OF SLUDGE FOLLOWING TANK PUMPING CAUSED THE LEVEL CHANGE.
77-117	07/07/1977	PIPEFITTERS WERE WORKING IN A FLUSH PIT THAT HAD A BACK UP OF PROCESS SOLUTION IN THE FLUSH LINE.	PERSONNEL ERROR. HPT THOUGHT THE WORK WOULD BE DONE IN A CLEAN PIT.
77-118	07/13/1977	TANK 101-S OVERFILLED TO STANDARD LIMIT, WHICH IS 3 INCHES ABOVE THE OPERATING LIMIT.	PERSONNEL ERROR. PERSONNEL FAILED TO REALIZE THAT LEVEL WAS CLOSE TO THE LIMIT.
77-120	07/15/1977	LIQUID LEVEL IN TANK 108-U INCREASED 3.2 INCHES.	FAILURE TO RESET BASELINE AFTER FLUSH TRANSFERRED TO TANK, AND APPARENT TYPICAL GROWTH OF SLURRY FROM 242-S EVAPORATOR.

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77-122	07/19/1977	RADIOACTIVE MATERIAL ON AIR SAMPLE FILTERS FROM TANKS 101-AZ AND 102-AZ.	APPARENT COLLECTION OF NATURALLY OCCURRING RADIONUCLIDES FROM A THORIUM SERIES.
77-125	07/21/1977	LIQUID LEVEL IN TANK 101-A DECREASED .7 INCHES.	APPARENT HIGHER RATE OF EVAPORATION DUE TO INCREASED TEMPERATURE FROM SLURRY ADDITION.
77-132	08/03/1977	OPERATION OF 002-BXR PUMP IN STRONG ACID SOLUTION.	PERSONNEL ERROR. ACID WAS TO HAVE BEEN NEUTRALIZED BEFORE PLACING PUMP IN SOLUTION.
77-133	08/03/1977	LIQUID LEVEL IN TANK 105-SX INCREASED 3.2 INCHES.	ASSUME LEVEL INCREASE DUE TO TYPICAL GROWTH OF 242-S SLURRIES.
77-136	08/06/1977	LIQUID LEVEL IN TANK 103-SX INCREASED 3.1 INCHES.	ASSUME LEVEL INCREASE DUE TO TYPICAL GROWTH OF 242-S SLURRIES.
77-137	08/08/1977	2200 GALLONS MISROUTED TO TANK 109-TX DURING 102-TY TO 105-TX TRANSFER.	VALVE IN 109-TX PIT COULD NOT BE COMPLETELY CLOSED DUE TO INTERFERENCE FROM JUMPER.
77-138	08/13/1977	LIQUID LEVEL IN TANK 114-TX INCREASED 2.25 INCHES.	ASSUME LIQUID IS SEEPING INTO DEPRESSION LEFT BY SALT WELL PUMPING.
77-139	08/13/1977	LIQUID LEVEL IN TANK 101-AX DECREASED 1 INCH.	UNKNOWN.
77-140	08/14/1977	LIQUID LEVEL IN TANK 109-U INCREASED 3.1 INCHES.	ASSUME LEVEL INCREASE DUE TO TYPICAL GROWTH OF 242-S SLURRIES.
77-141	08/15/1977	LIQUID LEVEL IN TANK 103-A DECREASED .9 INCHES.	ASSUME DISSOLUTION OF A FOAM WHICH HAD BEEN OBSERVED DURING LAST SLURRY TRANSFER.
77-144	08/18/1977	RADIATION ACTIVITY IN TANKS 110-TX AND 114-TX DRY WELL.	ASSUME MIGRATION OF SOIL CONTAMINATION.
77-146	08/24/1977	241-SY EXHAUSTER MOISTURE SEPARATOR LEAKED EXTERNALLY, SPREADING CONTAMINATION ONTO CONCRETE PAD.	MECHANICAL FAILURE. APPARENT WELD LEAKS.
77-147	08/24/1977	LIQUID LEVEL IN TANK 101-S DECREASED .7 INCHES.	LEVEL CHANGE IS APPARENT TRANSIENT PHENOMENA ASSOCIATED WITH 242-S EVAPORATOR TRANSFER.
77-148	08/25/1977	LIQUID LEVEL IN TANK 101-TY INCREASED 4.1 INCHES.	ASSUME LEVEL INDICATION CHANGE IS DUE TO LEVEL DEVICE MOVING OVER A DISCARDED FIC TAPE.
77-150	08/30/1977	LIQUID LEVEL IN TANK 105-TX DECREASED 6.75 INCHES.	APPARENT CAUSE OF LEVEL INDICATION CHANGE IS LATERAL MOVEMENT OF THE FIC PLUMMET OVER RAPIDLY CHANGING TERRAIN.
77-151	09/02/1977	LIQUID LEVEL IN TANK 101-B INCREASED 1.15 INCHES.	ASSUME LEVEL INDICATION CHANGE CAUSED BY A RAINWATER ACCUMULATION UNDER LEVEL MEASUREMENT TAPE.
77-152	09/04/1977	LIQUID LEVEL IN TANK 111-S INCREASED 3.1 INCHES.	LEVEL INCREASE CHANGE CAUSED BY REDISTRIBUTION OF LIQUID PRESENT IN THE SALT CAKE AND SLUDGE.
77-155	09/08/1977	EXCEEDED MAXIMUM LEVEL LIMIT IN 002-TXR TANK BY 4.25 INCHES.	PERSONNEL ERROR. TANK OVERFILLED WHEN FLUSHING LINE FROM 155-TX DIVERSION BOX TO 002-TXR TANK.
77-156	09/12/1977	LIQUID LEVEL IN TANK 105-U INCREASED 3.1 INCHES.	ASSUME LEVEL CHANGE DUE TO EXPANSION OF SLURRY MATERIAL IN TANK.
77-158	09/12/1977	EXCEEDED MAXIMUM LEVEL LIMIT IN 002-TXR SUMP.	FLUSH OF LINE BETWEEN TANKS 103-TX AND 102-SY OCCURRED, THE LINE BROKE IN 151-TXR DIVERSION BOX WHICH OVERFILLED THE SUMP.
77-160	09/14/1977	LIQUID LEVEL IN TANK 114-TX EXCEEDED MAXIMUM OPERATING LIMIT.	APPARENT CAUSE OF LEVEL INCREASE IS DUE TO WATER ENTERING THE TANK FROM PRESSURE TESTING A LINE INTO THE TANK.
77-161	09/15/1977	LIQUID LEVEL IN TANK 106-BY INCREASED 1.25 INCHES.	APPARENT CAUSE OF LEVEL INCREASE IS SHIFTING OF THE UNEVEN SALT CRUST.
77-163	09/19/1977	LIQUID LEVEL IN TANK 102-BY INCREASED 1.25 INCHES.	APPARENT CAUSE OF LEVEL INCREASE IS REDISTRIBUTION OF LIQUID AFTER A SALT WELL TRANSFER.
77-168	09/23/1977	LIQUID LEVEL IN TANK 111-U INCREASED 2.1 INCHES.	APPARENT CAUSE OF LEVEL INCREASE ID DRAINAGE FROM U-C AND U-D VALVE PITS AND FLUSH PITS.

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77-169	09/23/1977	LIQUID LEVEL IN TANK 115-TX DECREASED 2.25 INCHES.	ASSUME LEVEL CHANGE IS DUE TO SETTLING OF SLUDGE FOLLOWING SALT WELL PUMPING.
77-171	09/29/1977	PUREX SUMP WASTE JETTED TO TANK 104-C INSTEAD OF TANK 102-A.	PERSONNEL AND PROCEDURE ERRORS. PROCEDURE CHANGES HAD NOT BEEN COMPLETED.
77-172	09/29/1977	LIQUID LEVEL IN TANK 201-C INCREASED 2.25 INCHES.	ASSUME LEVEL INCREASE DUE TO NATURALLY OCCURRING PRECIPITATION.
77-174	10/03/1977	LIQUID LEVEL IN TANK 102-U INCREASED 2.05 INCHES.	ASSUME LEVEL INCREASE DUE TO EXPANSION OF SLURRY IN TANK.
77-175	10/04/1977	LIQUID LEVEL IN TANK 101-SY INCREASED 2.05 INCHES.	ASSUME LEVEL INCREASE DUE TO EXPANSION OF SLURRY IN TANK.
77-177	10/10/1977	LIQUID LEVEL IN TANK 202-B DECREASED 1 INCH.	ASSUME LEVEL DECREASE DUE TO SLUDGE SETTLING FOLLOWING PUMPING OF THE TANK.
77-178	10/11/1977	LIQUID LEVEL IN TANK 111-BY DECREASED 1 INCH.	ASSUME LEVEL CHANGE DUE TO TAPE PLUMMET TOUCHING UNEVEN SURFACE CRUST.
77-182	10/12/1977	LIQUID LEVEL IN TANK 105-TX DECREASED 36.75 INCHES.	LEVEL CHANGE DUE TO MOVEMENT OF LEVEL TAPE PLUMMET INTO A HOLE IN THE TANK SURFACE LEFT AFTER SALT WELL PUMPING.
77-184	10/15/1977	LIQUID LEVEL IN TANK 105-SX INCREASED 4.2 INCHES.	ASSUME LEVEL INCREASE DUE TO EXPANSION OF THE SLURRY IN THE TANK.
77-186	10/18/1977	LIQUID LEVEL IN TANK 108-T INCREASED .75 INCHES.	ASSUME LEVEL INCREASE IS DUE TO ACCUMULATION OF MATERIAL ON THE TAPE PLUMMET.
77-188	10/20/1977	LIQUID LEVEL IN TANK 104-SX INCREASED 3.55 INCHES.	ASSUME LEVEL INCREASE IS DUE TO EXPANSION OF THE SLURRY IN THE TANK.
77-189	10/19/1977	RADIOACTIVE ACTIVITY ON 102-SY ANNULUS AIR FILTER.	MECHANICAL FAILURE. FAILURE OF BLANK BETWEEN TANK PUMP PIT AND LEAK DETECTION PIT. FLOW IS THEN THROUGH AN UNDERGROUND LINE.
77-190	10/23/1977	LIQUID LEVEL IN TANK 106-SX INCREASED 3.1 INCHES.	ASSUME LEVEL INCREASE DUE TO RECEIPT OF CONDENSATE FROM OTHER SX TANKS.
77-191	11/02/1977	LIQUID LEVEL IN TANK 102-S INCREASED 7 INCHES.	ASSUME CAUSE OF LEVEL INCREASE IS DUE TO DRAINAGE FROM SA AND SB VALVE PITS.
77-193	11/05/1977	LIQUID LEVEL IN TANK 105-U DECREASED .55 INCHES.	ASSUME DECREASE DUE TO SETTLING OF TANK MATERIAL FOLLOWING TRANSFER.
77-194	11/06/1977	LIQUID LEVEL IN TANK 109-U INCREASED 3.05 INCHES.	ASSUME LEVEL INCREASE DUE TO GROWTH OF CRUST ON TANK SURFACE.
77-196	11/08/1977	RADIATION ACTIVITY IN TANK 105-T DRY WELL INCREASED.	ASSUME ACTIVITY DUE TO REDISTRIBUTION OF TANK 106-T LEAK PLUME.
77-199	11/12/1977	LIQUID LEVEL IN TANK 104-TX DECREASED .9 INCHES.	ASSUME LEVEL DECREASE IS DUE TO MOVEMENT OF A PATCH OF CRUST FROM THE VICINITY OF THE TAPE PLUMMET.
77-200	11/15/1977	DURING PRESSURE TEST OF 001-AR TANK UPPER COIL, CONTAMINATION RELEASED IN A VALVE PIT AND THE PIT THAT RECEIVES ALL COOLING WATER FROM THE AR VAULT.	PROCEDURE ERROR. PROCEDURE INCORRECT TO PREVENT SPREAD OF CONTAMINATION, AND LACK OF WARNINGS IN PROCEDURE FOR PERSONNEL.
77-201	11/18/1977	LIQUID LEVEL IN TANK 112-T DECREASED 1 INCH.	ASSUME LEVEL DECREASE IS DUE TO LEVEL TAPE PLUMMET MOVEMENT OVER AN IRREGULAR SURFACE.
77-202	11/22/1977	RADIATION ACTIVITY IN TANK 104-AX DRY WELL INCREASED.	SEVERAL CAUSES ARE CONSIDERED FOR THIS EVENT. CONTAMINATION FROM PREVIOUS COUPLING LEAK, FROM EXHAUST SYSTEM, FROM NEARBY PROCESS PIPING, OR FROM TANK LEAK.
77-205	12/06/1977	SPRAY LEAK FROM 111-S PUMP PIT DURING LEAK CHECK OF SALT WELL PUMP AND JUMPER.	PROCEDURE ERROR AND MECHANICAL FAILURE. LEAK CHECK SHOULD BE DONE WITH COVER BLOCKS INSTALLED, AND FAILED GASKET AT PUMP INLET FLANGE.
77-206	12/08/1977	LIQUID LEVEL IN TANK 101-S INCREASED 2.35 INCHES.	ASSUME CRYSTAL GROWTH IN THE SLURRY IN THE TANK.

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77-207	12/08/1977	LIQUID LEVEL IN TANK 101-SY INCREASED 2.9 INCHES.	ASSUME CRYSTAL GROWTH IN THE SLURRY IN THE TANK.
77-208	12/10/1977	LIQUID LEVEL IN TANK 106-TX DECREASED 2.25 INCHES.	ASSUME LEVEL INDICATION DECREASE DUE TO DEPRESSION IN SURFACE CRUST CAUSED BY MANUAL TAPE PLUMMET.
77-210	12/20/1977	LIQUID LEVEL IN TANK 203-T DECREASED 2.5 INCHES.	ASSUME LEVEL DECREASE IS DUE TO SETTLING OF THE SLUDGE FOLLOWING SALT WELL PUMPING.
77-211	12/23/1977	LIQUID LEVEL IN TANK 101-SX DECREASED 1.1 INCHES.	ASSUME LEVEL DECREASE CAUSED BY DISSOLUTION OF SALT CRYSTALS FOLLOWING WATER ADDITION.
77-212	12/23/1977	LIQUID LEVEL IN TANK 103-TX DECREASED .6 INCHES.	ASSUME LEVEL DECREASE CAUSED BY MOVEMENT OF FOAM OR SLUDGE UNDER THE TAPE PLUMMET.
78-1	01/02/1978	LIQUID LEVEL IN TANK 101-A INCREASED 3.1 INCHES.	ASSUME LEVEL INCREASE DUE TO MATERIAL ON THE TAPE PLUMMET.
78-2	01/02/1978	WASTE MISROUTED FROM 004-AR TO TANK 102-A RATHER THAN TANK 106-A.	PERSONNEL AND PROCEDURE ERRORS. SUPERVISOR SIGNED INCOMPLETE DATA SHEET WITHOUT PROPER REVIEW, AND PROCEDURE LACKS ADEQUATE CHECKS AND APPROVALS.
78-3	01/06/1978	LIQUID LEVEL IN TANK 103-SX DECREASED 1 INCH.	ASSUME LEVEL DECREASE DUE TO FIC MOVING OVER IRREGULAR FISSURED CRUST.
78-4	01/08/1978	LIQUID LEVEL IN TANK 101-S DECREASED .6 INCHES.	UNKNOWN.
78-6	01/10/1978	BACKFLOW OF CONTAMINATION INTO RAW WATER SYSTEM IN 241-TX TANK FARM.	PERSONNEL ERROR/PROCEDURE. CHECK VALVE ON FLUSH PIPING INSTALLED IN THE INVERTED POSITION, MANUAL FLUSH VALVE LEFT PARTIALLY OPEN.
78-13	01/23/1978	UNDETECTED FILLING OF A-40 RETENTION BASIN AT 244-AR VAULT WITH 200,000 GALLONS.	MECHANICAL FAILURES. RADIATION ALARM FAILED CAUSING DIVERTER VALVE TO DIVERT. VALVE STEM WAS BINDING AND THE VALVE DID NOT CLOSE COMPLETELY, INDICATING LIGHT SHOWED VALVE CLOSED.
78-14	01/20/1978	CONTAMINATED LIQUID SPRAYED FROM HOLE DRILLED IN TOP OF TRANSFER LINE V453 WHEN PREPARING TO CUT LINE.	PROCEDURE ERROR. NO CONTAINMENT USED WHEN DRILLING INTO LINE. (SIMILAR TO 76-64)
78-15	01/23/1978	LIQUID LEVEL IN TANK 103-A DECREASED .75 INCHES.	ASSUME LEVEL DECREASE INDICATION DUE TO FIC PLUMMET MOVEMENT OVER IRREGULAR SURFACE.
78-16	01/23/1978	LIQUID LEVEL IN TANK 101-SY INCREASED 3.05 INCHES.	ASSUME LEVEL INCREASE DUE TO EXPANSION OF THE TANK MATERIAL.
78-18	02/09/1978	LIQUID LEVEL IN TANK 111-BY DECREASED 1.25 INCHES.	ASSUME LEVEL DECREASE DUE TO COMPACTION OF THE SURFACE BY THE TAPE PLUMMET, OR TO CONTACT WITH A DISCARDED TAPE LYING ON THE WASTE SURFACE.
78-24	02/23/1978	UNDERGROUND RAW WATER LINE BREAK RELEASED 60,000 GALLONS IN 241-A TANK FARM AND CAUSED CAVE-IN BETWEEN 102-A AND 105-A. HOLE READ 1R/HR DUE TO WATER FLOW THROUGH A BURIED UNUSED DE-ENTRAINER.	MECHANICAL FAILURE. RAW WATER LINE M5a RUPTURE.
78-26	03/02/1978	ELECTRICIAN ENTERED A 15 R/HR RADIATION FIELD IN 244-AR CANYON.	PERSONNEL ERROR. FAILURE OF TEAM IN CANYON TO RECOGNIZE THE RADIATION HAZARD.
78-30	03/22/1978	LIQUID LEVEL IN TANK 106-SX DECREASED .7 INCHES.	ASSUME LEVEL DECREASE DUE TO SLUDGE SETTLING FOLLOWING PUMP OUT.
78-39	04/17/1978	LIQUID LEVEL IN TANK 109-B DECREASED .55 INCHES.	ASSUME LEVEL DECREASE IS DUE TO SLIPPAGE OF THE FIC PLUMMET DOWN SLOPE IN CRUST.
78-44	04/25/1978	RAW WATER LINE LEAK OF 5000 GALLONS BETWEEN 241-S AND 241-SX TANK FARMS.	MECHANICAL FAILURE OF A BELL AND SPIGOT JOINT IN THE RAW WATER LINE.
78-47	05/08/1978	RADIOACTIVE DISCHARGE TO 216-A-8 CRIB EXCEEDED LIMITS.	ASSUME VENT HEADER EXTENSION SEAL LOOP CONDENSATE FOR A, AX, AY, AND AZ FARMS DRAINED INTO LINE.

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78-49	05/15/1978	RADIATION ACTIVITY IN TANK 105-A DRY WELL INCREASED.	ASSUME TWO CAUSES: ADDING COOLING WATER TO THIS KNOWN LEAKING TANK, EARLIER RAW WATER SPILL IN 241-A FARM.
78-53	05/23/1978	LIQUID LEVEL IN TANK 103-SX DECREASED .55 INCHES.	ASSUME LEVEL DECREASE DUE TO PLUMMET MOVEMENT OVER IRREGULAR SURFACE.
78-54	05/19/1978	LIQUID LEVEL IN TANK 111-U DECREASED .7 INCHES.	ASSUME LEVEL DECREASE DUE TO FOAM MATERIAL UNDER THE FIC PLUMMET.
78-60	06/09/1978	RADIATION ACTIVITY IN TANK 108-T DRY WELL INCREASED.	ASSUME ACTIVITY INCREASE DUE TO 106-T LEAK PLUME.
78-64	06/21/1978	ROAD GRADER STRUCK TRANSFER LINES HSW-202-M8 AND HSW-203-M8, LINE 202 ENCASEMENT WAS BENT AND PARTIALLY CRUSHED.	PERSONNEL ERROR. RESPONSIBLE PARTY WAS NOT FOLLOWING THE ROAD GRADING WORK, TRANSFER LINES WERE WELL MARKED AND BERMED.
78-69	07/05/1978	HIGH LEVEL WASTE LODGED STUCK IN CAISSON CHUTE WHILE BEING UNLOADED INTO FACILITY.	PROCEDURE ERROR AND DESIGN INADEQUATE. CASK AND CAISSON CHUTE DO NOT MATE PROPERLY AND UNLOADING PROCEDURAL CONTROL INADEQUATE.
78-73	06/12/1978	VACUUM TEST OF FIBERGLASS REINFORCED PLASTIC AND WOOD BOXES RESULTED IN STRUCTURAL FAILURE OF THE BOXES. SUSPECT THAT ALREADY BURIED BOXES ALSO WOULD FAIL.	DESIGN PROBLEMS OF THE BURIAL BOXES.
78-76	07/26/1978	MINOR LEAK IN 4-INCH RAW WATER LINE NEAR 241-TX TANK FARM.	MECHANICAL FAILURE OF A BELL AND SPIGOT JOINT IN LINE.
78-78	07/25/1978	RADIOGRAPHY CREW LEFT THE JOB SITE IN 241-TX FARM DUE TO AN UNDERGROUND TRANSFER IN PROGRESS.	PERSONNEL ERROR. PROBLEMS IN SCHEDULING AND MANAGING PERSONNEL.
78-80	07/27/1978	PROCESS TRANSFER LINE EXPOSED DURING HAND EXCAVATION, OVER-EXPOSURE OF PERSONNEL.	PROCEDURE ERROR. PERSONNEL NOT MADE AWARE OF THE PRESENCE OF THE UNDERGROUND LINE.
78-83	08/10/1978	MISTRANSFER OF WASTE FROM TANK 101-A TO TANK 104-BX INSTEAD OF 102-A.	PERSONNEL ERROR. VALVING CHANGED IN AA VALVE PIT INSTEAD OF AB VALVE PIT DURING TRANSFER.
78-87	08/17/1978	TWO 55-GALLON DRUMS ON 4-C ALPHA PAD APPEAR DISTORTED. DRUMS CONTAIN PLUTONIUM IN SOLUTION.	ASSUME THE CONTAINERS ARE PRESSURIZING AS A RESULT OF CHEMICAL REACTIONS OF THEIR CONTENTS.
78-88	08/22/1978	TRANSFER LINE BETWEEN TANK 107-S AND 105-BX PLUGGED DURING TRANSFER.	PLUGGAGE APPEARS TO BE CAUSED BY SOLIDS SETTLED IN LINE WHEN POWER WAS LOST TO 107-S TRANSFER PUMP.
78-89	08/24/1978	RADIATION ACTIVITY IN DRY WELL BETWEEN TANK 104-U AND 105-U INCREASED.	APPARENT SOURCE OF INCREASED ACTIVITY IS TANK 104-U WHICH IS A LEAKER.
78-90	08/26/1978	FRACTURED 6" SANITARY WATER LINE AND 8" RAW WATER LINE NEAR 275-EA BUILDING. AFFECTED WATER SUPPLY TO 244-AR FACILITY.	APPARENT CAUSE OF BROKEN PIPES WAS FROM HEAVY WEIGHT OF A CRANE UNLOADING PLATES FROM A RAILROAD CAR FOR USE AT 241-AW TANK FARM.
78-98	09/12/1978	PERSONNEL WIPING OFF POLE USED TO RELOCATE JUMPER IN 152-A DIVERSION BOX INGESTED RADIOACTIVE MATERIAL AND SUFFERED SKIN CONTAMINATIONS.	PERSONNEL ERROR. FAILURE TO FOLLOW PROCEDURE OR WEAR APPROPRIATE PROTECTIVE CLOTHING.
78-117	10/30/1978	UNDETECTED FAILURE OF LEAK DETECTORS IN 241-SA AND 241-SB VALVE PITS DURING CROSS-COUNTRY TRANSFER.	MECHANICAL PROBLEM. COMMON DRAIN FOR BOTH VALVE PITS BLOCKED.
78-121	11/15/1978	LIQUID LEVEL IN TANK 106-B DECREASED .6 INCHES.	UNKNOWN.
78-129	12/04/1978	LIQUID LEVEL IN CATCH TANK TX-302-A DECREASED 2.25 INCHES.	UNKNOWN.
78-130	12/02/1978	CONTAMINATED VAPOR VENTING FROM TANK 105-BX AIR INLET RISER AND 104-BX CENTER PIT.	TRANSFER INTO TANK DISPLACED WARM VAPORS OUT THIS TANK'S OPENINGS. TANK IS NOT EXHAUSTED.
79-02	01/02/1979	RAW WATER LEAK OF 37,500 GALLONS LEAKED FROM 241-S/SX SERVICE PIT.	PERSONNEL AND MECHANICAL FAILURES. HOUSING ON PIT WATER METER FAILED, AND PERSONNEL DID NOT VALVE OUT RAW WATER SUPPLY AS REQUIRED.
79-17	02/02/1979	LIQUID LEVEL IN TANK 103-SY DECREASED 2.8 INCHES.	ASSUME LEVEL DECREASE DUE TO COLLAPSE OF SURFACE CRUST.
79-20	02/07/1979	LIQUID LEVEL IN TANK 110-U INCREASED .2 INCHES.	LEVEL INCREASE ATTRIBUTED TO WATER INTRUSION THROUGH PUMP PIT.

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79-22	02/08/1979	RADIATION ACTIVITY IN DRY WELL NEAR TANKS 103-TX AND 107-TX INCREASED.	APPARENT MIGRATION OF CONTAMINATION IN SOIL.
79-25	02/12/1979	IMPROPER VALVE LINE-UP DURING WASTE TRANSFER OR SUBSEQUENT FLUSHING CONTAMINATED RAW WATER HOSE BIB IN 241-S FLUSH PIT.	PERSONNEL ERROR. IMPROPER VALVING IN FLUSH PIT OR VALVE PIT.
79-26	02/17/1979	MISROUTING OF TRANSFER FROM TANK 102-S TO TANK 103-SX INSTEAD OF TANK 106-SX.	PERSONNEL ERROR. IMPROPER VALVING IN 241-SX-A VALVE PIT.
79-29	01/31/1979	CONTAMINATED VAPOR VENTED FROM TANK 118-TX #1 RISER WHICH CONTAINS THE LIQUID LEVEL REEL.	UNKNOWN CAUSE AT TIME OF REPORT.
79-31	03/21/1979	LIQUID LEVEL IN TANK 110-TX DECREASED 2.5 INCHES.	UNKNOWN.
79-34	03/22/1979	CONTAMINATED VAPOR VENTED FROM TANK 106-U RISER #9, WHICH CONTAINS THE LIQUID LEVEL REEL.	NOT REPORTED.
79-35	03/22/1979	CORE DRILL STRING CONTACT WITH BOTTOM OF TANK 107-BX, WHICH BROKE THE DRILL ROD.	PROCEDURE ERROR. INADEQUATE ADMINISTRATIVE CONTROL OF DOCUMENTATION OF DRILL ROD SEGMENTS.
79-37	03/28/1979	RADIATION ACTIVITY IN TANK 107-BY DRY WELL INCREASED.	UNKNOWN.
79-38	03/28/1979	LIQUID LEVEL IN TANK 102-S EXCEEDED LIMIT.	PERSONNEL ERROR. INATTENTION BY CASS OPERATORS TO LEVEL ALARMS.
79-39	03/29/1979	LIQUID LEVEL IN 103-AX LEAK DETECTION PIT INCREASED.	ASSUME SNOW MELT INTRUSION THROUGH DRAIN BELLOWS ASSEMBLY.
79-60	05/23/1979	CONTAMINATED SWALLOW NESTS FOUND AT 244-AR VAULT.	BIRDS PICKED UP CONTAMINATED MUD FROM 216-A-40 RETENTION BASIN. BLADDER TYPE BAGS AT RETENTION BASIN HAVE LEAKS.
79-61	05/25/1979	SLURRY LINE SL-113 LEAKED IN 241-S FARM WHEN BEING READIED FOR A PRESSURE TEST.	MECHANICAL FAILURE OF 2-INCH CARBON STEEL LINE.
79-65	06/06/1979	WASTE TANK SURVEILLANCE SIGNALS LOST WHEN LINES CUT BY BACKHOE NEAR 241-B AND BX TANK FARMS.	PERSONNEL ERROR. PROCEDURE INDICATED HAND DIGGING IN THIS AREA INSTEAD OF BACKHOE USE.
79-68	07/11/1979	LIQUID LEVEL IN TANK 001-TXR DECREASED 1.25 INCHES.	UNKNOWN. TANK INTEGRITY IS QUESTIONABLE.
79-70	07/13/1979	LIQUID LEVEL IN 011-BXR VAULT TANK DECREASED 1.25 INCHES. ALSO TANK CELL HAS STRUCTURAL ANOMALIES.	LEVEL DECREASE CAUSE UNKNOWN. CELL STRUCTURAL ANOMALIES DUE TO PREVIOUS CELL OVERFILLING.
79-73	07/23/1979	RAW WATER LEAK IN 241-C TANK FARM RESULTED IN LARGE PUDDLE WHICH PARTIALLY COVERED TANKS 111-C AND 112-C.	MECHANICAL FAILURE OF "STOP AND WASTE" VALVE SUPPLYING 241-C FARM.
79-75	06/09/1978	RADIATION ACTIVITY IN TANK 108-T DRY WELL INCREASED.	ASSUME INCREASED ACTIVITY DUE TO MIGRATION OF TANK 106-T LEAK PLUME.
79-80	08/17/1979	MISROUTING OF 13,000 GALLONS OF CROSS-COUNTRY LINE LEAK CHECK WATER TO TANK 103-S.	PERSONNEL ERROR. FAILURE TO REALIGN VALVE IN 241-SA VALVE PIT.
79-81	08/20/1979	BOXES IN BURIAL GROUND 3A-TRENCH 17 EXCEEDED CRITICALITY LIMITS.	PERSONNEL ERROR. IT APPEARS THAT THREE BOXES WERE PUT IN THE BURIAL TRENCH WITHOUT PROPER SPACING.
79-100	10/10/1979	LIQUID LEVEL IN TANK 102-S EXCEEDED LIMIT.	PERSONNEL ERROR. FAILURE TO MAINTAIN CONTROL WHILE 242-S EVAPORATOR STEAM TURBINE PRESSURE REGULATING VALVE WAS CYCLED.
79-104	10/21/1979	WASTE TRANSFER FROM TANK 106-SX TO 101-SX MISROUTED TO TANK 102-S.	PERSONNEL ERROR. VALVE ALIGNMENT IN 241-SA VALVE PIT FOR OTHER TRANSFER REROUTED THIS TRANSFER.
79-113	10/10/1979	INADVERTENT FLOW ROUTING TO INACTIVE CRIB 216-A-24.	PERSONNEL ERROR. TWO SETS OF ROUTING VALVES WERE MISALIGNED.
79-118	11/29/1979	LIQUID LEVEL IN TANK 103-A DECREASED 4 INCHES.	ASSUME LEVEL DECREASE DUE TO SLUMPING OF THE TANK SURFACE.
79-125	12/15/1979	LIQUID LEVEL IN TANK 105-SX DECREASED 2.3 INCHES.	ASSUME LEVEL DECREASE DUE TO PLUMMET/TANK MATERIAL INTERACTION.
79-126	12/18/1979	25-TON CRANE BOOM POSITIONED OVER WORKERS ON TOP OF 241-SA VALVE PIT AND TESTED, VIOLATING SAFE OPERATING PRACTICES.	PERSONNEL ERROR. WILLFUL VIOLATION OF CRANE OPERATION PROCEDURES.

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80-4	01/13/1980	LIQUID LEVEL IN TANK 110-BX INCREASED 2.5 INCHES.	SNOW MELT CHANNELED INTO PUMP PIT AND DIRECTLY INTO TANK.
80-5	01/15/1980	LIQUID LEVEL IN TANK 108-BY INCREASED 3 INCHES.	RAPID SNOW MELT RAN INTO PUMP PIT THROUGH THE PIT DRAIN DIRECTLY INTO TANK.
80-6	01/15/1980	LIQUID LEVEL IN TANK 103-BY INCREASED 1.25 INCHES.	RAPID SNOW MELT RAN INTO PUMP PIT THROUGH THE PIT DRAIN DIRECTLY INTO TANK.
80-7	01/17/1980	LIQUID LEVEL IN TANK 103-SX DECREASED 1.1 INCHES.	ASSUME LEVEL DECREASE DUE TO FIC PLUMMET MEASURING IRREGULAR SURFACE.
80-8	01/18/1980	MISROUTED 2000 GALLONS INTO TANK 102-AY FROM TANK 103-A INSTEAD OF INTO TANK 101-AY.	PERSONNEL ERROR. MISVALVING THE SLURRY DISTRIBUTOR VALVE IN TANK 102-AY 02A VALVE PIT.
80-9	01/16/1980	CROSS-COUNTRY TRANSFER LINE FROM TANK 107-S TO 105-BX PLUGGED DURING TRANSFER OF TERMINAL LIQUOR SOLUTION.	PLUG DUE TO INADEQUATE DILUTION OF WASTE, DILUTION WATER METER FAILED.
80-25	02/20/1980	UNUSUAL LIQUID LEVEL DECREASE IN TANK 103-SX FOLLOWING TRANSFER IN.	LEVEL DECREASE CAUSED BY MIXING LARGE AMOUNT OF LOW DENSITY LIQUID INTO TANK OF SOLIDS.
80-26	02/21/1980	LINE LEAK IN SLURRY LINE SL 126 BETWEEN 241-SD VALVE PIT AND TANK 107-S CROSS-SITE PUMP PIT.	ASSUME LINE LEAKS DUE TO UNANTICIPATED CORROSION.
80-32	03/05/1980	CASS TRANSMISSION CABLE FROM 241-A TANK FARM CRUSHED DURING REMOVAL OF A FLUME IN 241-AZ TANK FARM. NOTIFICATION TO TANK FARM OPERATIONS WAS NOT INITIATED IMMEDIATELY AS REQUIRED.	PERSONNEL ERRORS. DAMAGE DURING CONSTRUCTION ACTIVITIES.
80-36	03/14/1980	CRITICALITY PREVENTION SPECIFICATION VIOLATIONS IN ALPHA-1 CAISSON OCCURRED BETWEEN 1970 AND 1973.	PROCEDURE ERRORS.
80-37	04/03/1980	HIGH VACUUM (-4.0"W.G. FOR 3 1/2 DAYS WHEN SUPPLY FAN WAS OFF, COULD HAVE BEEN AS HIGH AS -6.25" W.G.) IN TANK 102-AY ANNULUS.	PERSONNEL AND DESIGN PROBLEMS. UNEXPECTED SHUTDOWN OF ANNULUS SUPPLY FAN COUPLED WITH THE LACK OF PRESSURE SWITCH TO SHUT DOWN EXHAUST FAN.
80-50	05/16/1980	PARTIAL MISTRANSFER OF 4125 GALLONS INTO TANK 101-AY FROM TANK 103-A. TRANSFER WAS TO GO TO TANK 102-AY.	MECHANICAL FAILURE. 3-WAY SDV VALVE IN 241-AY-02A VALVE PIT SPLIT FLOW BETWEEN TWO TANKS. BALL VALVE ORIENTATION WITHIN VALVE BODY DID NOT CORRESPOND TO PAINTED FLOW DIAGRAM ON PROCESS PIT COVER BLOCK
80-51	05/31/1980	4120 GALLONS MISROUTED TO TANKS 101-AY AND 102-AY FROM 244-A CATCH TANK. INTENDED RECEIVER TANK WAS 102-A.	PERSONNEL ERROR. INSTALLED JUMPER WAS MISALIGNED IN 241-A-02C PIT.
80-53	06/07/1980	LIQUID LEVEL IN TANK 201-T INCREASED 2.25 INCHES.	ASSUME LEVEL INCREASE INDICATION DUE TO SOLIDS MOVEMENT IN VICINITY OF PLUMMET.
80-58	05/12/1980	LIQUID LEVEL MEASUREMENT TAPE IN TANK 107-BY CUT AND REMOVED WITHOUT PERMISSION.	PERSONNEL ERROR. CONSTRUCTION EMPLOYEE REMOVED TAPE AND GAUGE WITHOUT PERMISSION.
80-60	05/08/1980	PHOTOGRAPHIC SURVEY OF TX-302-C CATCH TANK REVEALED LIQUID LEVEL ABOVE MAXIMUM LIMIT.	MANUAL TAPE READINGS INDICATED LEVEL WITHIN LIMITS. TANK RISER EXTENDED 3' PREVIOUSLY AND NO REFERENCE TO ELEVATION CHANGE MADE TO DRAWINGS.
80-64	07/11/1980	LIQUID LEVEL IN TANK 112-TX INCREASED 1.75 INCHES.	LEVEL INCREASE DUE TO INTRUSION FROM A STEAM LINE LOCATED IN AN ASSOCIATED VALVE PIT.
80-66	07/21/1980	PLUGGED DEENTRAINER MINIMIZED FLOW THROUGH 241-SY EXHAUSTER, CAUSING 102-SY ANNULUS EXHAUST SYSTEM TO PULL CONTAMINATED AIR THROUGH AIR SAMPLER FILTER.	PERSONNEL ERROR. DEENTRAINER dP INSTRUMENT INSTALLED BACKWARDS, GIVING FALSE INDICATION OF GOOD OPERATION.
80-73	07/10/1980	MISROUTED 2200 GALLONS TO TANK 103-TX FROM 118-TX, INTENDED RECEIVER TANK WAS 106-SX.	PERSONNEL ERROR. FAILURE TO CLOSE VALVE IN 241-152-TXR DIVERSION BOX.

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80-80	07/23/1980	WHILE TRANSPORTING A SALT WELL PUMP FOR BURIAL THE PLASTIC COVERING THE PUMP WAS PUNCTURED AND TWO GALLONS OF RADIOACTIVE LIQUID SPILLED ON THE GROUND.	PERSONNEL ERROR. IMPROPER RIGGING OF PUMP FOR BURIAL.
80-81	08/26/1980	SPRAY LEAK IN 241-AW-05A CENTRAL PUMP PIT DURING SLURRY TRANSFER TO TANK 105-AW.	PERSONNEL AND DESIGN ERROR. WORKER UNABLE TO TIGHTEN CONNECTION BETWEEN JUMPER AND DISTRIBUTOR SUFFICIENTLY.
80-82	09/04/1980	LIQUID LEVEL IN TANK 103-A DECREASED 3.3 INCHES.	ASSUME LEVEL DECREASE IS DUE TO MIXING OF DISSIMILAR SOLIDS WITHIN THE TANK.
80-84	09/08/1980	WORKER EXCEEDED WEEKLY EXPOSURE WHILE WORKING IN A TRENCH IN 241-SY FARM DURING WASTE TRANSFER.	PROCEDURE ERROR. TRANSFER NOT COMMUNICATED TO CONSTRUCTION WORKERS.
80-87	10/02/1980	5775 GALLONS MISTRANSFERRED INTO TANK 103-AX FROM TANK 101-AX. INTENDED RECEIVER TANK WAS 103-AW.	PERSONNEL ERROR. VALVE MISPOSITIONED IN AX-A VALVE PIT.
80-88	10/17/1980	9625 GALLONS MISTRANSFERRED TO TANK 102-AY FROM 101-A. INTENDED RECEIVER TANK WAS 102-A.	PERSONNEL ERROR. CORRECT TRANSFER ROUTE NOT SET UP.
80-90	11/11/1980	SLURRY LINE SL 176 LEAKED DURING TRANSFER FROM 242-S EVAPORATOR TO TANK 103-SY.	MECHANICAL FAILURE. ASSUME CORROSION OF CARBON STEEL TRANSFER LINE.
81-02	11/19/1980	LIQUID LEVEL IN TANK 106-SX INCREASED 3 INCHES.	MECHANICAL FAILURE. INTRUSION FROM A LEAKING STEAM COIL AND FAILURE OF A VALVE TO THE STEAM COIL.
81-03	01/13/1981	RADIATION ACTIVITY IN TANK 101-A DRY WELL INCREASED.	ACTIVITY INCREASE DUE TO LEACHING DOWN OF A PREVIOUS SOIL CONTAMINATION AROUND 241-A-01B PIT.
81-04	01/14/1981	LIQUID LEVEL IN TANK 110-BX INCREASED 1.25 INCHES.	LIQUID LEVEL INCREASE DUE TO INTRUSION OF RAINWATER.
81-24	03/02/1981	20-40 GALLONS/DAY LEAK IN 4" RAW WATER LINE FEEDING 244-UR PROCESS VAULT.	MECHANICAL FAILURE. RAW WATER LINE DEVELOPED LEAKS AND CLOSED DISCHARGE LINE VALVES LEAKED THROUGH.
81-25	03/30/1981	LIQUID LEVEL IN TANK 103-T EXCEEDED LIMIT.	ASSUME LEVEL INCREASE DUE TO PRECIPITATION ENTERING TANK VIA PUMP PITS.
81-36	05/20/1981	LIQUID LEVEL IN TANK 103-TY EXCEEDED LIMIT BY 5.1 INCHES.	LEVEL INCREASE CAUSED BY WATER INTRUSION VIA AN OPEN WATER LINE IN 103-TY WATER FLUSH PIT. WATER RAN INTO PIT AND INTO THE TANK VIA THE PIT DRAIN.
81-48	07/10/1981	FIC BOX NEAR 118-TX VALVE PIT DAMAGED BY CRANE BACKING UP.	APPARENT ACCIDENT CAUSED BY ERROR IN JUDGMENT BY FLAGMAN, CONGESTION IN TANK FARM, AND EXTREMELY ROUGH TERRAIN.
81-52	08/17/1981	WASTE TRANSFER FROM 101-AY TO 104-AW MISROUTED TO 102-AY.	MECHANICAL FAILURE. MISROUTING CAUSED BY FAILURE OF 3-WAY DISCHARGE VALVE IN TK-AY-102-02D TO BE POSITIONED AGAINST MECHANICAL STOP.
81-55	09/03/1981	CONTAMINATION RELEASE IN 204-S UNLOADING STATION WHILE HOOKING UP RAILROAD CAR FOR UNLOADING.	MECHANICAL FAILURE. FAULTY SPRAY RING VALVE ON TOP OF CAR.
81-58	09/15/1981	FIRE IN 241-AN TANK FARM K1-2-1 CABINET ELECTRIC BLAST HEATER POWER COMPONENTS.	PERSONNEL ERROR AND MECHANICAL FAILURE. CURRENT ALARM SWITCH SHORTED OUT, SWITCH WAS REDUNDANT AND SHOULD HAVE BEEN REMOVED DURING CONSTRUCTION.
81-61	09/08/1981	RADIOACTIVE FLUSH WATER PUMPED TO TANK 102-SY THROUGH TRANSFER LINE THAT GOES THROUGH S-FARM WHERE WORKERS WERE EXCAVATING.	PERSONNEL ERROR. COMMUNICATION FAILURE, AND FAILURE TO FOLLOW LOCK AND TAG PROCEDURE.
81-82	12/07/1981	LIQUID LEVEL IN 011-BXR TANK DECREASED 2.5 INCHES.	MECHANICAL FAILURE. LEVEL DECREASED WHEN TANK WALL BUCKLED WHICH CAUSED LEAKS.
82-01	01/06/1982	RADIATION ACTIVITY IN TANK 109-C DRY WELL INCREASED.	ASSUME ACTIVITY INCREASE IS CAUSED BY MIGRATION OF SOIL CONTAMINATION.

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82-02	01/05/1982	FAILURE OF PROCESS LINE V-402 DURING TX-FARM SALT WELL PUMPING.	MECHANICAL FAILURE. LINE FAILURE CONFIRMED BY PRESSURE TEST.
82-12	03/24/1982	LOSS OF EMERGENCY POWER TO 204-AR UNLOADING STATION AND 242-A EVAPORATOR.	MECHANICAL FAILURE. APPARENT LOSS OF BACK-UP POWER DUE TO DIRT IN RELAY CONTACTS, FAILURE OF MANUAL/AUTOMATIC SWITCH, AND FAILURE IN AUTOMATIC START CONTROL CIRCUIT MODULE.
82-21	05/15/1982	FAILURE OF PROCESS LINE BETWEEN 241-TX-155 AND 241-U-151, V-398.	MECHANICAL FAILURE OF INNER PROCESS LINE.
83-1	01/22/1983	FAILURE OF PUREX 36" CHEMICAL SEWER LINE DISCOVERED BY CRANE TIRE CAUSING CAVE-IN IN 241-AP TANK FARM.	MECHANICAL FAILURE. BELLS OF VITRIFIED CLAY PIPE WERE BROKEN AND LEAKING.
83-07	04/11/1983	WASTE TRANSFER INTO AY TANK WITHOUT VENTILATION ON RECEIVER TANK. NORMAL VENTILATION SYSTEM WAS OUT-OF-SERVICE, PORTABLE EXHAUSTER STARTED, BUT OPERATOR FAILED TO OPEN THE EXHAUSTER INLET VALVE.	PERSONNEL ERROR, FAILURE TO FOLLOW PROCEDURE. OPERATOR OPENED VALVE ONE QUARTER TURN INSTEAD OF 15 1/2 TURNS.
83-09	03/25/1983	WHILE CORE DRILLING IN 241-AX-152 DIVERTER STATION A 2" ENCASEMENT DRAIN LINE WAS HIT AND BREACHED.	DESIGN PROBLEM. ENCASEMENT DRAIN LINE WAS NOT ON CONSTRUCTION DRAWINGS OR DRILL PERMIT.
83-11	03/19/1983	LIQUID LEVEL IN TANK 201-T INCREASED 2.25 INCHES.	UNKNOWN.
83-16	07/11/1983	TANK 102-T LIQUID LEVEL INCREASE. TANK INTERIM STABILIZED, ASSUMED INTRUSION OF RAIN/SNOW MELT.	WEATHER. RAIN/SNOW MELT INTRUSION INTO TANK. 241-TR-153 BOOSTER PUMP PIT DRAINED WAS SEALED, LEVEL INCREASE HAS STOPPED.
83-22	11/16/1983	INCREASE IN ACTIVITY IN DRYWELL ADJACENT TO TANK 107-TX. APPARENT RAINFALL INTRUSION INTO INACTIVE, QUESTIONABLE INTEGRITY TANK CAUSED INCREASED ACTIVITY IN ASSOCIATED DRYWELL.	MECHANICAL/WEATHER. TANK INTEGRITY QUESTIONABLE, RAINFALL INTRUSION THROUGH COVERBLOCKS ASSUMED. TANK 107-TX PUMPED.
83-28	11/07/1983	STEAM RELEASE FROM 107-AN PUMP PIT. AN FARM VENT FAN SHUT DOWN DURING WASTE TRANSFER TO TANK 107-AN. TANK VACUUM LOST, STEAM ESCAPED FROM 107-AN PUMP PITS.	MECHANICAL. STACK SAMPLER MALFUNCTION CAUSED INTERLOCK TO SHUTDOWN VENT FAN, PRIOR TO TRANSFER BEING STOPPED.
83-31	11/16/1983	TANKS 102,101,104 AND 106-AW PRESSURIZED WHEN HOT WATER (123oF) DUMPED INTO TANK 102-AW FROM 242-A EVAPORATOR.	RAPID EXPANSION OF TANK VAPORS OVERWHELMED THE EXHAUST AIR FLOW.
83-33	11/06/1983	MULTIPLE PRESSURIZATIONS OF TANK 103-AW WHEN RECEIVING PUREX E-5 WASTE.	PRESSURIZATION DUE TO VAPORIZATION OF THE THERMALLY HOT WASTE AS IT IS DUMPED INTO A COOLER TANK.
83-34	12/12/1983	SMEARABLE CONTAMINATION IN 200-EAST ARE CLEAN OUT BOXES (COBs).	ASSUME DETERIORATION OF PLUG SEALS ON THE CENTER RISER OF THE COBs.
84-02	01/08/1984	50-70' BREACH IN B-POND DIKE BETWEEN EAST AND WEST EXPANSION PONDS.	APPARENT CAUSE OF DIKE BREACH IS EROSION UNDER THE FABRIFORM LINER OF THE SPILLWAY.
84-06	10/27/1983	RELEASE OF RADIOACTIVE EFFLUENT TO THE 216-A-8 CRIB IN EXCESS OF CONCENTRATION GUIDELINES.	APPARENT SOURCE OF CONTAMINATION WAS A DEACTIVATED 16" WASTE COOLING WATER LINE THAT ENTERS THE A-08 SAMPLE PIT.
84-17	04/13/1984	FAILURE OF THERMOCOUPLES NEAR AIR LIFT CIRCULATORS IN AGING WASTE TANK 101-AZ.	MECHANICAL FAILURE OF UNKNOWN TYPE.
84-19	03/21/1984	FIRE IN FUEL DELIVERY TRUCK IN 200-WEST AREA.	PINHOLE LEAK IN POWER STEERING LINE CAUSED FLUID TO SPRAY ONTO THE MANIFOLD OF THE TRUCK. FLUID FLASHPOINT IS 375oF, MANIFOLD TEMPERATURE WAS 800-900oF.
84-21	03/28/1984	2800 GALLONS OF PUREX WASTE ROUTED TO TANK 102-AZ INSTEAD OF TANK 101-AZ.	PERSONNEL ERROR. DIVERTER VALVE IN 152-AX DIVERTER STATION NOT RETURNED TO NORMAL POSITION AFTER TRANSFER TO NEARBY WASTE TANK.
84-27	04/30/1984	SAMPLE OF GABLE MOUNTAIN POND FOUND HIGH LEVELS OF STRONTIUM 90 EXCEEDING LIMITS.	HIGH STRONTIUM LEVELS DUE TO ACCIDENTAL RELEASE IN 1964.

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84-34	05/31/1984	LIQUID LEVEL IN TANK 203-C DECREASED 2 INCHES.	CAUSE OF TANK LEVEL DECREASE NOT REPORTED.
84-71	11/19/1984	TRANSFER LINE BETWEEN B-PLANT AND 244-A LIFT STATION (SN-233) LEAKED TO ENCASEMENT.	MECHANICAL FAILURE OF TRANSFER LINE.
84-81	12/18/1984	BACKUP EXHAUSTER FOR 241-AY AND AZ FARMS FAILED AFTER STARTING. AGING WASTE FARM TANKS WERE WITHOUT VENTILATION FOR 20 MINUTES.	MECHANICAL FAILURE. EXHAUSTER CIRCUIT BREAKER TRIPPED AT FAN START.
85-34	04/12/1985	UNNEUTRALIZED TANK F-18 (PUREX) TRANSFER RESULTED IN PIPE DAMAGE IN LINE BETWEEN 241-AW-A VALVE PIT AND 241-101-AW DISTRIBUTOR.	PERSONNEL ERROR.FAILURE TO NEUTRALIZE BATCH PRIOR TO TRANSFER.
85-48	05/23/1985	TRANSFER BETWEEN PUREX AND 101-AZ TANK RESULTED IN EXPOSURE TO PERSONNEL IN EXCAVATION NEAR 241-AY FARM.	PERSONNEL ERROR. FAILURE TO COMMUNICATE A DELAY IN TRANSFER TIME TO PERSONNEL IN EXCAVATION.
85-55	06/26/1985	FLASH FIRE IN 153-AX DIVERSION BOX.	FIRE CAUSED BY ACTUATING AN ELECTRIC TOOL IN DIVERSION BOX AFTER USING A CONTAMINATION SEALANT IN THE DIVERSION BOX FOLLOWED BY A METHYL ALCOHOL FLUSH.
85-98	12/18/1985	FAILURE TO REPLACE BREATHER FILTERS WHEN REQUIRED BY SAR FOR WASTE TANKS 102-BX, 103-C, AND 108-C.	PERSONNEL ERRORS. FILTERS NOT REPLACED IN TIME DUE TO MANPOWER PROBLEMS.
86-45	08/06/1986	FOUR OPERATIONAL SAFETY REQUIREMENTS NOT COMPLETED AS REQUIRED. PREVENTATIVE MAINTENANCE ACTIVITIES WERE NOT CARRIED OUT AS REQUIRED.	ADMINISTRATIVE. TANK FARM PROD CONTROL DID NOT SCHEDULE THE PMs. COVERED 241-A-702 AIR MONITOR, 241-AR-151 LEAK DETECTOR, AY & AZ LEAK DETECTOR, AREA EFFLUENT IN-LINE RADIATION MONITOR
RHO-UOR-87-04	03/13/1987	ALL OPERATIONAL SAFETY REQUIREMENTS REVIEWED, FOUND THAT FOR 9 OF THEM, POSITIVE COMPLIANCE COULD NOT BE VERIFIED.	ADMINISTRATIVE. SAFETY ANALYSIS REPORTS HAD TO BE CHANGED TO REFLECT THE REAL SITUATION.
87-05	03/30/1987	I-129 EMISSIONS FROM 241-AW FARM PRIMARY EXHAUSTER EXCEEDED OPERATIONS ADMINISTRATIVE CONTROL VALUE	OPERATIONAL. PUREX FLUSHED A SILVER REACTOR TO THE AW FARM IN JUNE, 1986. I-129 LEVELS WENT UP TO 4 TIMES THE LIMIT. LEVELS STARTED DECREASING IN JULY, BACK TO NORMAL IN DECEMBER.
WHC-UO-87-010-PUREX-01	08/30/1987	PUREX CLADDING REMOVAL IN PROGRESS, DISCHARGE MADE TO 216-A-36B CRIB. PUREX STACKS, CRIB, AND AW TANK FARM EXHAUST EXCEEDED LIMITS OF (AMMONIUM HYDROXIDE) NH4OH AND AMMONIA (NH3).	PROCEDURE/PERSONNEL ERROR. AMMONIA CONTAINING DISCHARGE SHOULD HAVE BEEN TO A WASTE TANK INSTEAD OF CRIB. INSUFFICIENT ATTENTION TO ENVIRONMENTAL DISCHARGE LIMITS.
WHC-UO-88-028-TF-03	07/13/1988	241-SX-104 EXCEEDED THE LEVEL DECREASE CRITERIA OF 0.3 FOOT DECREASE.	MECHANICAL. TANK ASSUMED TO LEAK. INITIATED STABILIZATION AND ISOLATION ACTIVITIES.
WHC-UO-88-029-TF-04	07/26/1988	241-AX-102 EXCEEDED THE 1.00 INCH DECREASE CRITERIA.	MECHANICAL. TANK ASSUMED TO LEAK. PUMPED TANK OUT IN AUGUST, 1988.
WHC-UO-88-034-TF-05	10/11/1988	241-C-103 SHOWS DECREASING LEVEL TREND OF 0.5" SINCE DECEMBER, 1984. NO LIMITS EXCEEDED.	MECHANICAL. NO LIMITS EXCEEDED. TANK WILL BE STABILIZED ON SCHEDULE.
WHC-UO-89-03-TF-01	01/09/1989	OPERATING AGING WASTE FACILITY USING DOE UNAPPROVED SAFETY ANALYSIS REPORT (2 YEARS). REPORT WAS APPROVED BY CONTRACTOR AND "OFFICIALLY RELEASED". DOE HAD NOT APPROVED THE SAR REVISION.	ADMINISTRATIVE. SAR APPROVAL PROCESS BREAKDOWN.
WHC-UO-89-04-TF-02	01/06/1989	SURVEILLANCE NON-CONFORMANCE, FAILURE TO TAKE TEMPERATURE READINGS EVERY 45 DAYS ON HIGH-HEAT TANKS (101, 102, 103, 104, 105, AND 106-SX)	ADMINISTRATIVE/PERSONNEL ERROR. NO ADMINISTRATIVE PROCEDURE TO ENSURE ALL OSRs AND STATUS OF MONITORING. DATA TAKING REQUIREMENTS NOT FOLLOWED.
WHC-UO-89-009-TF-03	01/31/1989	LEVEL DECREASE IN 241-A-102. EXCEEDED THE 1.00 INCH LEVEL DECREASE CRITERIA.	MECHANICAL. TANK ASSUMED LEAKER. EXPEDITED PUMPING OF TANK.

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WHC-UO-89-014-TF-04	03/07/1989	SURFACE LEVEL MEASUREMENT DECREASE IN 241-A-302-B CATCH TANK. LEVEL READINGS HAVE SHOWN WIDE FLUCTUATIONS.	MECHANICAL. MEASURING DEVICE SHORTING OUT. TANK INTERIM STABILIZED.
WHC-UO-89-023-TF-05	05/18/1989	LEVEL DECREASE IN 241-AX-102. LEVEL CONTINUED TO DECREASE AFTER TANK PUMP DOWN. EXCEEDED 1.00" LEVEL DECREASE CRITERIA.	LEVEL DECREASE ATTRIBUTED TO TANK CONTENTS SETTLING.
WHC-UO-89-030-SAHP-01	05/24/1989	RAILROAD WASTE TANK CAR SHIPPED FROM 340 FACILITY IN 300-AREA TO 204-AR FACILITY WITH SMEARABLE CONTAMINATION IN EXCESS OF LIMITS.	PERSONNEL ERROR. FAILURE TO COMMUNICATE THE REQUIREMENTS OF DEPT. OF TRANSPORTATION IN SAFETY ANALYSIS REPORT FOR PACKAGING (SARP) AND THE HEALTH PHYSICS PROCEDURE.
WHC-UO-89-043-TF-06	09/05/1989	TANK FARM AMMONIA RELEASES EXCEEDING CERCLA LIMITS.	TRAINING. THE REQUIREMENTS CHANGED FOR AMMONIA RELEASES, PLANT OPERATING AND ENGINEERING STAFF WERE NOT AWARE OF THE SIGNIFICANCE OF THESE CHANGES, PROCEDURES TO BE CHANGED.
WHC-UO-89-044-TF-07	08/16/1989	241-C TANK FARM VAPOR RELEASE INHALED BY EMPLOYEE.	OPERATION OF TANK FARM. SUSPECT AMMONIA SMELL FROM TANK 241-C-102 THROUGH BREATHER FILTER. INSTALLED ACTIVATED CARBON SYSTEM TO FILTERS.
WHC-UO-89-059-TF-08	11/28/1989	AUTOMATIC TRANSFER OF ELECTRIC POWER FAILED TO TRANSFER TO DIESEL GENERATED POWER ON LOSS OF NORMAL POWER TO 242-A EVAPORATOR.	MECHANICAL. MALFUNCTION OF AUTOMATIC EMERGENCY TRANSFER SWITCH.
WHC-UO-89-062-SSS-01	12/22/1989	ERROR FOUND IN COMPUTER CODE GENII USED TO CALCULATE ENVIRONMENTAL IMPACTS OF EMISSIONS ON HANFORD SITE.	PERSONNEL, PROCEDURE ERROR. WIND DIRECTIONS USED IN MODELLING ARE OFF BY 180 DEGREES.
WHC-UO-89-065-TF-09	12/25/1989	PORTABLE POWER TRANSFORMER FAILED WHILE NORMAL POWER OUT OF SERVICE FOR SCHEDULED MAINTENANCE, 200-EAST TANK FARMS.	MECHANICAL. PORTABLE TRANSFORMER FAILED DUE TO A BURNT CABLE.
RL-WHC-TANKFARM-1990-0014	09/04/1990	RELEASE OF RADIONUCLIDE MATERIAL FROM TANK 105-A PORTABLE EXHAUSTER SEAL POT AND ONTO SOIL. APPROX 3 SQUARE FEET OF THE SOIL SURFACE WAS CONTAMINATED.	ADMINISTRATIVE/MECHANICAL. FAULTY SEAL POT DISCOVERED APRIL, 1990, FAULTY SEAL POT NOT REPLACED, FAILED IN SEPTEMBER, 1990
RL-WHC-TANKFARM-1990-0056	09/16/1990	RELEASE OF RADIONUCLIDE MATERIAL FROM TANK 105-A PORTABLE EXHAUSTER FILTER HOUSING ONTO SOIL. TWO SPOTS WERE CONTAMINATED, 8000 D/M IN 1 FT IN DIAMETER AREA, 600 D/M IN AN 8 INCH IN DIAMETER AREA	ADMINISTRATIVE. LOCK AND TAG PROCEDURE FOR MAINTENANCE DID NOT LOCK OUT THE DRAIN VALVES DURING MAINTENANCE.
RL-WHC-TANKFARM-1990-0082	09/26/1990	OSR NON-CONFORMANCE ON ADMINISTRATIVE CONTROLS FOR UNDERGROUND STORAGE TANK 241-U-103. MAINTENANCE FAILED TO USE SPARK RESISTANT TOOLS DURING BREATHER FILTER MAINTENANCE.	ADMINISTRATIVE. WORK PACKAGE NOT PROPERLY PREPARED, NO PERSON-IN-CHARGE.
RL-WHC-TANKFARM-1990-0087	09/27/1990	UNCONTROLLED ACCESS TO HIGH RADIATION AREAS, IMPROPER ACCESS TO S/SX/SY FARMS DUE TO NO CONTROL BEING PROVIDED	PERSONNEL ERROR. NOT TRAINED PROPERLY IN ACCESS CONTROL REQUIREMENTS.
RL-WHC-TANKFARM-1990-0117	10/05/1990	LOSS OF 105-A PORTABLE EXHAUSTER EFFLUENT MONITORING CAPABILITIES. FAILURE OF CAM AND RECORD SAMPLER, WHILE EXHAUSTER WAS OPERATING.	MECHANICAL. KNIFE SWITCH NOT FULLY ENGAGED.
RL-WHC-TANKFARM-1990-0145	10/14/1990	LOSS OF POWER TO A SECTION OF HANFORD 230 KV LINE. LINE FAULT CAUSED POWER LOSS AT 100-B, 100-KE, 100-KW, AND 100-N.	MECHANICAL. CONTAMINATED INSULATOR CAUSED POWER POLE FIRE.
RL-WHC-TANKFARM-1990-0186	10/30/1990	241-A-105 UNEXPLAINED TEMPERATURE INCREASE DURING EXHAUSTER OPERATION AND FAILURE TO NOTIFY DOE IN A TIMELY MANNER. SOIL TEMPERATURE UNDER THE WASTE TANK READ 297oF, LIMIT IS 300oF. NO SPECIFICATIONS OR REQUIREMENTS WERE VIOLATED.	MECHANICAL/PERSONNEL ERROR. UNDERGROUND THERMOCOUPLE WIRE HAD DETERIORATED. OPERATIONS FAILED TO REPORT INCREASING TEMPERATURE AS REQUIRED.

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RL-WHC-TANKFARM-1990-0319	12/12/1990	INADVERTENT SHUTDOWN OF 241-SY PRIMARY EXHAUSTER, OPERATOR OPENED INCORRECT CIRCUIT BREAKER.	PERSONNEL ERROR. BREAKERS WAS NOT LABELED, OPERATOR DID NOT VERIFY CORRECT CIRCUIT BREAKER.
RL-WHC-TANKFARM-1990-0386	12/26/1990	STEAM COIL LEAK AT 242-S EVAPORATOR RESULTS IN ACTIVATION OF FIRE SPRINKLER SYSTEM. SPRINKLER WAS LOCATED IN THE HVAC FILTER SYSTEM PLENUM.	MECHANICAL/ADMINISTRATIVE. FAILED STEAM COIL, ROOT CAUSE WAS FAILURE TO REPLACE COILS WHEN NOTIFIED OF REPLACEMENT NEED IN JUNE, 1989.
RL-WHC-TANKFARM-1991-0003	01/03/1991	DISABLING OF AUDIBLE ALARM ANNUNCIATOR, ALARM PANEL "A", 242-S EVAPORATOR. ALARM PANEL "ACKNOWLEDGE" BUTTON WAS HELD IN WITH WEDGED PAPER CLIP, PREVENTING SIX ALARMS FROM SOUNDING.	ADMINISTRATIVE. PROCEDURE VIOLATION.
RL-WHC-TANKFARM-1991-0011	01/06/1991	FREEZING OF 241-A-401 COOLING TOWER SPRAY LINE RESULTS IN UTILIZATION OF BACKUP SYSTEM.	PERSONNEL ERROR/WEATHER CONDITIONS. TWO VALVES HAD BEEN LEFT CLOSED PREVENTING THE COOLING TOWER PIPING FROM DRAINING. THE WATER FROZE AND RENDERED THE PIPING INOPERABLE.
RL-WHC-TANKFARM-1991-0061	01/18/1991	242-T ALPHA CONTINUOUS AIR MONITOR DISABLED, OSR VIOLATION. VACUUM PUMP WAS INTENTIONALLY UNPLUGGED BY A HEALTH PHYSICS TECHNICIAN.	PROCEDURE VIOLATION. EMPLOYEE INDICATED THE NOISE FROM THE PUMP RESULTED IN A HEADACHE.
RL-WHC-TANKFARM-1991-0079	01/25/1991	LOSS OF ACCOUNTABILITY OF RADIOACTIVE SOURCES.	ADMINISTRATIVE. SOURCE LOCATIONS NOT UPDATED, MULTIPLE SERIAL NUMBERS ON SOURCES, LACK OF TRAINING, REQUIREMENTS AND MANAGEMENT EXPECTATIONS NOT EASILY DERIVED.
WHC-91-0096-TFARM	01/16/1991	ADDITION OF TWO TANKS, 241-T-107 AND 241-TY-104, TO THE LIST OF UNREVIEWED SAFETY QUESTION TANKS CONTAINING FERROCYANIDE.	FURTHER REVIEW OF HISTORICAL RECORDS INDICATED THESE TANKS SHOULD BE ADDED TO THE LIST OF 22 FERROCYANIDE TANKS.
RL-WHC-TANKFARM-1991-0099	01/31/1991	LOSS OF 244-CR RECORD SAMPLER, DUE TO LOW FLOW CAUSED BY A HIGH DIFFERENTIAL PRESSURE ACROSS THE PRE-FILTERS.	ADMINISTRATIVE. DATA SHEET SPECIFICATIONS DID NOT AGREE WITH OSD REQUIREMENTS. SYSTEM REACTED AS DESIGNED.
RL-WHC-TANKFARM-1991-0103	02/01/1991	DAMAGED HEAT TRACE LINE CAUSES ELECTRICAL SHOCK.	MECHANICAL. DAMAGED HEAT TRACE LINE ALLOWED DRAIN PIPE TO BE ENERGIZED. WORKED CONTACTED PIPE AND RECEIVED ELECTRICAL SHOCK.
RL-WHC-TANKFARM-1991-0192	03/06/1991	242-S PUMP ROOM FLOODED (7 FT) BY DAMAGED FIRE SYSTEM PIPING, CAUSED BY FREEZING CONDITIONS.	WEATHER CONDITIONS/PROCEDURE ERROR. FIRE SYSTEM OUT OF SERVICE FOR REPAIR, PROCEDURE DID NOT INCLUDE PUMP ROOM OR EVAPORATOR ROOM.
RL-WHC-TANKFARM-1991-0200	03/21/1991	POTENTIAL DISTURBANCE OF 241-SY-101 TANK CRUST. WHILE RAISING A RISER COVER TO INSTALL VAPOR SPACE PROBES, AN UNEXPECTED CABLE WAS DISCOVERED, ATTACHED TO THE RISER COVER. ASSUMED THE WORK DISTURBED THE CRUST.	ADMINISTRATIVE. CONFIGURATION CONTROL PROBLEM, SLUDGE WEIGHT CABLE LOCATION WAS UNKNOWN PRIOR TO WORK.
RL-WHC-TANKFARM-1991-1001	04/01/1991	LOSS OF TANK PRESS. INDICATION IN 241-SY TANK FARM, OPERATIONAL SAFETY REQUIREMENT VIOLATION. RELAY FAILURE CAUSED LOSS OF BOTH AIR COMPRESSORS, AIR MONITORING AND ALARM CAPABILITIES.	MECHANICAL/ADMINISTRATIVE. RELAY FAILURE. AIR DRYER IN 242-S OUT OF SERVICE FOR TWO YEARS, LOSS OF AIR COMPRESSORS ALLOWED MOISTURE IN LINES CAUSING FLUCTUATING READINGS AND WATER IN ROTAMETERS.
RL-WHC-TANKFARM-1991-1002	04/04/1991	MISSED PROGRAMMATIC MILESTONE FOR 242-A EVAPORATOR RE-START.	ADMINISTRATIVE. ADDITIONAL WORK TAKEN ON WITHOUT CHANGING THE MILESTONE DATE. FAILURE TO USE A FORMALIZED CHANGE CONTROL SYSTEM.
RL-WHC-TANKFARM-1991-1008	04/18/1991	DIESEL FUEL SPILL FROM THE EMERGENCY GENERATOR AT 241-SY TANK FARM.	PERSONNEL ERROR. THE FUEL TANK WAS OVERFILLED, WHEN HEATED UP DO TO WARM WEATHER, THE FUEL EXPANDED AND OVERFLOWED.

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RL-WHC-TANKFARM-1991-1012	05/05/1991	244-AR VAULT PORTABLE COMPRESSOR FUEL LEAK DUE TO FUEL FILTER SEAL RUPTURE.	ADMINISTRATIVE. MAINTENANCE NOTED THAT THE SEAL NEEDED TO BE CHANGED BUT TWO COMPRESSORS HAD BEEN OUT OF SERVICE FOR A YEAR, IT COULD NOT BE SHUT DOWN.
RL-WHC-TANKFARM-1991-1021	06/21/1991	TANK 241-C-104 CORE SAMPLE EXCEEDED CRITICALITY SPECIFICATIONS. THIS INFRACTION WAS DECLARED FIVE YEARS AFTER THE SAMPLE WAS TAKEN, AN ERROR IN THE LABORATORY DATA TRANSMITTAL WAS DISCOVERED. NO INFRACTION ACTUALLY OCCURRED.	ADMINISTRATIVE. LACK OF ADMINISTRATIVE CONTROL IN REVIEWING DATA.
RL-WHC-TANKFARM-1991-1030	07/24/1991	POTENTIAL LOCK AND TAG PROCEDURE VIOLATION AT 216-A 29-A DIVERSION BOX. CHAIN WHICH HAD LOCKED VALVE 216-A-29-A-1, APPEARED TO HAVE BEEN CUT AND THE VALVE PARTIALLY OPENED.	MALICIOUS OR CRIMINAL INTENT.
RL-WHC-TANKFARM-1991-1050	10/02/1991	UNPLANNED LIQUID LEVEL INCREASE IN TANK 241-AW-102. LEVEL INCREASED ONE INCH OVER ONE SHIFT. EYEWASH UNIT WAS LEFT ON, OR LEAKED, AND DRAINED INTO TANK.	MANAGEMENT PROBLEM, IMPROPER RESOURCE ALLOCATION.
RL-WHC-TANKFARM-1991-1053	10/18/1991	241-TX LOCK AND TAG VIOLATION, A BREAKER WAS IN THE ON POSITION WITH A TAG INDICATING IT WAS LOCKED IN THE OFF POSITION.	ADMINISTRATIVE/PERSONNEL ERROR. PROCEDURE DID NOT INDICATE THE BREAKER COULD BE CHANGED, CUSTODIAN DID NOT TELL TAG INSTALLER TO CHANGE POSITION.
RL-WHC-TANKFARM-1991-1056	10/25/1991	SUSPECT SINGLE SHELL TANK pH LEVELS. INFORMATION WAS PRESENTED AT A DNFSB MEETING WHICH INDICATED pH LEVELS OF SIX TO EIGHT IN THE 1940s AND 1950s.	MANAGEMENT DECISION. IN CONSIDERATION OF TANK SPACE PRESERVATION.
RL-WHC-TANKFARM-1991-1058	11/07/1991	LOSS OF 241-AN VENTILATION SYSTEM. THE PRIMARY EXHAUSTER TRIPPED ON LOW DIFFERENTIAL PRESSURE DURING A PRE-FILTER INSPECTION, THE BACKUP SYSTEM WAS TAGGED OUT FOR MAINTENANCE. NO VENTILATION SYSTEM FOR 12 MINUTES.	PLANNING DEFICIENCY. POTENTIAL FOR SYSTEM SHUTDOWN DURING PRE-FILTER INSPECTION, NO BACKUP SYSTEM AVAILABLE.
RL-WHC-TANKFARM-1991-1063	11/16/1991	LOSS OF POWER TO 200 WEST TANK FARMS. LOST VENTILATION TO 241-SY FARM AND 242-T EVAPORATOR. POWER OFF FOR ONE MINUTE.	SUSPECT THAT A SMALL ANIMAL CAUSED THE OUTAGE.
RL-WHC-TANKFARM-1991-1064	11/22/1991	LOSS OF 241-AY/AZ TANK FARM BACKUP VENTILATION SYSTEM CLASS A EQUIPMENT DURING TROUBLESHOOTING.	MECHANICAL/PERSONNEL ERROR. MOTOR RESET CIRCUIT FAULT TRIGGERED AN ELECTRICAL CHAIN REACTION. RESET BUTTON SHOULD NOT HAVE BEEN PRESSED.
RL-WHC-TANKFARM-1991-1073	05/24/1991	MISSED PROGRAMMATIC MILESTONE FOR 242-A EVAPORATOR RE-START.	WORK STOPPAGE DUE TO FUNDING LIMITATIONS. LACK OF ABILITY TO HOLD THE CONSTRUCTION CONTRACTOR ACCOUNTABLE.
RL-WHC-TANKFARM-1991-1076	12/16/1991	LOCK AND TAG VIOLATION AT 241-C TANK FARM, WORK WAS DONE ON A HEAT TRACE LINE WITH NO LOCK AND TAG IN PLACE.	ADMINISTRATIVE. LOCK AND TAG CLEARED WITHOUT TESTING, PAPERWORK NOT COMPLETED.
RL-WHC-TANKFARM-1991-1079	12/23/1991	MISSED TRI-PARTY AGREEMENT MILESTONE M-05-03 FOR INTERIM STABILIZATION. COULD NOT PUMP THE TANKS AS ASSIGNED.	ADMINISTRATIVE. FAILURE TO GET OFFICIAL DETERMINATION OF IMPACTS OF INTERIM STABILIZATION ACTIVITIES.
RL-WHC-TANKFARM-1992-0007	01/22/1992	TANK FARM INTERNAL ASSESSMENTS UNCOVERED DEFICIENCIES IN SOLID WASTE COMPLIANCE ISSUES DUE TO LACK OF PROGRAMMATIC DIRECTION.	INSUFFICIENT STAFFING, TRAINING, INADEQUATE IMPLEMENTATION OF INTERNAL ENVIRONMENTAL COMPLIANCE OVERSIGHT PROGRAMS.
RL-WHC-TANKFARM-1992-0011	01/28/1992	PERSONNEL EXPOSURE TO UNKNOWN VAPORS AT B-COMPLEX RESULT IN SYMPTOMS REQUIRING MEDICAL EVALUATION.	BATTERY BOILED OVER INSIDE RADIOLOGICAL CONTROLLED AREA.

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RL-WHC-TANKFARM-1992-0012	01/31/1992	OPERATIONAL SAFETY REQUIREMENT NONCONFORMANCE. DAILY READINGS COULD NOT BE OBTAINED DUE TO TANK FARM ENTRY LIMITATIONS AFTER BATTERY BOILOVER.	ADMINISTRATIVE. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT NOT AVAILABLE TO MAKE TANK FARM ENTRIES FOR SURVEILLANCE.
RL-WHC-TANKFARM-1992-0019	02/29/1992	LOSS OF PRIMARY VENTILATION IN AP-FARM. THE PRIMARY FAN TRIPPED DUE TO DIFFERENTIAL PRESSURE PROBLEMS, AND THE BACKUP FAN ATTEMPTER, BUT FAILED, TO START.	MECHANICAL.
RL-WHC-TANKFARM-1992-0022	02/28/1992	LOSS OF CONFIGURATION CONTROL IN THE 241-SY PRIMARY LEAK DETECTION SYSTEM DUE TO AN INACCURATE PROCEDURE. CONDUCTIVITY PROBE SETTINGS INCORRECT FOR 101-SY AND 103-SY.	ADMINISTRATIVE. PROCEDURES HAD NOT BEEN UPDATED TO REFLECT MODIFICATIONS IN LEAK DETECTION CONFIGURATION.
RL-WHC-TANKFARM-1992-0028	03/16/1992	200 EAST/200 WEST POWER OUTAGE. TWO BACKUP POWER SYSTEMS FAILED TO START DURING OUTAGE.	MECHANICAL. 204-AR DIESEL GENERATOR AND 241-SY TANK FARM DIESEL GENERATOR FAILED TO START WHEN REQUIRED.
RL-WHC-TANKFARM-1992-0033	04/23/1992	OSR SURVEILLANCE REQUIREMENT NOT MET, EQUIPMENT OUT OF CALIBRATION DUE TO LACK OF ADMINISTRATIVE CONTROL.	ADMINISTRATIVE. CALIBRATION CARDS FOR LOW FLOW ALARMS AT AY AND AZ TANKS WERE INACTIVATED IN 1989. CHANGES TO PISCES SYSTEM NOW REQUIRES OUTSIDE REVIEW.
RL-WHC-TANKFARM-1992-0037	04/30/1992	UNREVIEWED SAFETY QUESTION REGARDING CRITICALITY SAFETY OF TANK FARMS. SARs STATE A CRITICALITY IN WASTE TANKS IS INCREDIBLE. WE CAN NOT PROVE THIS.	ADMINISTRATIVE. INADEQUATE CHARACTERIZATION, AND LACK OF DATA ON MATERIAL DISTRIBUTION IN THE TANKS.
RL-WHC-TANKFARM-1992-0038	05/02/1992	241-A-702 STACK CONTINUOUS AIR MONITOR FAILURE.	MECHANICAL.
RL-WHC-TANKFARM-1992-0051	06/28/1992	ELECTRICAL STORM DISRUPTS 200 WEST POWER.	WEATHER CONDITIONS.
RL-WHC-TANKFARM-1992-0055	07/20/1992	15 MINUTE LOSS OF VENTILATION IN 241-AP TANK FARM DUE TO PLUGGED SENSING LINE LEADING TO DIFFERENTIAL PRESSURE INDICATING SWITCH. BACKUP FAN ATTEMPTED TO START BUT TRIPPED DUE TO VALVE FAILING TO OPEN.	MECHANICAL. SENSING LINE PLUG AND INLET VALVE FAILURE.
RL-WHC-TANKFARM-1992-0066	09/15/1992	BOMB THREAT RESULTS IN 241-SY EVACUATION.	MALICIOUS INTENT OR PART OF A TRAINING EXERCISE. UNKNOWN.
RL-WHC-TANKFARM-1992-0069	09/21/1992	FLOATING LIQUID ORGANIC LAYER IN 241-C-103 DETERMINED TO BE AN UNREVIEWED SAFETY QUESTION.	ADMINISTRATIVE. FLOATING ORGANIC LAYER IS NOT ADDRESSED IN THE SAFETY ANALYSIS REPORT.
RL-WHC-TANKFARM-1992-0073	09/18/1992	DECREASE IN LIQUID LEVEL IN TANK 241-T-101. ASSUMED LEAKER.	DEFECTIVE OR FAILED MATERIAL.
RL-WHC-TANKFARM-1992-0074	10/01/1992	LEAKAGE FROM CONTAINMENT CASK CONTAINING AN AIR LANCE TAKEN FROM TANK 241-SY-101. SOIL CONTAMINATED.	DEFECTIVE OR INADEQUATE DESIGN. NEEDED A GASKET IN THE LOCKING ASSEMBLY.
RL-WHC-TANKFARM-1992-0082	11/04/1992	LOSS OF LEAK DETECTION CAPABILITIES FOR TANK 241-SY-102. ANNULUS FLAKE BOX LEAK DETECTOR PROBE FAILED. ANNULUS CAM WAS NOT FUNCTIONAL DUE TO PREVIOUS FAILURE. RESULTING LCO NONCONFORMANCE.	MECHANICAL. LEAK DETECTOR FAILURE, CAM OUT OF SERVICE DUE TO VACUUM PUMP FAILURE.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
RL-WHC-TANKFARM-1993-0005	01/12/1993	MISSED SURVEILLANCE ON TK-105-C AND TK-106-C RESULT IN OSR NONCONFORMANCE.	WEATHER CONDITION. SNOW DRIFTS WAIST HIGH AND HIGH WINDS CAUSED READINGS TO BE 12 HOURS BEYOND THE LIMIT.
RL-WHC-TANKFARM-1993-0009	01/18/1993	LOSS OF PRIMARY TANK VENTILATION IN 241-AN TANK FARM. VENTILATION FAN SHUT OFF FOR UNKNOWN REASON. BACKUP FAN FAILED TO START DUE TO INCORRECT SWITCH POSITION SETTING THE FAN IN STANDBY.	MECHANICAL/PERSONNEL ERROR. SUSPECT INSTRUMENT NOISE CAUSED PRIMARY FAN FAILURE, SWITCH MISPOSITION CAUSED BACKUP FAN FAILURE TO START.
RL-WHC-TANKFARM-1993-0011	01/21/1993	TEMPORARY LOSS OF 241-AY/AZ PRIMARY TANK VENTILATION DUE TO PERSONNEL ERROR. THE TWO BACKUP FANS WERE OUT FOR MAINTENANCE.	PERSONNEL ERROR. INATTENTION TO DETAIL, ELECTRICIAN BUMPED MAGNETIC MOTOR STARTER FOR ISOLATED FAN, TRIPPING THE OPERATING FAN.
RL-WHC-TANKFARM-1993-0012	01/22/1993	AMMONIA-LIKE ODOR AFTER REMOVING 1" DRAIN PLUG FROM AIR LANCE RECEIVER.	WEATHER CONDITIONS. TEMPERATURE WARMING CONTRIBUTED TO PRESSURIZATION OF AIR IN AIR LANCE PACKAGE, WHEN PLUG WAS REMOVED, PRESSURE WAS RELIEVED.
RL-WHC-TANKFARM-1993-0023	02/11/1993	ALPHA CAM VACUUM PUMP FAILED ON EXHAUST STACK MONITOR AT 242-T EVAPORATOR. PUMP WAS UNPLUGGED FOR ROUTINE TESTING OF FLOW ALARM, PUMP FAILED TO RE-START WHEN PLUGGED BACK IN.	MECHANICAL. DEFECTIVE OR FAILED COMPONENT.
RL-WHC-TANKFARM-1993-0027	03/05/1993	TANK 101-AN LIQUID INDICATING TRANSMITTER FAILURE, SURVEILLANCE MISSED. OSR VIOLATION.	MECHANICAL/TRAINING. COMPONENT FAILURE. DELAY IN SURVEILLANCE DUE TO MAINTENANCE STAFF UNFAMILIAR WITH JOB.
RL-WHC-TANKFARM-1993-0028	03/05/1993	WASTE TRANSFER STOPPED DUE TO FAULTY AIR VALVE, LEAK BY ON BALL VALVE ALLOWED 700 GALLON TRANSFER TO 102-SY.	MECHANICAL. AIR VALVE FAILURE, BALL VALVE LEAK BY, LEAK DETECTORS FAILED TO ALARM.
RL-WHC-TANKFARM-1993-0035	03/23/1993	SINGLE SHELL TANK 241-BX-111 ASSUMED LEAKER. LEVEL DECREASE IN TANK CHANGED FROM 0.5 INCH DECREASE OVER 7 YEARS, TO ONE INCH DECREASE IN THREE MONTHS.	MECHANICAL/ADMINISTRATIVE. ASSUMED CORROSION CAUSED LEAK. TANK SERVICE LONG PAST DESIGN LIFE.
RL-WHC-TANKFARM-1993-0043	03/05/1993	NON-CONFORMANCE TO STATE REQUIREMENTS CONCERNING STORING HAZARDOUS WASTE CONTAINERS.	ADMINISTRATIVE/FAILURE TO FOLLOW PROCEDURE. RESULTED IN A BACKLOG OF WASTE CONTAINERS ACCUMULATED.
RL-WHC-TANKFARM-1993-0044	05/06/1993	LIQUID OBSERVATION WELL IN TANK 241-SX-102 INDICATES LIQUID LEVEL DECREASE OF 0.4 FEET. ASSUMED LEAKER.	DEFECTIVE OR FAILED MATERIAL.
RL-WHC-TANKFARM-1993-0045	05/08/1993	WASTE CONTAINERS FOUND WITHOUT CORRECT PAPERWORK. INVENTORY OF TANK FARMS FOUND 26 OUT OF COMPLIANCE WASTE CONTAINERS (NO ACCUMULATION DATES, NO INVENTORIES, OR IMPROPER STORAGE)	ADMINISTRATIVE. LACK OF EFFECTIVE PROCEDURE TO CONTROL WASTE CONTAINERS ACCORDING TO POLICIES AND REGULATIONS.
RL-WHC-TANKFARM-1993-0057	06/22/1993	CRANE ACTIVITIES IN 241-SY TANK FARM, WIRE ROPE SEVERED, BLOCK FALLING TO GROUND.	PERSONNEL ERROR/LACK OF PROPER EQUIPMENT. INATTENTION BY CRANE OPERATOR, LACK OF ANTI TWO-BLOCKING ALARM ON CRANE MAIN HOIST.
RL-WHC-TANKFARM-1993-0063	07/15/1993	PACKAGING DISCREPANCIES OF SOLID WASTE CONTAINERS AT 241-SX FARM. LOW LEVEL WASTE BOXES CONTAINED DANGEROUS WASTE.	PROCEDURE VIOLATION.
RL-WHC-TANKFARM-1993-0069	08/04/1993	INADVERTENT START OF 241-SY-101 HYDROGEN MITIGATION PUMP.	LACK OF TRAINING, INFORMATION TAG INFORMATION INCOMPLETE.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
RL-WHC-TANKFARM-1993-0072	08/11/1993	LOSS OF POWER TO AP, AW, AND AN TANK FARMS RESULTING IN LOSS OF PRIMARY EXHAUST FANS IN AP, AW, AN, AND C TANK FARMS.	POWER LOSS DUE TO LARGE BIRD LANDING ON POWER POLE AT GABLE MOUNTAIN.
RL-WHC-TANKFARM-1993-0090	10/08/1993	CALCULATION ERROR FOR AMMONIA RELEASE MECHANISM AT 241-SY-101, GENERATES USQ.	PERSONNEL ERROR IN COMPUTER INPUT FOR TANK BURN ACCIDENT CALCULATION.
RL-WHC-TANKFARM-1993-0105	12/02/1993	METHANE GAS IN SY-101 DISCOVERED TO ADD 10% MORE ENERGY TO THE BURN ANALYSIS RESULTS. NEW DATA ANALYSIS METHOD DISCOVERED DISCREPANCY.	LESS THAN EFFECTIVE MANAGEMENT METHODS. LACK OF FORMAL REPORTING METHODS BETWEEN LOS ALAMOS NATIONAL LAB AND WHC.
RL-WHC-TANKFARM-1993-0107	12/04/1993	241-SY TANK FARM ENTRANCE DURING MIXER PUMP OPERATION.	PROCEDURE VIOLATION. OPERATORS REMOVED EXCLUSION AREA BARRIERS AND ENTERED AREA WITHOUT VERIFYING PUMP TEST COMPLETION.
RL-WHC-TANKFARM-1993-0117	12/15/1993	INCORRECT SAFETY PRECAUTIONS USED DURING MAINTENANCE ACTIVITIES ON EXHAUSTER SYSTEM OF FLAMMABLE WATCHLIST TANK.	PERSONNEL ERROR. ERRONEOUS INFORMATION ON DRAWING AND INCORRECT INTERPRETATION OF DRAWING.
RL-WHC-TANKFARM-1994-0002	01/11/1994	SOIL COVER DEPTH OVER 241-SY TANKFARM TANKS EXCEEDS SPECIFICATIONS.	ROOT CAUSE ANALYSIS TO BE PERFORMED.
RL-WHC-TANKFARM-1994-0009	02/23/1994	DECREASE IN LIQUID LEVEL IN TANK 241-T-111. DECLARED ASSUMED LEAKER IN 1984.	TANK ASSUMED TO LEAK, FAILED MATERIAL, PROBABLY DUE TO CORROSION.
RL-WHC-TANKFARM-1994-0035	06/14/1994	POTENTIAL VIOLATION OF 241-AP TANKFARM DOME LOADING REQUIREMENTS. ENGINEERING REVIEW OF CONSTRUCTION DOCUMENTATION FOUND THAT DOME LOADING WAS BASED ON 110 LBS. PER CUBIC FOOT, WETTED SOIL DENSITY IS 121 LBS. PER CUBIC FOOT.	ROOT CAUSE ANALYSIS TO BE PERFORMED.
RL-WHC-TANKFARM-1994-0036	07/01/1994	SURVEILLANCE ANOMALY IN 241-C-106. CYCLIC TEMPERATURE VARIATIONS OCCURRED ON ONE OF TWO THERMOCOUPLE TREES IN TANK. INCONSISTENT DATA WITH HISTORICAL DATA. EXCEEDED OPERATING SPECIFICATION OF 20 DEGREES PER DAY VARIATION.	DESIGN PROBLEM. ENERGY BUILDUP DURING TESTING WAS NOT DETECTED UNTIL AFTER THE TEST WHEN WATER ADDITION TO TANK PUSHED HOT SLUDGE UP AGAINST THE THERMOCOUPLE.
RL-WHC-TANKFARM-1994-0063	11/14/1994	MISSED SURVEILLANCE REQUIREMENTS DURING WASTE TRANSFER. COVERS ON CLEAN-OUT BOXES, PITS, AND BOXES ARE TO BE VERIFIED IN POSITION ONCE EVERY 72 HOURS DURING TRANSFER.	PERSONNEL ERROR, VIOLATION OF PROCEDURE. COVER BLOCKS WERE NOT INSPECTED AS REQUIRED.
RL-WHC-TANKFARM-1994-0070	12/12/1994	SPILL OF ONE GALLON OF WASTE AT C-110 SALTWELL AFTER FLUSH OF C-110 AND C-107.	PROCEDURE PROBLEM/MECHANICAL. SALTWELL FLUSH WATER BACKPRESSURE CAUSED WASTE WATER INTO RAW WATER FEED LINE WHERE IT LEAKED OUT OF DEFECTIVE QUICK DISCONNECTS.
RL-WHC-TANKFARM-1995-0010	01/26/1995	PERSONAL CLOTHING CONTAMINATION AT W-030 PROJECT CHANGE TRAILER. KEH PIPEFITTER HAD CONTAMINATED OVERALLS. NUCLEAR PROCESS OPERATOR BAGGED THE CLOTHING AND RELEASED THE PIPEFITTER TO GO HOME. MANAGEMENT NOT NOTIFIED.	MANAGEMENT PROBLEM. NUCLEAR PROCESS OPERATOR DID NOT NOTIFY RADIOLOGICAL CONTROL OR SHIFT MANAGER.
RL-WHC-TANKFARM-1995-0063	07/25/1995	FAILURE TO COMPLY WITH WATCHLIST CONTROLS WHEN SAMPLES FROM C-105, C-202, AND C-204, WERE TAKEN AND FORWARDED TO OPERATIONS WITHOUT HAVING WATCHLIST CONTROLS IMPOSED.	PROCEDURE VIOLATION. SHIFT MANAGER DID NOT IMPOSE WATCHLIST CONTROLS FOR SAMPLES.

OCCURRENCE NUMBER	DISCOVERY DATE	DESCRIPTION OF EVENT	EVENT CAUSE
RL-WHC-TANKFARM-1995-0088	10/16/1995	RECENT STUDY INDICATES 23 TANKS SHOULD BE ADDED TO FLAMMABLE GAS UNREVIEWED SAFETY QUESTION. PNL IDENTIFIED 59 TANKS WITH POSSIBLE TRAPPED GAS, BASED ON LEVEL FLUCTUATIONS. 21 OF THESE TANKS ARE MONITORED AND CONTROLLED AS WATCHLIST TANKS.	TO BE DETERMINED.
RL-WHC-TANKFARM-1996-0007	01/16/1996	OSD VIOLATION, 244-TX DCRT HYDROXIDE LEVELS NOT SUFFICIENT. SHOULD HAVE HAD 0.1178 MOLES/LITER, ONLY HAD 0.0025 MOLES/LITER. HYDROXIDE LEVEL NOT ADJUSTED AFTER SALTWELL WASTE AND FLUSH WATER TRANSFER FROM SST T-107.	IMPROPER CHEMICAL ADJUSTMENT AFTER WASTE TRANSFER.

Figure 2-1. Flow Diagram of the Hazard Analysis Process.

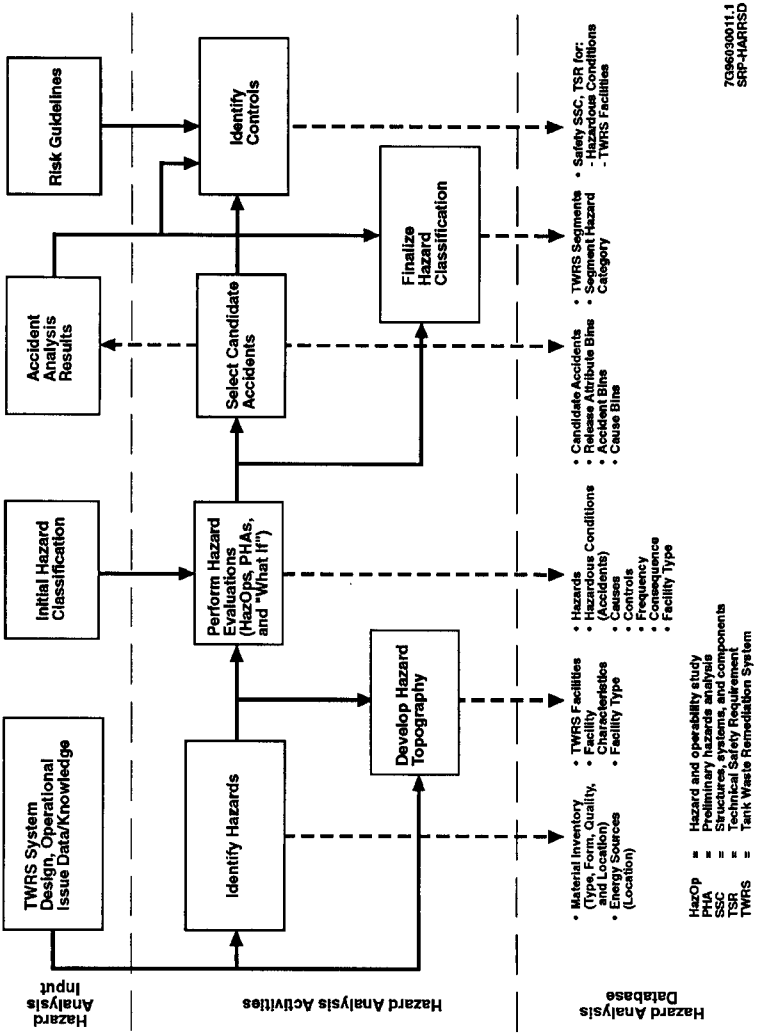

Figure 2.5-1. Process to Identify Controls.

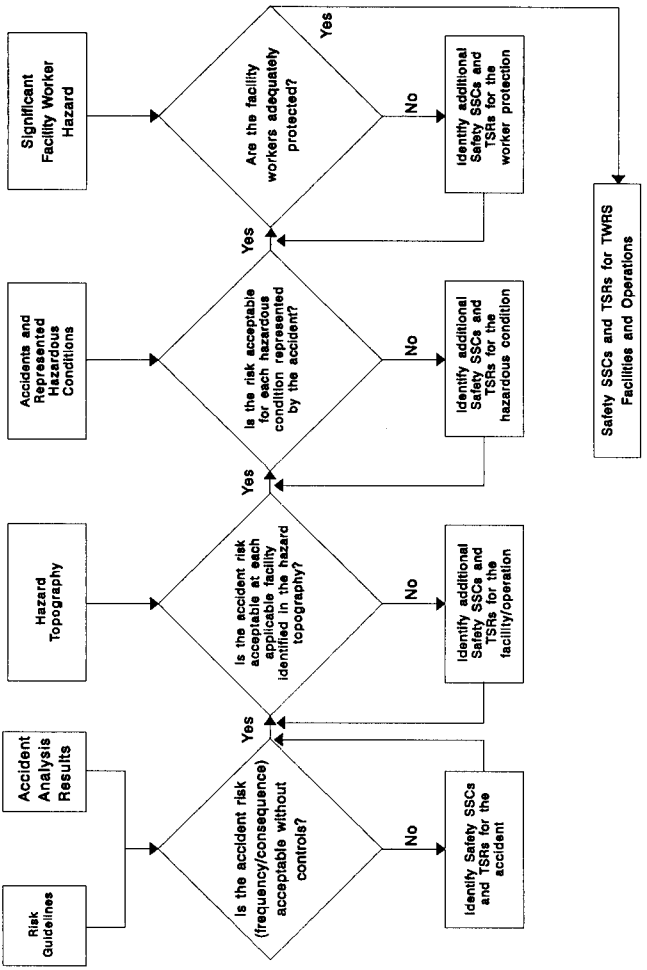

Figure 2.5-2. Risk Matrix.

Likelihood	Consequences			
	S0	S1	S2	S3
F3	7	11	---------- ------14------ ----------	---------- -----16----- ----------
F2	4	8	12	---------- -----15----- ----------
F1	2	5	9	13
F0	1	3	6	10

Considered for identification of Safety Structures, Systems, and Components and Technical Safety Requirements.

Requires identification of Safety Structures, Systems, and Components and Technical Safety Requirements.

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Tables 2.1-1 through 2.7-1

Table 2.1-1. Hazards Identification[1] Form.

Energy Classification[2]	Tank A		Facility B		Facility C	
	PT	PE	PF	PE	PF	PE
Corrosive						
Explosive/Pyrophoric						
Nuclear Criticality						
Flammable Materials						
Thermal Radiation						
Chemical Reactions						
Friction						
Electrical						
Kinetic-Rotational						
Kinetic-Linear						
Mass, Gravity, Height						
Pressure-Volume						
Thermal (except radiant)						

[1]The hazards identification represents the hazards that could potentially cause an uncontrolled release of radioactive or hazardous materials only. Hazards only resulting in personnel injury are not included.

[2]See Table 3-1b for the specific energy classifications represented by the numeric designators.

PT = Potentially Present in the tanks.

PF = Potentially Present in the facility.

PE = Potentially Present elsewhere in/adjacent to facility.

Table 2.1-2. Hazard Identification Checklist and Energy Designators.

A Corrosive	D Flammable Materials	H Electrical	K Mass, Gravity, Height
1 Acids	1 Packing materials	1 Battery banks	1 Human effort
2 Caustic	2 Rags	2 Diesel units	2 Stairs
3 Natural chemicals	3 Gasoline	3 Transformers	3 Lifts and cranes
4 Decon solution	4 Lube oil	4 Wiring	4 Bucket and ladder
5 High temperature waste	5 Coolant oil	5 Switchgear	5 Trucks
6 Other	6 Paint solvent	6 Underground wiring	6 Slings
	7 Diesel fuel	7 Cable runs	7 Hoists
	8 Buildings and contents	8 Service outlets/fittings	8 Elevators
	9 Trailers and contents	9 Pumps	9 Jacks
	10 Grease	10 Motors	10 Scaffold and ladders
	11 Hydrogen	11 Heaters	11 Pits
	12 Nitric acid	12 Power tools	12 Elevated doors
	13 Organics	13 Small equipment	13 Vessels
	14 Gases-other	14 Electrical equipment	14 Vaults
	15 Liquids-other	15 Hot plates	15 Excavations
	16 Sodium	16 High voltage	16 Raw water lines
	17 Other	17 Locomotive, electrical	17 Other
		18 Transmission lines	
		19 Other	
B Explosive/Pyrophoric	**E Thermal Radiation**	**I Kinetic-Rotational**	**L Pressure-Volume**
1 Caps	1 Furnaces and boilers	1 Centrifuges	1 Boilers
2 Primer cord	2 Steam liners	2 Motors	2 Surge tanks
3 Dynamite	3 Lab equipment	3 Pumps	3 Autoclave
4 Scrub chemicals	4 Solar	4 Fans	4 Test Loops
5 Dusts	5 Other	5 Laundry equipment	5 Gas bottles
6 Hydrogen		6 Shop equipment	6 Pressure vessels
7 Gases, other		7 Other	7 Stressed members
8 Nitrates			8 Gas receivers
9 Peroxides-superoxides			9 Negative pressure collapse
10 Pu and U metal			10 Steam headers and lines
11 Other			11 Positive pressure release
			12 Other
C Nuclear Criticality	**F Chemical Reactions**	**J Kinetic-Linear**	**M Thermal (except radiant)**
1 Vaults	1 Uncontrolled chemical reactions	1 Cars, trucks, buses	1 Convective
2 Temporary storage areas	2 Other	2 Forklifts, dollies, carts	2 Exposed components
3 Shipping and receiving areas		3 Railroad	3 Heaters
4 Filters		4 Obstructions	5 Fire boxes
5 Casks		5 Crane loads	6 Electric wiring, equip
6 Burial ground		6 Pressure vessel blowdown	7 Furnaces
7 Storage racks		7 Other	8 Steam lines
8 Canals and basins	**G Friction**		9 Welding torch
9 Decon solution	1 Belts		10 Other
10 Trucks, forklifts, dollies	2 Bearings		
11 Hand carry	3 Fans		
12 Cranes/lifts	4 Gears		
13 Hot cells, assembly, inspection	5 Motors		
14 Laboratories	6 Power tools		
15 Tanks	7 Other		
16 Other	8 All		

Table 2.2-1. Tank Waste Remediation System Facility Type Codes.

Effluent Retention	
ER	Cribs, ditches, ponds
Facilities	
F204	204-AR Unloading Facility
F213	213-W Compactor Building
F244	244-AR Vault
Multiple	
M	Multiple facilities (e.g. as in the case of common cause event)
Other	
A	Abandoned or inactive TWRS equipment
G	General
O	Other (interfacing facilities/equipment)
OM	Miscellaneous Inactive Storage Facility
Pipes	
PA	Above ground pipe
PC	Contained pipe (e.g. cross-site line)
PD	Double encased pipe
PS	Single encased pipe (direct buried)
Storage Facilities	
S90	90-Day Storage Pad, Intermediate Holding Area, Satellite Accumulation Area
SS	2727 W Sodium Storage
SV	Vertical Storage

Tanks * (See Example Section Below)		
T	Tanks, non-specific (Add any appropriate tank type designators. If applicable to all tanks, do not add any tank type designator.)	
CD	DCRT (244-TX, 244-U)	
CN	Non-DCRT catch tank, drainage type (vent and lift station, aging waste vent)	
DS	Double Shelled Tanks non-specific (Add any appropriate characteristic designators.)	
	A	Air lift circulators (aging waste tanks)
	C	Caustic addition tank (e.g. 107-AN)
	E	Evaporator feed tank
	H	Flammable gas tanks (hydrogen)
	O	Organic tanks
	P	Active transfer/mixer pumps (e.g. 102-SY)
	V	Active ventilation
SS	Single Shelled Tanks non-specific (Add any appropriate characteristic designators.)	
	D	Dry crust tank (114-SX)
	H	Flammable gas tanks (hydrogen)
	L	High heat load (>40,000 btu)
	O	Organic tanks
	V	Active ventilation tanks
SD	Double Shelled Tanks or Single Shelled Tanks (Add any appropriate Characteristic designators. - See DS and SS)	
Pits Boxes and Caissons		
WB	Clean out box, sluice transfer box	
WD	Diversion box, diverter station, pump pit, valve pit	
WF	Flush pit, service pit, caisson, leak detection pit	

*** EXAMPLE OF FACILITY TYPE CODE FOR TANKs:**
The letter T indicates that the facility is a tank of some kind. Each additional designator separated by periods will supply additional information as indicated in the column under the Tank section of the table.

- T.DS.A.H - Flammable gas (hydrogen), double shelled tank with air lift circulators.
- T.SD.L.V - High Heat load tank, either single shelled or double shelled with active ventillation.
- T.SS.D - Dry crust, single shelled tank.
- T.CD.V - DCRT with active ventillation.

Table 2.3-1. Representative Hazard Analysis.

Facility/topic	Hazard Evaluation Identifier	Technique	Characteristics
Facility interfaces - 222-S Laboratory, 242-A Evaporator, 242-S Evaporator, 242-T Evaporator, B Plant, T Plant, U Plant, PUREX, PFP	I-222S, I-242A, I-242S, I-242T, I-BPLANT, I-TPLANT, I-UPLANT, I-PUREX, I-PFP	HazOp	Impacts on TWRS facilities of active physical interfaces
204-AR Transfer Facility	204AR	HazOp	Lab waste, transfer of waste by vehicle
244-AR Vault	244AR	HazOp	Storage for liquid waste
Overground transfers	OGT	HazOp	SST waste transfer overground
Tank 241-C-106	106C	HazOp	SST, high heat, active ventilation
Tank 241-AN-107	107AN	HazOp	DST, caustic addition
Tank 241-AW-102	102AW	HazOp	DST, evaporator interface, active ventilation
Tank 241-S-102	102S	HazOp	SST, flammable gas, organics, passive ventilation
Tank 241-SX-114	114SX	HazOp	SST, dry crust, high heat, active ventilation
Cross-site transfer (Tank 241-SY-102) (selected portions of Project W-058)	XS, W058	HazOp	DST, waste transfer by pipeline
209-E Storage Area	90D	PHA	Storage for RCRA[1] and low-level waste
213 Compactor	213W	PHA	Equipment decontamination activities
244-AR Vault	244AR-PH	PHA	Storage for liquid waste
2727-W Building	2727W	PHA	Liquid sodium storage
Cleanout boxes	COB	PHA	Interface with waste transfer system
Cribs, ditches, and ponds	CDP	PHA	Disposal of liquid waste
Inactive miscellaneous underground storage tank (plus other inactive facilities)	Identifier ends in - I, e.g., CRN-05-I	PHA	Various types and forms of radioactive and hazardous material
Siphoning	TSF	PHA	Various types and forms of radioactive and hazardous material
Tank operations (Tank 241-AZ-102)	BND, CVR, CRN, DCN, FR, GRN, ITK, RAD, RSR, SFF, VEH	PHA	DST, aging waste
Tank operations (Tank 241-BX-109)	BND, CVR, CRN, DCN, FR, GRN, ITK, RAD, RSR, SFF, VEH	PHA	SST, passive ventilation
Tank operations (Tank 241-SY-101)	BND, CVR, CRN, DCN, FR, GRN, ITK, RAD, RSR, SFF, VEH	PHA	DST, flammable gas, active ventilation, mixer pump
Vertical storage units	VSU	PHA	Storage for solid low-level waste
Common cause failure	CCF	"What If"	Events with potential impact on multiple TWRS facilities
External events	EE	"What If"	Events with potential impact on multiple TWRS facilities
Natural phenomena	NP	"What If"	Events with potential impact on multiple TWRS facilities

[1] *Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.

Table 2.3-2. Likelihood Categories.

F3 (>.01)	**Anticipated events:** Frequency greater than once in 100 operating years
F2 (10^{-2} to 10^{-4})	**Unlikely:** Frequency between once in 100 years and once in 10,000 operating years
F1 (10^{-4} to 10^{-6})	**Extremely unlikely:** Frequency between once in 10,000 years and once in 1 million years
F0 ($<10^{-6}$)	**Beyond extremely unlikely:** Frequency of less than once in a million years.

Table 2.3-3. Consequence Categories.

Category	Definition
S3	Significant radiological or chemical exposure to the public
S2	Significant radiological or chemical exposure to onsite worker
S1	Significant radiation or chemical exposure to facility worker
S0	No significant effect outside facility systems. No consequences for facility workers, onsite workers, or public.
E3	Offsite discharge OR discharge to groundwater
E2	Significant discharge onsite
E1	Localized discharge of hazardous material
E0	No significant environmental consequence

Table 2.4-1. Accident Release Attributes.

Accident release attributes (BIN)		
Initial energy level	Initial release location	Initial release form
A. High	1. Atmosphere	a. Vapor/gas/aerosol
B. Moderate	2. Ground surface	b. Liquid/slurry
C. Low	3. Subsurface	c. Solid/sludge
OCC - Occupational Safety		
RP - Radiation Protection		

Table 2.4-2. Hazardous Condition Cause Codes.

CAUSE DESCRIPTION	Criticality	Fire / Explosion	Tank Dome Collapse	Release	Human Error Release	Non-release / Occupational
Addition of aggravating materials / Exothermic reaction	A01	B01	C01	D01	E01	F01
Internal aggravating causes	A02			D02	E02	
Over concentration	A03				E03	F03
Intrusive activity	A04	B04		D04	E04	F04
Non-specific / Multiple external events or phenomena / Other	A05		C05	D05	E05	F05
Error in transfer / Backflow / Overflow / Filling DST annulus	A06	B06	C06	D06	E06	F06
Ventilation failure		B07	C07	D07	E07	F07
Internal buildup of flammable gas / Internal ignition source		B08				F08
External fire / External ignition source		B09		D09		F09
Excess weight / Dropping / Heavy snow			C10	D10	E10	F10
Vacuum			C11	D11		
Structural degradation / Leak		B12	C12	D12		F12
Over rated equipment			C13		E13	
Confinement failure				D14	E14	F14
Excess agitation					E15	
Corrosion				D16		
Water hammer				D17		
Seismic event / Volcanic activity				D18		
Flooding, pipe failure			C19	D19		
High winds / Tornados / Hail				D20		
Lightning		B21		D21		
Excavation				D22		F22
Aircraft crash		B23		D23		
Low temperature / Freezing				D24		
Vehicle accidents		B25		D25	E25	F25
Structural Damage		B26	C26	D26	E26	F26

Table 2.5-1. Risk Guidelines.*

Event frequency category	Event frequency (yr^{-1})	Onsite	Offsite
Radiological risk guidelines			
		Effective dose equivalent (rem)	
Anticipated	$>10^{-2}$ to 10^{0}	.5	.1
Unlikely	$>10^{-4}$ to $\leq 10^{-2}$	5	.5
Extremely unlikely	$>10^{-6}$ to $\leq 10^{-4}$	10	4
Toxic chemical risk guidelines			
		Primary concentration guidelines	
Anticipated	$>10^{-2}$ to 10^{0}	$\leq$ ERPG-1	$\leq$ PEL-TWA
Unlikely	$>10^{-4}$ to $\leq 10^{-2}$	$\leq$ ERPG-2	$\leq$ ERPG-1
Extremely unlikely	$>10^{-6}$ to $\leq 10^{-4}$	$\leq$ ERPG-3	$\leq$ ERPG-2

*Source: Bacon, R. F., 1996, Tank Waste Remediation System Accident Analysis Risk Evaluation Guidelines (Letter 9651709 to J. E. Kinzer, U.S. Department of Energy, Richland Operations Office, April 22), Westinghouse Hanford Company, Richland, Washington.

ERPG = emergency response planning guideline.
PEL = permissible exposure limit.
TWA = time-weighted average.

Table 2.7-1. General Material At Risk Categories.

Material at risk for contents	1. Tank contents
	2. Tank headspace
	3. Rail or truck tanker contents
	4. Ventilation filter contents
	5. Contents of pipeline and/or source tank during transfer
	6. Contents of sump or encasement
Material at risk for contamination	7. Contamination in ventilation system
	8. Contamination in pit of box
	9. Contamination on vehicle
	10. Contamination on equipment or tools

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Table 3.1-1

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
Abreviation List: BND - Bonding, CDP - Cribs, Ditches and Ponds CVR - Coverblock Installation and Removal 90D - 90 Day Storage Pad (209E Storage Area) EE - External Events GRN -Greenhouse or Confinement Construction and Removal ITK -In-Tank Equipment Installation, Operation, and Removal OGT - Overground Transfer RAD - Radiological Monitoring and Surveys SFF - Sniffing (gas monitoring) VEH - Vehicle Operations W058 - Project W058 New Cross Site Transfer		CCF - Common Cause Failure COB - Clean Out Boxes CRN - Crane Operations DCN - Decontamination FR - Flex Recievers HAZOP - Hazard and Operability Study NP - Natural Phenomena PHA - Preliminary Hazard Analysis RSR - Riser Access (and possible asbestos removal) TSF - Tank Farm Waste Transfer Syphoning Events VSU - Vertical Storage Units XS - Cross Site Transfer	
241-A TANK FARM			
216-A-08C	Crib	PHA: CDP	CDP
216-A-08S	Sample pit	HAZOP: AW-102, SY-102	102AW, XS
216-A-28	Crib	PHA: CDP	CDP
216-A-30	Crib	PHA: CDP	CDP
216-A-36A	Crib	PHA: CDP	CDP
216-A-36B	Crib	PHA: CDP	CDP
216-A-37-1	Crib	PHA: CDP	CDP
216-A-37-2	Crib	PHA: CDP	CDP
216-A-39	Crib	PHA: CDP	CDP
216-A-45	Crib	PHA: CDP	CDP
241-A-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-A-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-A-COB	Cleanout box	PHA: COB	COB
241-A-101	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-A-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-A-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-A-104	Single shell tank, high heat load	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-A-105	Single shell tank, high heat load	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-A-106	Single shell tank, high heat load	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-A-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-A-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-A-302-A	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, PUREX PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF, I-PUREX
241-A-350	DCRT Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-S, PFP, PUREX, T Plant, Siphoning, Overground Transfers PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242S,, I-PFP, I-PUREX, I-TPLANT, TSF, OGT
241-A-417	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,PUREX PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF, I-PUREX
241-AN TANK FARM			
241-AN-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AN-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AN-COB-1	Cleanout box	PHA: COB	COB
241-AN-COB-2	Cleanout box	PHA: COB	COB
241-AN-COB-3	Cleanout box	PHA: COB	COB
241-AN-COB-4	Cleanout box	PHA: COB	COB
241-AN-COB-5	Cleanout box	PHA: COB	COB
241-AN-COB-6	Cleanout box	PHA: COB	COB
241-AN-COB-7	Cleanout box	PHA: COB	COB

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AN-COB-8	Cleanout box	PHA: COB	COB
241-AN-101	Double shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-102	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-103	Double shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-104	Double shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-105	Double shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-106	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AN-107	Double shell tank, air lift circulators, caustic, active transfer/mixer pumps, active ventilation	HAZOP: AN-107, AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	107AN, 102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP TANK FARM			
241-AP-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AP-101	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AP-102	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-103	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-104	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-105	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-106	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-107	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AP-108	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW TANK FARM			
241-AW-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AW-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AW-COB-01	Cleanout box	PHA: COB	COB
241-AW-COB-02	Cleanout box	PHA: COB	COB
241-AW-COB-03	Cleanout box	PHA: COB	COB
241-AW-COB-04	Cleanout box	PHA: COB	COB
241-AW-COB-05	Cleanout box	PHA: COB	COB
241-AW-COB-06	Cleanout box	PHA: COB	COB
241-AW-COB-07	Cleanout box	PHA: COB	COB

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AW-COB-08	Cleanout box	PHA: COB	COB
241-AW-COB-09	Cleanout box	PHA: COB	COB
241-AW-COB-10	Cleanout box	PHA: COB	COB
241-AW-COB-11	Cleanout box	PHA: COB	COB
241-AW-COB-12	Cleanout box	PHA: COB	COB
241-AW-101	Double shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW-102	Double shell tank, air lift circulators, evaporator feed, active transfer/mixer pumps, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW-103	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW-104	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW-105	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AW-106	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AX TANK FARM			
241-AX-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AX-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AX-COB	Cleanout box	PHA: COB	COB

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AX-101	Single shell tank, flammable gas	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-AX-102	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-AX-103	Single shell tank, flammable gas	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-AX-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-AX-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AX-152	Diverter station	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR,EE, CCF
241-AX-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AX-155	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AX-501	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AY TANK FARM			
241-AY-1	Cleanout box	PHA: COB	COB
241-AY-101	Double shell tank, air lift circulators, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AY-102	Double shell tank, air lift circulators, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AY-151	Pumpout pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AY-152	Valve box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AY-501	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AZ TANK FARM			
241-AZ-COB-01	Cleanout box	PHA: COB	COB
241-AZ-COB-02	Cleanout box	PHA: COB	COB
241-AZ-COB-03	Cleanout box	PHA: COB	COB
241-AZ-COB-04	Cleanout box	PHA: COB	COB
241-AZ-COB-05	Cleanout box	PHA: COB	COB
241-AZ-COB-06	Cleanout box	PHA: COB	COB
241-AZ-COB-07	Cleanout box	PHA: COB	COB
241-AZ-COB-08	Cleanout box	PHA: COB	COB
241-AZ-COB-09	Cleanout box	PHA: COB	COB
241-AZ-COB-10	Cleanout box	PHA: COB	COB
241-AZ-101	Double shell tank, air lift circulators, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AZ-102	Double shell tank, air lift circulators, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-AZ-151	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-AZ-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-AZ-153	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AZ-154	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-AZ-155	Contaminated storage pit	HAZOP: AW-102, SY-102	102AW, XS
241-AZ-161	Check valve caisson	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AZ-162	Check valve caisson	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-AZ-562	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B TANK FARM			
216-B-3	Pond (B pond)	PHA: CDP	CDP
216-B-55	Crib	PHA: CDP	CDP
216-B-62	Crib	PHA: CDP	CDP
216-B-63	Ditch	PHA: CDP	CDP
241-B-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-103	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-105	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-B-107	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-108	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-111	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B-201	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-202	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-203	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-B-204	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
242-B-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-B-252	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BX TANK FARM			
241-BX-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-105	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-107	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-108	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-111	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BX-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-BXR-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BXR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BXR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BY TANK FARM			
241-BY-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-103	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-104	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-105	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-106	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-107	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-108	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-110	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BY-111	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-BY-112	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-BYR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BYR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BYR-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-BYR-155	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-C TANK FARM			
241-C-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-105	Single shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-106	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-107	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-108	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-C-109	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-111	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-112	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-C-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-C-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-C-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-C-201	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-202	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-203	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-204	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-C-252	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S TANK FARM			
216-S-25	Crib	PHA: CDP	CDP

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
216-S-26	Crib	PHA: CDP	CDP
241-S-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-C	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-D	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-VSU	Vertical Storage Units	PHA: VSU	VSU
241-S-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-102	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-105	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-107	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-108	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-S-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-111	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-S-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-S-304	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-SX TANK FARM			
241-SX-101	Single shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-102	Single shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-103	Single shell tank, flammable gas, organics, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-104	Single shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-SX-105	Single shell tank, flammable gas, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-106	Single shell tank, flammable gas, organics, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-107	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-108	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-109	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-110	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-111	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-112	Single shell tank, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-113	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-114	Single shell tank, dry crust, high heat load, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-SX-115	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-SX-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SX-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SX-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SX-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SY TANK FARM			
241-SY-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SY-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-SY-COB-1	Cleanout box	PHA: COB	COB
241-SY-COB-2	Cleanout box	PHA: COB	COB
241-SY-COB-3	Cleanout box	PHA: COB	COB
241-SY-COB-4	Cleanout box	PHA: COB	COB
241-SY-COB-5	Cleanout box	PHA: COB	COB
241-SY-COB-6	Cleanout box	PHA: COB	COB
241-SY-101	Double shell tank, flammable gas, active transfer/mixer pumps, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-SY-102	Double shell tank, active transfer/mixer pumps, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-SY-103	Double shell tank, active ventilation	HAZOP: AW-102, C-106, S-102, SX-114, SY-102,222-S, 242-A, 242-S, AW-102, PFP, PUREX, B Plant, T Plant PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-222S, I-242A, I-242S, 102AW, I-PFP, I-PUREX, I-BPLANT, I-TPLANT
241-T TANK FARM			
216-T-1	Ditch	PHA: CDP	CDP
216-T-32	Crib	PHA: CDP	CDP
216-T-4-2	Ditch	PHA: CDP	CDP
216-T-7	Crib	PHA: CDP	CDP
240-T-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
240-T-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
240-T-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
240-T-252	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
240-TR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
240-TR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-T-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-T-105	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-107	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-108	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-110	Single shell tank, flammable gas	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-111	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-T-201	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-202	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-203	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-T-204	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX TANK FARM			
241-TX-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-TX-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-103	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-105	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-107	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-108	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-109	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-111	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-113	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-114	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-115	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-116	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-TX-117	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-118	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TX-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TX-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TX-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TX-155	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TXR-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TXR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TXR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-TX-302C	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-TY TANK FARM			
241-TY-101	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TY-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TY-103	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-TY-104	Single shell tank, ferrocyanide	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TY-105	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-TY-106	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U TANK FARM			
216-U-12	Crib	PHA: CDP	CDP
216-U-14	Ditch	PHA: CDP	CDP
216-U-17	Crib	PHA: CDP	CDP
241-U-A	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-B	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-C	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-D	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-101	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-102	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-103	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-104	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-U-105	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-106	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-107	Single shell tank, flammable gas, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-108	Single shell tank, flammable gas	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-109	Single shell tank, flammable gas	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-110	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-111	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-112	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-201	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-U-202	Single shell tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-203	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-204	Single shell tank, organics	HAZOP: AW-102, C-106, S-102, SX-114, SY-102, 242-T, Overground Transfers PHA: AZ-102/BX-109/SY-101/ITK WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF,I-242T,OGT
241-U-252	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-U-301B	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-UR-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-UR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-UR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-UR-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-UX-154	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-UX-302A	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
DCRTs, CATCH TANKS, CATCH STATIONS, AND LIFT STATIONS			
244-A	DCRT catch station	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
244-BX	DCRT catch station	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
244-CR	DCRT catch station	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
244-S	DCRT catch station	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
244-TX	DCRT catch station	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
244-U	DCRT catch station	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
MISCELLANEOUS DIVERSION BOXES, CAISSONS, VENT STATIONS			
241-AR-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-CR-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-CR-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-CR-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-ER-151	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-ER-152	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-ER-153	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
241-ER-311	Catch tank	HAZOP: AW-102, C-106, S-102, SX-114, SY-102 PHA: AZ-102/BX-109/SY-101 WHAT IF: CCF, EE	102AW, 106C, 102S, 114SX, XS, BND, CRN, ITK, RAD, VEH, EE, CCF
241-EW-151	Vent station	HAZOP: XS	XS
241-F-505	Diverter caisson	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
241-F-562	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
MISCELLANEOUS FACILITIES			
Located in each tank farm	Caisson	HAZOP: AW-102, SY-102	102AW, XS
Located in each tank farm	Catch tank pit	HAZOP: AW-102, SY-102	102AW, XS
Located in each tank farm	Cleanout box	PHA: COB	COB
Located in each tank farm	Diversion box	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
Located in each tank farm	Diverter station	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
Located in each tank farm	Flush pit	HAZOP: AW-102, SY-102	102AW, XS
Located in each tank farm	Leak detection pit	HAZOP: AW-102, SY-102	102AW, XS
Located in each tank farm	Pump pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
Located in each tank farm	Service pit	HAZOP: AW-102, SY-102	102AW, XS
Located in each tank farm	Sluice transfer box	PHA: COB	COB
Located in each tank farm	Valve pit	HAZOP: 222-S, 242-A, 242-S, 242-T, AW-102, C-106, S-102, SX-114, SY-102, B Plant, T Plant, U Plant, PFP, PUREX, Overground Transfers PHA: AZ-102/BX-109/SY-101	I-222S, I-242A, I-242S, I-242T, 102AW, 106C, 102S, 114SX, W058, XS, I-BPLANT, I-UPLANT, I-TPLANT, I-PFP, I-PUREX, OGT, CVR
Located in various tank farms	Vertical Storage units	PHA: VSU	VSU

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
Located in various tank farms	MISF-Miscellaneous inactive storage facilities (includes inactive underground storage facilities and other inactive facilities)	PHA: MISF	-I (Identifier ends in -I, e.g., CRN-05-I)
Overground Transfer Line	Portable Overground Transfer Line	HAZOP: Overground Transfers	OGT
PFP Pond	Pond	PHA: CDP	CDP
Vertical Storage Units	12" - 20' in depth	PHA: VSU	VSU
209-E	90 day storage pad	PHA: 209E	90D
216-Z-20	Crib	PHA: CDP	CDP
216-Z-21	Pond	PHA: CDP	CDP
241-AR-204	Railcar/truck recieving facility	HAZOP: 204AR	204AR
241-AR-244	Vault	HAZOP: 244AR PHA: 244AR	244AR, 244AR-PH
2727-W	Sodium storage bldg	PHA: 2727W	2727W
PIPING			
Double Encased Piping	Transfer Line Piping	HAZOP: 242-A, 242-S, AW-102, PFP, SY-102 WHAT IF: EE	I-242A, I-242S, 102AW, I-PFP, W058, XS, EE
Secondary Containment Piping	Transfer Line Piping	HAZOP: 222-S, PUREX, SY-102/XS, B Plant, T Plant, U Plant	I-222S, I-PUREX, XS, I-BPLANT, I-TPLANT, I-UPLANT
Single Encased Piping	Transfer Line Piping	HAZOP: AN-107, S-102, SY-102	107AN, 102S, XS
SATELLITE ACCUMULATION AREAS			
A Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
AN Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D

Table 3.1-1. Applicable Hazard Evaluations for TWRS Facilities.

Facility Name	Facility Type	Applicable Hazard Evaluation	Hazard Evaluation Identifier
AP Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
AW Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
AX Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
AY Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
B Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
C Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
S Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
T Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
TX Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D
U Satellite Accumulation Area	Satellite Accumulation Area	PHA: 209E	90D

Table 3.1-2

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
216-A-08	Crib	Contamination in Pit or Box	Crib, sample pit and weir pit 216-A-08	Residual contamination	Control structure #1: 9 Kgal Control structure #2: 19 Kgal Sampler pit#1: 3.8 Kgal Sampler pit#2 8 Kgal	NA	Residue	Unknown	No
216-A-30	Crib	Contamination in Pit or Box	Crib 216-A-30	Residual contamination	NA	NA	Residue	Unknown	No
216-A-36B	Crib	Contamination in Pit or Box	Crib 216-A-36B	Residual contamination	NA	NA	Residue	Unknown	No
216-A-37-1	Crib	Contamination in Pit or Box	Crib 216-A-37-1	Residual contamination	NA	NA	Residue	Unknown	No
216-A-37-2	Crib	Contamination in Pit or Box	Crib 216-37-2	Residual contamination	NA	NA	Residue	Unknown	No
216-A-45	Crib	Contamination in Pit or Box	Crib 216-A-45	Residual contamination	NA	NA	Residue	Unknown	No
216-B-55	Crib	Other	Crib 216-B-55	NA	NA	NA	NA	NA	NA
216-B-62	Crib	Other	Crib 216-B-62	NA	NA	NA	NA	NA	NA
216-S-25	Crib	Tank Contents	Crib 216-S-25	NA	NA	NA	NA	NA	NA
216-S-26	Crib	Tank Contents	Crib 216-S-26	NA	NA	NA	NA	NA	NA
216-U-12	Crib	Other	216-U-12 Crib	NA	NA	NA	NA	NA	NA
216-U-17	Crib	Other	216-U-17 Crib	NA	NA	NA	NA	NA	NA
216-Z-20	Crib	Crib	216-Z-20	NA	NA	NA	NA	NA	NA
216-B-63	Ditch	Other	Ditch 216-B-63	NA	NA	NA	NA	NA	NA
216-T-1	Ditch	Other	216-T-1 Ditch	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
216-T-4-2	Ditch	Other	216-T-4-2 Ditch	NA	NA	NA	NA	NA	NA
216-U-14	Ditch	Other	216-U-14 Ditch	NA	NA	NA	NA	NA	NA
216-Z-21	Pond	Crib	216-Z-21	NA	NA	NA	NA	NA	NA
PFP Pond	Pond	Pond	PFP Pond	NA	NA	NA	NA	NA	NA
216-B-3	Pond (B pond)	Other	Pond 216-B-3	NA	NA	NA	liquid	NA	yes
AR-204	Railcar/ truck receiving	Rail or Truck Tanker Contents	Railroad tank car	pH between 7-14, chloride <0.01 M, no separable organic phase, <0.01 g/gal fissile material	20,000 gal	NA	liquid	up to 20,000 gal*	no
AR-204	Railcar/ truck receiving	Rail or Truck Tanker Contents	Tank trailer	pH between 7-14, chloride <0.035 M, no separable organic phase, <0.01 g/gal fissile material	5,000 gal	NA	liquid	up to 5,000 gal*	no
AR-204	Railcar/ truck receiving	Tank Contents	Tank 1 - Catch tank	same mati as tank car or tank trailer or chemical make-up solutions identified below	1,500 gal	NA	liquid	500 gal	no
AR-204	Railcar/ truck receiving	Tank Contents	Tank 2 - Chemical make-up	1 lb/gal sodium nitrite solution	500 gal	NA	liquid	120 gal	no
AR-204	Railcar/ truck receiving	Tank Contents	Tank 3 - Chemical make-up	5.4 M caustic	500 gal	NA	liquid	80 gal	no

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
AR-204	Railcar/ truck receiving	Tank Contents	Tank 4 - Chemical make-up	high pH buffer solution (sodium hydroxide and sodium phosphate)	200 gal	NA	liquid	0	no
AR-204	Railcar/ truck receiving	Tank Contents	Tank 5 - Chemical make-up	50% sodium hydroxide	1800 gal	NA	liquid	0 gal residual	no
AR-204	Railcar/ truck receiving	Tank Contents	Underground storage tank	diesel fuel	550 gal	NA	liquid	550 gal	no
AR-204	Railcar/ truck receiving	Tank Headspace	Catch tank	NA	NA	NA	NA	NA	NA
AR-204	Railcar/ truck receiving	Tank Headspace	Tank 2 - Chemical make-up	NA	NA	NA	NA	NA	NA
AR-204	Railcar/ truck receiving	Tank Headspace	Tank 3 - Chemical make-up	NA	NA	NA	NA	NA	NA
AR-204	Railcar/ truck receiving	Tank Headspace	Tank 4 - Chemical make-up	NA	NA	NA	NA	NA	NA
AR-204	Railcar/ truck receiving	Tank Headspace	Tank 5 - Chemical make-up	NA	NA	NA	NA	NA	NA
AR-204	Railcar/ truck receiving	Tank Headspace	Underground storage tank	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
213 Compactor Bldg	Compactor 583 ft2	Contamination in Pit or Box	IMUST pit	looked empty	about 240 gal (4' x 4' x 2'?)	NA	NA	looked empty, no warnings of contaminatio n	no
213 Compactor Bldg	Compactor 583 ft2	Contamination on Equipment or Tools	possibly contaminated instruments	NA	small shelf in work room, all <100 mR/hr	NA	residue	<100 mH/hr	yes*
213 Compactor Bldg	Compactor 583 ft2	Contents of Pipeline and/or Source Tank During Transfer	NA	NA	NA	NA	NA	NA	NA
213 Compactor Bldg	Compactor 583 ft2	Other	Asphalt emulsion cleaner	cleaning compound	55 gal drum	NA	NA	Unknown, up to 55 gallons	yes
213 Compactor Bldg	Compactor 583 ft2	Other	Chemical cleaners, degreasers*	solvent cleaners	small quantities, <1 gal	NA	liquid	none during walkdown*	yes
213 Compactor Bldg	Compactor 583 ft2	Tank Contents	213-W-TK-1	Believed to be rainwater	1875 gal	NA	liquid	1875	no
213 Compactor Bldg	Compactor 583 ft2	Tank Headspace	213-W-TK-1	NA	NA	NA	NA	0 gal (tank believed to be full of rainwater)	NA
213 Compactor Bldg	Compactor 583 ft2	Ventilation Filter Contents	HEPA filters for 213-W bldg. ventilation	NA	1 R/hr at six inches	NA	residue	NA	yes
213 Compactor Bldg	Compactor 583 ft2	Ventilation Filter Contents	breather filter for IMUST (213-W-TK-1)	NA	1 R/hr at six inches	NA	residue	NA	yes
AR-244	Vault	Contamination In Ventilation System	De-entrainers	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
AR-244	Vault	Contamination In Ventilation System	Seal pot	process condensate	100 gal (2' dia x 4'-1")	NA	liquid	unknown*	no
AR-244	Vault	Contamination in Pit or Box	Valve pit	residual contamination*	1300 gal (4'-6" dia x 11')	NA	residue	NA	no
AR-244	Vault	Contents of Sump or Encasement	Vault cell sumps	NA	25 gal (18" x 18" x 18") estimated from H-2-58790	NA	liquid	2400 gal in cell 3* about 15 gal in cell 1 (wt factor reading of 23) and about 2 gal in cell 2 (wt. factor reading of 3)	no
AR-244	Vault	Tank Contents	244-AR-001	unknown*	46,400 gal (20' dia x 19'-9")	NA	liquid	2300 gal	no
AR-244	Vault	Tank Contents	244-AR-002	strontium sludge from tank 104-AX and flush water	46,400 gal (20' dia x 19'-9")	liquid and sludge	liquid and solid	23,000 gal total, believed to be 600 gal of sludge, remainder = liquid Activity of 200 Ci/gal for the sludge calculated in ref d2, (196 Ci/gal Sr90 and 3.22 Ci/gal Cs137)	no
AR-244	Vault	Tank Contents	244-AR-003	unknown*	4700 gal (9'-6" dia x 9')	NA	liquid	2000 gal	no
AR-244	Vault	Tank Contents	244-AR-004	unknown*	4700 gal (9'-6" dia x 9')	NA	liquid	<300 gal	no

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
AR-244	Vault	Tank Contents	Underground fuel tank	diesel fuel	550 gal	NA	liquid	525 gal	no
AR-244	Vault	Tank Headspace	244-AR-001	No hydrogen or organics	NA	NA	vapor	about 44,100 gal (capacity - contents) activity unknown	no
AR-244	Vault	Tank Headspace	244-AR-002	0.222 mole % hydrogen	NA	NA	vapor	about 23,400 gal (capacity - contents) activity unknown	no
AR-244	Vault	Tank Headspace	244-AR-003	No hydrogen or organics	NA	NA	vapor	about 2700 gal (capacity - contents) activity unknown	no
AR-244	Vault	Tank Headspace	244-AR-004	No hydrogen or organics	NA	NA	vapor	about 4400 gal (capacity - contents) activity unknown	no
216-BY-201	IMUST rad contaminated	Tank Contents	216-BY-201 IMUST	See comments	Unknown	Unknown	Unknown	Unknown	No
216-BY-201	IMUST rad contaminated	Tank Headspace	216-BY-201	Unknown	NA	Unknown	vapor	Unknown	no

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
216-TY-201	IMUST rad contaminated	Tank Contents	216-TY-201 (IMUST)	NA	19,200 gal (g)	No data	No data	No data	No data
216-TY-201	IMUST rad contaminated	Tank Headspace	216-TY-201 (IMUST)	NA	NA	NA	Vapor	19,200 gal (g)	No
240-S-302	IMUST rad contaminated	Tank Contents	IMUST 240-S-302	no data	17684 gal	no data	no data	2276 gallons total waste	No
240-S-302	IMUST rad contaminated	Tank Headspace	IMUST 240-S-302	NA	NA	NA	Vapor	17684 gal	No
241-AX-151	IMUST rad contaminated	Contamination in Pit or Box	Diverter station AX-151	Residual contamination	31.9 K gal	NA	Residue	Unknown	No
241-B-301B	IMUST rad contaminated	Tank Contents	241-B-301B IMUST	pH = 8.5 T 4.77 x10-3 grams/gal Pu <6.58 x10-8 grams/gal U 1.77 x 10-5 lbs, gal T 9.01 x 102 Cs137 1.14 x 104μCi/gal in supernate Pu 6.58 x 10-7 g/gal in supernate	36,000 g	supernate and solid	Liquid and solids	590 gal liquid 21,660 gal solids	No
241-B-301B	IMUST rad contaminated	Tank Headspace	241-B-301B	NA	NA	NA	vapor	13750 gal Unknown composition	No
241-B-302B	IMUST rad contaminated	Tank Contents	241-B-302B IMUST	B plant waste	17,684 g	supernatant and sludge	liquid and solids	4240 gal liquid 690 gal sludge	No
241-B-302B	IMUST rad contaminated	Tank Headspace	241-B-302B	NA	NA	NA	vapor	12754 gal Unknown composition	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-BX-302A	IMUST rad contaminated	Tank Contents	241-BX-302A IMUST	drainage from diversion boxes BR-152, BX-153, BYR-152, and BXR-152 Sr90-solids 7190 μCi/gal Sr90-supernatant 719 μCi/gal Cs137-supernatant 358 μCi/gal Pu - supernate 6.55 x 10-8 g/L	17684 g	NA	solid	835 gal solids	No
241-BX-302A	IMUST rad contaminated	Tank Headspace	241-BX-302A IMUST	NA	NA	NA	vapor	16849 gal unknown composition	No
241-BX-302B	IMUST rad contaminated	Tank Contents	241-BX-302B IMUST	drainage from BX-154 diversion box	11389 g	supernatant and solids	liquid and solid	94 gal liquid and 950 gal solid	No
241-BX-302B	IMUST rad contaminated	Tank Headspace	241-BX-302B IMUST	NA	NA	NA	vapor	10345 gal unknown composition	No
241-BX-302C	IMUST rad contaminated	Tank Contents	241-BX-302C IMUST	drainage from BX-155 diversion box	11378 g	supernatant and solids	liquid and solid	635 gal solids and 228 gal liquid	No
241-BX-302C	IMUST rad contaminated	Tank Headspace	241-BX-302C IMUST	NA	NA	NA	vapor	10515 gal unknown composition	No
241-BXR-001	IMUST rad contaminated	Tank Contents	244-BXR-001 IMUST	Metal waste slurry Sr90-solids 348220 μCi/gal Sr90-supernatant 34822 μCi/gal Cs137-supernatant 38229 μCi/gal	50,000 g	supernatant and solids	liquid and solid	7215 gal solids	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-BXR-002	IMUST rad contaminated	Tank Contents	244-BXR-002 IMUST	Slurry from 244-BXR-001 mixed w/nitric acid Sr90-solids 38270 μCi/gal Sr90-supernatant 3827 μCi/gal Cs137-supernatant 1964 μCi/gal	15,000 g	supernatant and solids	liquid and solid	380 gal liquid and 1805 gal solids	No
241-BXR-003	IMUST rad contaminated	Tank Contents	244-BXR-003 IMUST	Slurry from 244-BXR-001 mixed w/nitric acid Sr90-solids 3174480 μCi/gal Sr90-supernatant 317448 μCi/gal Cs137-supernatant 22824 μCi/gal	15,000 g	supernatant and solids	liquid and solid	356 gal liquid and 1449 gal solids	No
241-BXR-011	IMUST rad contaminated	Tank Contents	244-BXR-011 IMUST	acid solutions from 244-BXR-002 and 244-BXR-003 Sr90-solids 183673 μCi/gal Sr90-supernatant 18367 μCi/gal Cs137-solids 72795 μCi/gal Cs137-supernatant 727950 μCi/gal Pu -solids 3.78 x 10-7 g/g @ 0.564 g/mL	50,000 g	supernatant and solids	liquid and solid	98 gal liquid and 7020 gal solids	No
241-BXR-011	IMUST rad contaminated	Tank Headspace	244-BXR-011 IMUST	NA	NA	NA	vapor	42882 gal unknown composition	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-C-301C	IMUST rad contaminated	Tank Contents	241-C-301C IMUST	pH 9.3, T 6.09 x 102, Pu <6.58 g/gal, U 5.0 x 10-4 lbs/gal, T 1.7 x 103 μCi/gal, Cs134 1.47 x 102 μCi/gal Cs137-super 2.55 x 104 μCi/gal Sr90-solids 17000 μCi/gal Sr90-super. 1700 μCi/gal Pu-super. 6.58 x 10-7 g/gal	36 kgal	supernatant and sludge	liquid and solid	1470 gal liquid 9016 gal solid	No
241-C-301C	IMUST rad contaminated	Tank Headspace	241-C-301C IMUST	NA	NA	NA	vapor	22514 gal Unknown composition	No
241-ER-311A	IMUST rad contaminated	Tank Contents	241-ER-311	Process condensate and flush water from diversion box 241-ER-151 and 241-ER-152(from B Plant and B tank farm)	22,000 gal (10′ diameter x 37′ long)	NA	Liquid	4911 gal	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-ER-311A	IMUST rad contaminated	Tank Headspace	241-ER-311	NA	NA	NA	vapor	NA	No
241-S-302A	IMUST rad contaminated	Tank Headspace	IMUST 241-S-302A	NA	NA	NA	Vapor	17684gal	No
241-S-302B	IMUST rad contaminated	Tank Headspace	IMUST 241-S-302B	NA	NA	NA	Vapor	14314gal	No
241-SX-302	IMUST rad contaminated	Tank Contents	IMUST 241-SX-302	CPLX, DSSF, NCPLX	17684 gal	NA	Solid Supernate	1050 gal 305 gal	No
241-SX-302	IMUST rad contaminated	Tank Headspace	IMUST 241-SX-302	NA	NA	NA	Vapor	16329 gal	No
241-T-301	IMUST rad contaminated	Tank Contents	IMUST 241-T-301	Supernate 6.58E-07 g/gal Pu 1600 μCi/gal Cs137 304 μCi/gal Sr90 Solids 3040 μCi/gal Sr90	36000 gal	NA	Solid Supernate	21658 gal 588 gal	No
241-T-301	IMUST rad contaminated	Tank Headspace	IMUST 241-T-301	NA	NA	NA	Vapor	13754 gal	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-TX-001	IMUST rad contaminated	Tank Contents	244-TX-001 IMUST	Cs 137 Supernate 16995μCi/gal	50000	NA	Solids Supernate	2291 gal 49 gal	No
241-TX-001	IMUST rad contaminated	Tank Headspace	244-TX-001 IMUST	NA	NA	NA	Vapor	47660 gal *	No
241-TX-002	IMUST rad contaminated	Tank Contents	244-TX-002 IMUST	Cs 137 Supernate 83270μCi/gal Pu Supernate 0.72 μg/L	15000	NA	Solids	2945 gal	No
241-TX-002	IMUST rad contaminated	Tank Headspace	244-TX-002 IMUST	NA	NA	NA	Vapor	12055 gal *	No
241-TX-003	IMUST rad contaminated	Tank Contents	244-TX-003 IMUST	NA	15000	NA	Solids	6460 gal	No
241-TX-003	IMUST rad contaminated	Tank Headspace	244-TX-003 IMUST	NA	NA	NA	Vapor	8540 gal *	No
241-TX-302A	IMUST rad contaminated	Tank Contents	241-TX-302A IMUST	Cs 137 Supernate 48μCi/gal	17684	NA	Solids Supernate	2450 gal 30 gal	No
241-TX-302A	IMUST rad contaminated	Tank Headspace	241-TX-302A IMUST	NA	NA	NA	Vapor	15204 gal *	No
241-TX-302B(R)	IMUST rad contaminated	Tank Contents	241-TX-302B(R) IMUST	NA	12000	NA	No data	0 gal	No
241-TX-302B(R)	IMUST rad contaminated	Tank Headspace	241-TX-302B(R) IMUST	NA	NA	NA	Vapor	12000 gal *	No
241-TX-302X	IMUST rad contaminated	Tank Contents	241-TX-302X IMUST	NA	14314	NA	Solids Supernate	108 gal 245 gal	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-TX-302X	IMUST rad contaminated	Tank Headspace	241-TX-302X IMUST	NA	NA	NA	Vapor	13961 gal	No
241-TY-302A	IMUST rad contaminated	Tank Contents	241-TY-302A (IMUST)	NA	17,684 gal (c)	Sludge (c)	Solid (c)	450 gal (c)	No
241-TY-302A	IMUST rad contaminated	Tank Headspace	241-TY-302A (IMUST)	NA	NA	NA	Vapor	17,234 gal (c)	No
241-TY-302B	IMUST rad contaminated	Tank Contents	241-TY-302B (IMUST)	NA	14,314 gal (c)	NA	NA	0 gal (c)	No
241-TY-302B	IMUST rad contaminated	Tank Headspace	241-TY-302B (IMUST)	NA	NA	NA	Vapor	14,314 gal (c)	No
242-T-135	IMUST rad contaminated	Tank Contents	IMUST 242-T-135	No data	Unknown	No data	NA	NA	NA
242-TA-R1	IMUST rad contaminated	Tank Contents	242-TA-R1 IMUST	No data *	No data	NA	No data	No data	No
242-TA-R1	IMUST rad contaminated	Tank Headspace	242-TA-R1 IMUST	NA	NA	NA	Vapor	Unknown	No
209-E	90 day storage pad	Tank Contents	None	NA	NA	NA	NA	NA	NA
209-E	90 day storage pad	Tank Headspace	NA	NA	NA	NA	NA	NA	NA
A Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area for 244-A	RCRA mixed waste	6 - 55 gallon mixed waste drums (maximum)	Soil, HEPA filters, misc. RMW wastes	Solid	Low Level (less than class C)	Yes

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
AN Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA Mixed Waste	6 55gal mixed waste drums (maximum)	Soil, paint waste, tank contacted, mask cartridges, HEPA filters, misc. RMW wastes	Solid	Low level (less than class C)	Yes
AP Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area (c)	RCRA Mixed Wastes	6- 55 gallon mixed waste drums (maximun)	soil, paint waste, tank contacted, mask cartridges, HEPA filters, misc.RMW wastes	Solid	Low Level (less than class C)	Yes
AW Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA mixed waste	6 - 55 gallon mixed waste drums (maximum)	Soil, tank contacted, HEPA filters, misc. RMW wastes	Solid	Low Level (less than class C)	Yes
AX Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA mixed waste	Six 55 gal mixed waste drums	Soil, tank contacted, HEPA filters, misc. RMW wastes	Solid	Low Level (less than class C)	Yes
AY Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA mixed waste	6 - 55 gallon mixed waste drums (maximum)	Soil, tank contacted, HEPA filters, misc. RMW wastes	Solid	Low Level (less than class C)	Yes
B Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA mixed waste	Six 55 gallon mixed waste drums (maximum)	soil, paint waste, tank contacted, mask cartridges, HEPA filters, misc. mixed wastes possible	solid	low level (less than class C)	yes

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
C Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite accumulation area	RCRA mixed waste	Six 55 gallon mixed waste drums (maximum)	soil, paint waste, tank contacted, mask cartridges, HEPA filters, misc. mixed wastes possible	solid	low level (less than class C)	yes
S Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite Accumulation Area	RCRA Mixed Wastes	6 - 55 gal mixed waste drums (maximum)	NA	Solid	Low level (less than class C).	Yes
T Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite Accumulation Area	RCRA mixed waste	6 - 55 gal drums maximum storage	NA	NA	NA	NA
TX Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite Accumulation Area	RCRA Mixed Wastes	6 -55 gal mixed waste drums (maximum)	NA	Solid	Low level (less than class C]	Yes

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
U Satellite Accumulation Area	Satellite Accumulation Area	Other	Satellite Accumulation Area	RCRA Mixed Wastes	6 - 55 gal mixed waste drums (maximum)	NA	solid	Low level (less than class C)	yes
2727-W	Sodium storage bldg	Tank Contents	Tank 1	Sodium	about 15,000 gal (12' dia x 21'-3" with dished head)	NA	solid	300 gal heel	no
2727-W	Sodium storage bldg	Tank Contents	Tank 2	Sodium	about 15,000 gal (12' dia x 21'-3" with dished head)	NA	solid	300 gal heel	no
2727-W	Sodium storage bldg	Tank Contents	Tank 3	Sodium	about 15,000 gal (12' dia x 21'-3" with dished head)	NA	solid	7500 gal (half full)	no
2727-W	Sodium storage bldg	Tank Contents	Tank 4	Sodium	about 15,000 gal (12' dia x 21'-3" with dished head)	NA	solid	15000 gal (full) 50,855 kg see for activity information	no
2727-W	Sodium storage bldg	Tank Contents	Tank 5	Sodium	about 15,000 gal (12' dia x 21'-3" with dished head)	NA	solid	15000 gal (full) 48,828 kg see for activity information	no
2727-W	Sodium storage bldg	Tank Headspace	Tank 1	Nitrogen	NA	NA	vapor	14700 gal (capacity - contents)	no
2727-W	Sodium storage bldg	Tank Headspace	Tank 2	Nitrogen	NA	NA	vapor	14700 gal (capacity - contents)	no
2727-W	Sodium storage bldg	Tank Headspace	Tank 3	Nitrogen	NA	NA	vapor	7500 gal (capacity - contents)	no
2727-W	Sodium storage bldg	Tank Headspace	Tank 4	Nitrogen	NA	NA	vapor	minimal	no

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
2727-W	Sodium storage bldg	Tank Headspace	Tank 5	Nitrogen	NA	NA	vapor	minimal	no
241-S-VSU	Vertical Storage Units	Other	Vertical Storage Units	NA	NA	Solid	Unknown *	Yes *	NA
241-A-350	DCRT catch station	Contamination in Pit or Box	Lift station A-350 (Catch tank)	Residual contamination	6.3 Kgal	NA	Residue	Unknown	No
244-CR	DCRT catch station	Contamination in Pit or Box	CR Vault Access Pits	residual contamination	one at 1400 gal (7'-8" x 5' x 5'), one at 1500 gal (7'10" x 5' x 5'), and two at 800 (6'10" x 3' x 5')	NA	residue	NA	no
244-CR	DCRT catch station	Contamination in Pit or Box	CR Vault Filter Pit	residual contamination	9500 gal (11'-8" x 11'-10" x 9'-2")	NA	residue	NA	no
244-CR	DCRT catch station	Contamination in Pit or Box	CR Vault Pump Pit (one above CR-002 and CR-003)	residual contamination	48,600 gal (42' x 8' x 19'-4")	NA	residue	NA	no
244-CR	DCRT catch station	Contamination in Pit or Box	CR Vault Pump Pits (one each above CR-011 and CR-001)	residual contamination	30,000 gal (26' x 8' x 19'-4")	NA	residue	NA	no
244-CR	DCRT catch station	Contents of Sump or Encasement	CR Vault Filter Pit Sump	residual contamination	about 30 gal (2'-10" square x 6" deep)	NA	residue	NA	no
244-CR	DCRT catch station	Contents of Sump or Encasement	CR Vault Space (including sump)	residual contamination, standing liquid possible	about 74,000 gal (2 large vaults) and about 30,000 gal (2 smaller vaults)*	NA	residue and possibly liquid	unknown	no
244-CR	DCRT catch station	Tank Contents	CR Vault tank 001	Unknown	50 kgal	Unknown	Unknown	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
244-CR	DCRT catch station	Tank Contents	CR Vault tank 002	Unknown	15 kgal	Unknown	Unknown	Unknown	No
244-CR	DCRT catch station	Tank Contents	CR Vault tank 003	Saltwell waste from C farm (C-102, C-107, C-110	15 kgal	NA	Liquid and solid	4653 gal total	No
244-CR	DCRT catch station	Tank Contents	CR Vault tank 011	Unknown	50 kgal	Unknown	Unknown	Unknown	No
244-CR	DCRT catch station	Tank Headspace	CR Vault tank 001	NA	NA	NA	NA	NA	NA
244-CR	DCRT catch station	Tank Headspace	CR Vault tank 002	NA	NA	NA	NA	NA	NA
244-CR	DCRT catch station	Tank Headspace	CR Vault tank 003	NA	NA	NA	NA	NA	NA
244-CR	DCRT catch station	Tank Headspace	CR Vault tank 011	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
244-CR	DCRT catch station	Ventilation Filter Contents	244-CR Vault vent system filters	NA	1 R/hr at six inches**	NA	Particulates	Unknown	yes, filters disposed of in accordance with EP-0063-4 (9/93)
244-S	DCRT catch station	Tank Contents	DCRT 244-S	See comments	87,720 Kgal	See comments	See comments	Unknown	No
244-S	DCRT catch station	Tank Headspace	DCRT 244-S	NA	NA	NA	Vapor	Unknown	No
244-TX	DCRT catch station	Contents of Sump or Encasement	244-TX DCRT Vault	NA	54,000 gal. *	NA	NA	NA	NA
244-U	DCRT catch station	Tank Contents	244-U DCRT	NA	26000 gal	NA	NA	NA	NA
244-U	DCRT catch station	Tank Headspace	244-U DCRT	NA	NA	NA	NA	26000 gal	No
244-BX	Double contained receiver tank	Contamination in Pit or Box	244-BX DCRT Filter Pit	Residual contamination	13,300 gal (11' x 17' x9'-6")	NA	residue	NA	No
244-BX	Double contained receiver tank	Contamination in Pit or Box	244-BX DCRT Instrument Pit	Residual contamination	800 gal (4' diameter x 8'-4")	NA	residue	NA	No
244-BX	Double contained receiver tank	Contamination in Pit or Box	244-BX DCRT Pump Pit	Residual contamination	23,000 gal (19' x 17' x9'-6")	NA	residue	NA	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
244-BX	Double contained receiver tank	Tank Contents	244-BX DCRT	Saltwell pumping waste from BX, BY, and B farms	31 kgal	NA	Liquid and solid	16397 gal total, about 1200-3300 gal of sludge	No
244-BX	Double contained receiver tank	Tank Headspace	244-BX DCRT	NA	NA	NA	vapor	unknown	No
244-BX	Catch station	Contamination in Pit or Box	244-BX DCRT Filter Pit	Residual contamination	13,300 gal (11' x 17' x9'-6")	NA	residue	NA	No
244-BX	Catch station	Contamination in Pit or Box	244-BX DCRT Instrument Pit	Residual contamination	800 gal (4' diameter x 8'-4")	NA	residue	NA	No
244-BX	Catch station	Contamination in Pit or Box	244-BX DCRT Pump Pit	Residual contamination	23,000 gal (19' x 17' x9'-6")	NA	residue	NA	No
244-BX	Catch station	Tank Contents	244-BX DCRT	Saltwell pumping waste from BX, BY, and B farms	31 kgal	NA	Liquid and solid	16397 gal total, about 1200-3300 gal of sludge	No
244-BX	Catch station	Tank Headspace	244-BX DCRT	NA	NA	NA	vapor	unknown	No
241-A-302-A	Catch tank	Contamination in Pit or Box	Catch tank A-302-A	Residual contamination	7.9 Kgal	NA	Residue	Unknown	No
241-A-417	Catch tank	Contamination in Pit or Box	Catch tank A-417	Residual contamination	48.5 Kgal	NA	Residue	Unknown	No
241-AX-152	Catch tank	Contamination in Pit or Box	Diverter station and catch tank AX-152	Residual contamination	21.2 K gal	NA	Residue	Unknown	No
241-AZ-151	Catch tank	Contamination in Pit or Box	Catch tank pit AZ-151	Residual contamination	2.9 K gal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AZ-152	Catch tank	Contamination in Pit or Box	Sluice transfer box AZ-152	Residual contamination	7.5 K gal	NA	Residue	Unknown	No
241-AZ-154	Catch tank	Contamination in Pit or Box	Condensate pump pit AZ-154	Residual contamination	2.3 K gal	NA	Residue	Unknown	No
241-ER-311	Catch tank	Contamination in Pit or Box	Pump Pit	residual contamination*	660 gal (5' diameter x 4'-6")	NA	residue*	NA	no
241-S-304	Catch tank	Tank Contents	Catch Tank 241-S-304	no data	6300 gal	no data	no data	2379 gal	No
241-S-304	Catch tank	Tank Headspace	Catch Tank 241-S-304	NA	No data	NA	Vapor	Unknown	No
241-TX-302C	Catch tank	Tank Contents	241-TX-302C CATCH TANK	No data *	14556 gal	NA	No data	5040 gal	No
241-TX-302C	Catch tank	Tank Headspace	241-TX-302C CATCH TANK	NA	NA	NA	Vapor	Unknown	No
241-U-301B	Catch tank	Tank Contents	Catch tank 241-U-301-B	Residual	36400 gal	No data	No data	7820 gal	No
241-U-301B	Catch tank	Tank Headspace	Catch tank 241-U-301-B	NA	no data	NA	Vapor	No data available	No
241-UX-302A	Catch tank	Tank Contents	Catch tank 241-UX-302-A	Residual	17700 gal	No data	No data	2432 gal	No
241-UX-302A	Catch tank	Tank Headspace	Catch tank 241-UX-302-A	NA	NA	NA	Vapor	15268 gal	No
241-A-350	Drainage lift station: catch tank	Contamination in Pit or Box	Lift station A-350 (Catch tank)	Residual contamination	6.3 Kgal	NA	Residue	Unknown	No
241-A-COB	Cleanout box	Contamination in Pit or Box	Clean-out boxes	Residual contamination	.08 Kgal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AX-COB	Cleanout box	Contamination in Pit or Box	Cleanout boxes	Residual contamination	.07 K gal ea	NA	Residue	Unknown	No
241-AY-1	Cleanout box	Contamination in Pit or Box	Cleanout box AY-1	Residual contamination	.07 K gal	NA	Residue	Unknown	No
241-AZ-1	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ1	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-10	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ10	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-2	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ2	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-3	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ3	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-4	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ4	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-5	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ5	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-6	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ6	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-7	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ7	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-8	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ8	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-AZ-9	Cleanout box	Contamination in Pit or Box	Cleanout boxes AZ9	Residual contamination	.06 K gal ea	NA	Residue	Unknown	No
241-SY-1	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-1	Residual	181 gal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-SY-2	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-2	Residual	181 gal	NA	Residue	Unknown	No
241-SY-3	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-3	Residual	181 gal	NA	Residue	Unknown	No
241-SY-4	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-4	Residual	181 gal	NA	Residue	Unknown	No
241-SY-5	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-5	Residual	181 gal	NA	Residue	Unknown	No
241-SY-6	Cleanout box	Contamination in Pit or Box	Clean out box COB-SY-6	Residual	181 gal	NA	Residue	Unknown	No
COB-AN-1	Cleanout box	Contamination in Pit or Box	Clean out box AN 1	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-2	Cleanout box	Contamination in Pit or Box	Clean out box AN 2	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-3	Cleanout box	Contamination in Pit or Box	Clean out box AN 3	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-4	Cleanout box	Contamination in Pit or Box	Clean out box AN 4	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-5	Cleanout box	Contamination in Pit or Box	Clean out box AN 5	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-6	Cleanout box	Contamination in Pit or Box	Clean out box AN 6	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-7	Cleanout box	Contamination in Pit or Box	Clean out box AN 7	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No
COB-AN-8	Cleanout box	Contamination in Pit or Box	Clean out box AN 8	Residual contamination	.047 K gal ea.	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AZ-152	Sluice Transfer Box	Contamination in Pit or Box	Sluice transfer box AZ-152	Residual contamination	7.5 K gal	NA	Residue	Unknown	No
241-AZ-152	Sluice transfer box	Contamination in Pit or Box	Sluice transfer box AZ-152	Residual contamination	7.5 K gal	NA	Residue	Unknown	No
241-AZ-161	Check valve caisson	Contamination in Pit or Box	Airlift circulator 601 caisson AZ-161	NA	8.9 K gal	NA	None	NA	NA
241-AZ-162	Check valve caisson	Contamination in Pit or Box	Airlift circulator 602 caisson AZ-162	NA	7.3 K gal	NA	None	NA	NA
240-T-151	Diversion box	Contamination in Pit or Box	Diversion box 240-T-151	Residual	NA	NA	Residue	Unknown	No
240-T-152	Diversion box	Contamination in Pit or Box	Diversion box 240-T-152	Residual	NA	NA	Residue	Unknown	No
240-T-153	Diversion box	Contamination in Pit or Box	Diversion box 240-T-153	Residual	NA	NA	Residue	Unknown	No
241-A-151	Diversion box	Contamination in Pit or Box	Diversion box A-151	Residual contamination	64.1 Kgal	NA	Residue	Unknown	No
241-A-152	Diversion box	Contamination in Pit or Box	Diversion box A-152	Residual contamination	78.9 Kgal	NA	Residue	Unknown	No
241-AR-151	Diversion box	Contamination in Pit or Box	Diversion Box	residual contamination*	2800 gal (7′ x 7′ x 7′-8″)	NA	residue*	NA	no
241-AX-151	Diversion box	Contamination in Pit or Box	Diverter station AX-151	Residual contamination	31.9 K gal	NA	Residue	Unknown	No
241-AX-153	Diversion box	Contamination in Pit or Box	Isolation jumper pit AX-153	Residual contamination	1.5 K gal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AX-155	Diversion box	Contamination in Pit or Box	Diversion box AX-155	Residual contamination	3.3 K gal	NA	Residue	Unknown	No
241-B-151	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-B-152	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-B-153	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-B-154	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-B-252	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-BXR-151	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-BXR-152	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-BXR-153	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-BYR-152	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-BYR-153	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-BYR-155	Diversion box	Contamination in Pit or Box	Diversion box	Residual contamination	NA	NA	residue	NA	No
241-C-151	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-C-152	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-C-153	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-C-154	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-C-252	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-CR-151	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-CR-152	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-CR-153	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-ER-151	Diversion box	Contamination in Pit or Box	Jumper Storage Pit	Residual*	6600 gal (6' x 11'-4.5" x 13')	NA	residue*	NA	no
241-ER-151	Diversion box	Contamination in Pit or Box	Nozzle Pit	Residual*	15,750 gal (6' x 27' x 13')	NA	residue*	NA	no
241-ER-151	Diversion box	Contamination in Pit or Box	Pipe Pit	Residual*	14,300 gal (28'-10" x 9'-6" x 7')	NA	residue*	NA	no
241-ER-152	Diversion box	Contamination in Pit or Box	Diversion Box	residual contamination*	9850 gal (10' x 10' x 13'-2")	NA	residue*	NA	no
241-ER-152	Diversion box	Contents of Pipeline and/or Source Tank During Transfer	NA	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-ER-152	Diversion box	Contents of Sump or Encasement	Diversion box sump	residual contamination*	25 gal (18" x 18" x 18")	NA	residue*	NA	no
241-ER-153	Diversion box	Contamination in Pit or Box	Diversion Box	residual contamination*	11,400 gal (13' x 13' x 9')	NA	residue*	NA	no
241-ER-153	Diversion box	Contents of Pipeline and/or Source Tank During Transfer	NA	NA	NA	NA	NA	NA	NA
241-ER-153	Diversion box	Contents of Sump or Encasement	Diversion box sump	residual contamination*	25 gal (18" x 18" x 18")	NA	residue*	NA	no
241-ER-311	Diversion box	Contamination in Pit or Box	Pump Pit	residual contamination*	660 gal (5' diameter x 4'-6")	NA	residue*	NA	no
241-S-151	Diversion box	Contamination in Pit or Box	Diversion Box 241-S-151	Residual	33510 gal	NA	Residue	Unknown	No
241-S-152	Diversion box	Contamination in Pit or Box	Diversion Box 241-S-152	Residual	NA	NA	Residue	Unknown	No
241-SX-151	Diversion box	Contamination in Pit or Box	Diversion box 241-SX-151	Residual	NA	NA	Residue	NA	No
241-SX-152	Diversion box	Contamination in Pit or Box	Diversion box 241-SX-152	Residual	NA	NA	Residue	NA	No
241-TX-152	Diversion box	Contamination in Pit or Box	241-TX-152	Residual	2082 gal	NA	Residue	NA	No
241-TX-153	Diversion box	Contamination in Pit or Box	Diversion Box 241-TX-153	Residual	NA	NA	Residue	NA	No
241-TX-154	Diversion box	Contamination in Pit or Box	241-TX-154	Residual	24,832 gal	NA	Residue	NA	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-TX-155	Diversion box	Contamination in Pit or Box	Diversion Box 241-TX-155	Residual	NA	NA	Residue	NA	No
241-U-151	Diversion box	Contamination in Pit or Box	Diversion box 241-U-151	Residual	7554 gal	NA	Residue	Unknown	NA
241-U-152	Diversion box	Contamination in Pit or Box	Diversion box 241-U-152	Residual	11331 gal	NA	Residue	Unknown	NA
242-B-151	Diversion box	Contamination in Pit or Box	Diversion box	residual contamination	NA	NA	residue	NA	no
241-U-153	Diversion pit	Contamination in Pit or Box	Diversion box 241-U-153	Residual	NA	NA	Residue	Unknown	NA
241-U-252	Diversion pit	Contamination in Pit or Box	Diversion box 241-U-252	Residual	NA	NA	Residue	Unknown	NA
241-UR-151	Diversion pit	Contamination in Pit or Box	Diversion box 241-UR-151	Residual	NA	NA	Residue	Unknown	NA
241-UR-152	Diversion pit	Contamination in Pit or Box	Diversion box 241-UR-152	Residual	NA	NA	Residue	Unknown	NA
241-UR-153	Diversion pit	Contamination in Pit or Box	Diversion box 241-UR-153	Residual	NA	NA	Residue	Unknown	NA
241-UR-154	Diversion pit	Contamination in Pit or Box	Diversion box 241-UR-154	Residual	NA	NA	Residue	Unknown	NA
241-A-401	Diverter caisson	Contamination in Pit or Box	Diverter caisson A-401	Residual contamination	2.6 Kgal	NA	Residue	Unknown	No
241-A-401	Diverter caisson	Other	Condenser building A-401	Low level waste	NA	NA	Solid	Low level	No
241-F-505	Diverter caisson	Contamination in Pit or Box	Diverter caisson F505	Residual contamination	.68 Kgal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AX-152	Diverter station	Contamination in Pit or Box	Diverter station and catch tank AX-152	Residual contamination	21.2 K gal	NA	Residue	Unknown	No
241-AW-02E	Feed pump pit	Contamination in Pit or Box	Feed pump pit 02E	Residual contamination	3 Kgal	NA	Residue	Unknown	No
241-SY-02E	Feed pump pit	Contamination in Pit or Box	Feed pump pit 241-SY-02E	Residual	2474 gal	NA	Residue	Unknown	No
244-A	Lift station 244-A	Contamination in Pit or Box	Lift station 244-A	Residual contamination	25 Kgal	NA	Residue	Unknown	No
241-AY-151	Pumpout pit	Contamination in Pit or Box	Pumpout pit AY-151	Residual contamination	1.3 K gal	NA	Residue	Unknown	No
241-AY-152	Valve box	Contamination in Pit or Box	Transfer box AY-152	Residual contamination	4.9 K gal	NA	Residue	Unknown	No
241-A-A	Valve pit	Contamination in Pit or Box	Valve pit A-A	Residual contamination	4.3 Kgal	NA	Residue	Unknown	No
241-A-B	Valve pit	Contamination in Pit or Box	Valve pit A-B	Residual contamination	4.3 Kgal	NA	Residue	Unknown	No
241-AN-A	Valve pit	Contamination in Pit or Box	Valve Pit AN-A	Residual contamination	5.4 K gal	NA	Residue	Unknown	No
241-AN-B	Valve pit	Contamination in Pit or Box	Valve Pit AN-B	Residual contamination	5.4 K gal	NA	Residue	Unknown	No
241-AP-A	Valve pit	Contamination in Pit or Box	241 AP Valve pit	residual contamination (d)	~21.5 K gal (d)	NA	residue	unknown	no
241-AW-A	Valve pit	Contamination in Pit or Box	Valve pit AW-A	Residual contamination	4.4 Kgal	NA	Residue	Unknown	No
241-AW-B	Valve pit	Contamination in Pit or Box	Valve pit AW-B	Residual contamination	4.4 Kgal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AX-501	Valve pit	Contamination in Pit or Box	Valve pit AX-501	Residual contamination	1.1 K gal	NA	Residue	Unknown	No
241-AX-A	Valve pit	Contamination in Pit or Box	Flush pit (2)	Raw water	.82 K gal	NA	Liquid	NA	No
241-AX-A	Valve pit	Contamination in Pit or Box	Valve pit AX-A	Residual contamination	4.3 K gal each	NA	Residue	Unknown	No
241-AX-B	Valve pit	Contamination in Pit or Box	Flush pit	Raw water	.82 K gal	NA	Liquid	NA	No
241-AX-B	Valve pit	Contamination in Pit or Box	Valve pit AX-B	Residual contamination	4.3 K gal each	NA	Residue	Unknown	No
241-AY-501	Valve pit	Contamination in Pit or Box	Condensate valve pit AY-501	Residual contamination	4 K gal	NA	Residue	Unknown	No
241-AZ-153	Valve pit	Contamination in Pit or Box	Vent valve pit	Residual contamination	.8 K gal	NA	Residue	Unknown	No
241-AZ-562	Valve pit	Contamination in Pit or Box	Vent valve pit	Residual contamination	.8 K gal	NA	Residue	Unknown	No
241-F-562	Valve pit	Contamination in Pit or Box	Valve pit F-562	Residual contamination	1.9 Kgal	NA	Residue	Unknown	No
241-S-A	Valve pit	Contamination in Pit or Box	Valve pit 241-S-A	Residual	3142 gal	NA	Residue	Unknown	No
241-S-B	Valve pit	Contamination in Pit or Box	Valve pit 241-S-B	Residual	3142 gal	NA	Residue	Unknown	No
241-S-C	Valve pit	Contamination in Pit or Box	Valve pit 241-S-C	Residual	3142 gal	NA	Residue	Unknown	No
241-S-D	Valve pit	Contamination in Pit or Box	Valve pit 241-S-D	Residual	3142 gal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-SX-A	Valve pit	Contamination in Pit or Box	Valve box 241-SX-A	Residual	3142 gal	NA	Residue	NA	No
241-SX-B	Valve pit	Contamination in Pit or Box	Valve box 241-SX-B	Residual	3142 gal	NA	Residue	NA	No
241-SY-A	Valve pit	Contamination in Pit or Box	Valve Pits 241-SY-A	Residual	4413 gal	NA	Residue	Unknown	No
241-SY-B	Valve pit	Contamination in Pit or Box	Valve Pits 241-SY-B	Residual	4413 gal	NA	Residue	Unknown	No
241-U-A	Valve pit	Contamination in Pit or Box	Valve pit 241-U-A	Residual	3142 gal	NA	Residue	Unknown	NA
241-U-B	Valve pit	Contamination in Pit or Box	Valve pit 241-U-B	Residual	3142 gal	NA	Residue	Unknown	NA
241-U-C	Valve pit	Contamination in Pit or Box	Valve pit 241-U-C	Residual	3142 gal	NA	Residue	Unknown	NA
241-U-D	Valve pit	Contamination in Pit or Box	Valve pit 241-U-D	Residual	3142 gal	NA	Residue	Unknown	NA
241-AN-01D	Condensate receiver pit	Contamination in Pit or Box	Condensate pit AN 01D	Residual contamination	2.4 K gal ea.	NA	Residue	Unknown	No
241-AZ-155	Contaminated storage pit	Contamination in Pit or Box	Contaminated equipment storage pit AZ-155	Residual contamination	53.7 K gal	NA	Residue	Unknown	No
241-A-A	Flush pit	Contamination in Pit or Box	Valve pit A-A	Residual contamination	4.3 Kgal	NA	Residue	Unknown	No
241-A-B	Flush pit	Contamination in Pit or Box	Valve pit A-B	Residual contamination	4.3 Kgal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-AN-FP	Flush pit	Contamination in Pit or Box	Flush pit	Residual contamination	1 K gal	NA	Residue	Unknown	No
241-AP	Flush pit	Contamination in Pit or Box	Process pits	residual contamination (d)	NA	NA	residue	unknown	no
241-AP	Flush pit	Ventilation Filter Contents	Annulus	NA	200 mR/hr maximum for all HEPA filters (a)	NA	particulate	unknown	Yes - Disposal in accordance w/WHC-EP-0063-4 (9/93)
241-AP	Flush pit	Ventilation Filter Contents	Primary	NA	200 mR/hr maximum for all HEPA filters (a)	NA	particulate	unknown	Yes - Disposal in accordance w/WHC-EP-0063-4 (9/93)
241-AW-FP	Flush pit	Contamination in Pit or Box	Flush pit	Residual contamination	.8 Kgal	NA	Residue	Unknown	No
241-AX-A	Flush pit	Contamination in Pit or Box	Flush pit (2)	Raw water	.82 K gal	NA	Liquid	NA	No
241-AX-A	Flush pit	Contamination in Pit or Box	Valve pit AX-A	Residual contamination	4.3 K gal each	NA	Residue	Unknown	No
241-AX-B	Flush pit	Contamination in Pit or Box	Flush pit	Raw water	.82 K gal	NA	Liquid	NA	No
241-AX-B	Flush pit	Contamination in Pit or Box	Valve pit AX-B	Residual contamination	4.3 K gal each	NA	Residue	Unknown	No
241-SY-02E	Flush pit	Contamination in Pit or Box	Feed pump pit 241-SY-02E	Residual	2474 gal	NA	Residue	Unknown	No
241-SY-A	Flush pit	Contamination in Pit or Box	Valve Pits 241-SY-A	Residual	4413 gal	NA	Residue	Unknown	No

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-SY-B	Flush pit	Contamination in Pit or Box	Valve Pits 241-SY-B	Residual	4413 gal	NA	Residue	Unknown	No
216-A-08	Sample pit	Contamination in Pit or Box	Crib, sample pit and weir pit 216-A-08	Residual contamination	Control structure #1: 9 Kgal Control structure #2: 19 Kgal Sampler pit#1: 3.8 Kgal Sampler pit#2 8 Kgal	NA	Residue	Unknown	No
241-AN-273	Service pit	Contamination in Pit or Box	Service pit	Raw Water	2.4 K gal	NA	Residue	No	No
241-AP-273	Service pit	Contents of Sump Contents of Pipeline and/or Source Tank During Transfer	Service pit sump	raw water	NA	NA	liquid	NA	NA
241-AX-80	Service pit	Contamination in Pit or Box	Service pit AX-80	Raw water	2.1 Kgal	NA	Residue	Unknown	No
241-SY	Service pit	Contamination In Ventilation System	De-entrainers	Condensate	NA	NA	Liquid	NA	NA
241-SY	Service pit	Contamination In Ventilation System	Seal loop	Condensate	NA	NA	Liquid	NA	NA
241-SY	Service pit	Contamination on Equipment or Tools	101-SY Mixer	Tank waste	NA	NA	NA	NA	NA
241-SY	Service pit	Contamination on Vehicle	NONE	NA	NA	NA	NA	NA	NA
241-SY	Service pit	Contents of Pipeline and/or Source Tank During Transfer	NA	NA	NA	NA	NA	NA	NA

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-SY	Service pit	Contents of Sump or Encasement	NA	NA	NA	NA	NA	NA	NA
241-SY	Service pit	Other	Diesel generator	Diesel fuel	NA	NA	Liquid	Unknown	Yes
241-SY	Service pit	Other	Hydrogen bottles	.01%H2,99.99%air 5.0%H2, 95.0% air	480 cubic feet	NA	Gas	480 cubic feet	Yes
241-SY	Service pit	Other	Liquid nitrogen	Nitrogen	~1500 gal	NA	Gas	Unknown	No
241-SY	Service pit	Rail or Truck Tanker Contents	NONE	NA	NA	NA	NA	NA	NA
241-SY	Service pit	SARA 313 Materials	PCM1B gas bottles	90% Argon/ 10% Methane	480 cubic feet	NA	Gas	480 cubic feet	Yes
241-SY	Service pit	Tank Headspace	SY-Stack	NA	NA	NA	Vapor	7517 m3 640 g NH3	No
241-SY	Service pit	Ventilation Filter Contents	Annulus	NA	200 mR/hr maximum for all HEPA filters	NA	Particulate	* Need surface rad measurements	Yes - Disposal in accordance w/WHC-EP-0064-4
241-SY	Service pit	Ventilation Filter Contents	Inlet Breather	NA	1 R/h at 6 inches	NA	Particulate	NA	Yes - Disposal in accordance w/WHC-EP-0064-4

Table 3.1-2. Material at Risk at TWRS Facilities.

Facility Name	Type	MAR-Subject	MAR-Description	MAR-Classification	Capacity	Material Type	Physical Form	Volume or Activity	Transient
241-SY	Service pit	Ventilation Filter Contents	Primary	NA	200 mR/hr maximum for all HEPA filters	NA	Particulate	* Need surface rad measurements	Yes - Disposal in accordance w/WHC-EP-0064-4
241-A-401	AY/AZ condenser bldg	Contamination in Pit or Box	Diverter caisson A-401	Residual contamination	2.6 Kgal	NA	Residue	Unknown	No
241-A-401	AY/AZ condenser bldg	Other	Condenser building A-401	Low level waste	NA	NA	Solid	Low level	No
241-AP-273	Service building	Contents of Sump Contents of Pipeline and/or Source Tank During Transfer	Service pit sump	raw water	NA	NA	liquid	NA	NA
241-A-702	Vessel ventilation building	Contamination In Ventilation System	De-entrainers	Process condensate	NA	NA	Liquid	Residual	NA
241-A-702	Vessel ventilation building	Contamination In Ventilation System	Seal loop	Silicon based oil	<1 gallon	NA	Liquid	Residual	NA
241-A-702	Vessel ventilation building	Other	Ventilation building 241-A-702	Low level waste	NA	NA	Residue	Low level	No

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Table 3.1-3

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-A-101	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-A-102	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-A-103	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-A-104	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-A-105	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-A-106	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-AN-101	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AN-102	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-AN-103	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AN-104	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AN-105	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AN-106	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AN-107	Double shell tank	Active	Annulus has filtered inlet, K1 primary tank ventilation system, K2 annulus ventilation system	Yes		No		No	
241-AP-101	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-102	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-103	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-AP-104	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-105	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-106	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-107	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AP-108	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AW-101	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AW-102	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	Yes		No		No	
241-AW-103	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-AW-104	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AW-105	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AW-106	Double shell tank	Active	K1 primary tank ventilation system, K2 annulus ventilation system	No		No		No	
241-AX-101	Single shell tank	Passive	One breather filter with one seal loop	No	The ALC is still in the tank. There are flanged covers on the risers.	No		No	
241-AX-102	Single shell tank	Passive	One breather filter with one seal loop	No	The ALC is still in the tank. There are flanged covers on the risers.	No		No	
241-AX-103	Single shell tank	Passive	One breather filter with one seal loop	No	The ALC is still in the tank. There are flanged covers on the risers.	No		No	
241-AX-104	Single shell tank	Passive	One breather filter with one seal loop	No	The ALC is still in the tank. There are flanged covers on the risers.	No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-AY-101	Double shell tank	Active	Tank farm A primary ventilation system			No	Steam coils in tank, steam to facility is blanked off	No	
241-AY-102	Double shell tank	Active	Tank farm A primary ventilation system			No	Steam coils in tank, steam to facility is blanked off	No	
241-AZ-101	Double shell tank	Active	Tank farm A primary ventilation system	Yes		No	Steam coils in tank, steam to facility is blanked off	No	Two new mixer pumps are being installed in AZ-101 for sludge washing (Project W-151).
241-AZ-102	Double shell tank	Active	Tank farm A primary ventilation system	Yes		No	Steam coils in tank, steam to facility is blanked off	No	
241-B-101	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-102	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-103	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-104	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-105	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-106	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-B-107	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-108	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-109	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-110	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-111	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-112	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-201	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-202	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-203	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-B-204	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to B Tank Farm	No	
241-BX-101	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-102	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-103	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-104	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-BX-105	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-106	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-107	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-108	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-109	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-110	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-111	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BX-112	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BX Tank Farm	No	
241-BY-101	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-102	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BY Tank Farm	No	
241-BY-103	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-104	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BY Tank Farm	No	
241-BY-105	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-BY-106	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-107	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-108	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-109	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BY Tank Farm	No	
241-BY-110	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-111	Single shell tank	Passive	One breather filter with one seal loop	No	Present, not presently operable	No	No steam to BY Tank Farm	No	
241-BY-112	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to BY Tank Farm	No	
241-C-101	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-102	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-103	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-104	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-105	Single shell tank	Active	Exhauster	No		No	No steam to C Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-C-106	Single shell tank	Active	Exhauster	No		No	No steam to C Tank Farm	No	
241-C-107	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-108	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-109	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-110	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-111	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-112	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-201	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-202	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-203	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-C-204	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to C Tank Farm	No	
241-S-101	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-102	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-103	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-S-104	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-105	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-106	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-107	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-108	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-109	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-110	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-111	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-S-112	Single shell tank	Passive	One breather filter with one seal loop	No		No	No steam to S Tank Farm	No	
241-SX-101	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	
241-SX-102	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	
241-SX-103	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-SX-104	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	
241-SX-105	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	
241-SX-106	Single shell tank	Active	Vented through a shared underground piping system to SX-109	No		No	No steam to SX Tank Farm	No	
241-SX-107	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-108	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-109	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-110	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-111	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-112	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-113	Single shell tank	Passive		No		No	No steam to SX Tank Farm	No	
241-SX-114	Single shell tank	Active	Vented to an above ground shared system	No		No	No steam to SX Tank Farm	No	
241-SX-115	Single shell tank	Passive		No		No	No steam to SX Tank Farm	No	
241-SY-101	Double shell tank	Active	Shared ventilation system	No		No	No steam to SY Tank Farm	Yes	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-SY-102	Double shell tank	Active	Shared ventilation system	No		No	No steam to SY Tank Farm	No	
241-SY-103	Double shell tank	Active	Shared ventilation system	No		No	No steam to SY Tank Farm	No	
241-T-101	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-102	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-103	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-104	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-105	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-106	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-107	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-108	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-109	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-110	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-111	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-112	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-T-201	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-202	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-203	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-T-204	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-101	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-102	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-103	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-104	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-105	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-106	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-107	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-108	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-109	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-110	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-TX-111	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-112	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-113	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-114	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-115	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-116	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-117	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TX-118	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-101	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-102	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-103	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-104	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-105	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-TY-106	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-U-101	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-102	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-103	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-104	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-105	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-106	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-107	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-108	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-109	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-110	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-111	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-112	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-201	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-202	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	

Table 3.1-3. TWRS Facility Configurations.

Facility Name	Type	Ventilation	Comment Ventilation	Air Lift Ciculator	Comment ALC	Steam Coils	Comment Steam Coils	Mixer Pumps	Comments Mixer Pumps
241-U-203	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	
241-U-204	Single shell tank	Passive	One breather filter with one seal loop	No		No		No	

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
A Tank Farm											
241-A-101	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-A-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Jo 1996 WHC-SD-WM-DP-136	No, Jo 1996 WHC-SD-WM-DP-136	No, Jo 1996 WHC-SD-WM-DP-136	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-A-103	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-A-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-A-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hodgson 1995 74A30-95-018	No, Hodgson 1995 74A30-95-018	No, Hodgson 1995 74A30-95-018	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
AN Tank Farm											
241-AN-101	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1996 WHC-SD-WM-DP-148 Rev. 1	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AN-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1996 WHC-SD-WM-DP-165 Rev. 0	Yes, Esch 1996 WHC-SD-WM-DP-165 Rev. 1	Yes, Esch 1996 WHC-SD-WM-DP-165 Rev. 1	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	Yes, Tusler 1996 74A30-96-008
241-AN-103	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Toste 1987 PNL letter to WG Richmond	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AN-104	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Reynolds 1994 WHC-EP-0717	Unknown or currently undocumented	Yes, (Slurry) Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AN-105	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Reynolds 1994 WHC-EP-0717	Unknown or currently undocumented	Yes, (Slurry) Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-AN-107	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Herting 1993 12110-PCL93-042	Yes, Tusler 1996 74A30-96-008	Yes, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	Yes, Tusler 1996 74A30-96-008
AP Tank Farm											
241-AP-101	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, WHC-SD-WM-DP-161 R.1	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	N WHC-SD-WM-ER-358	No, Tusler 1996-74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-103	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	N WHC-SD-WM-ER-459	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	N personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-104	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sutey 1995 71720-95-008	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-AP-106	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, WHC-SD-WM-DP-078 R.0	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-107	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, WHC-SD-WM-DP-098 R.0A	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-108	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, WHC-SD-WM-DP-166 R.0	No, Tusler 1996 74A30-96-008	Data not available	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
AW Tank Farm											
241-AW-101	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Baldwin 1995 WHC-SD-WM-ER-470	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008
241-AW-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1995 WHC-SD-WM-DP-149	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-AW-104	Double shell tank	Yes, Hodgson, 1996 WHC-SD-WM-ER-526 Rev. 1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Tusler 1995 WHC-SD-WM-ER-453	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008
241-AW-105	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1995 WHC-SD-WM-DP-146	Data not available	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008
241-AW-106	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1995 WHC-SD-WM-DP-147	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008
AX Tank Farm											
241-AX-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-AX-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sederburg 1995 WHC-SD-WM-ER-472	Unknown or currently undocumented	No, Sederburg 1995 WHC-SD-WM-ER-472	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-AX-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
AY Tank Farm											
241-AY-101	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Blaak 1995 95-056	No, Tusler 1996 74A30-96-008	No, Herting 1996 75764-PCS96-016	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	Yes, Tusler 1996 74A30-96-008
241-AY-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1996 WHC-SD-WM-DP-150	No, Tusler 1996 74A30-96-008	No, Herting 1996 75764-PCS96-021	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
AZ Tank Farm											
241-AZ-101	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hodgson 1995 WHC-SD-WM-ER-410	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-B-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Winters 1995 WHC-SD-WM-ER-405	No, Winters 1995 WHC-SD-WM-ER-405	No, Winters 1995 WHC-SD-WM-ER-405	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Conner 1995 WHC-SD-WM-ER-488	N/A	No, Conner 1995 WHC-SD-WM-ER-488	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Jo 1995 WHC-SD-WM-DP-137	No, Jo 1995 WHC-SD-WM-DP-137	No, Jo 1995 WHC-SD-WM-DP-137	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Conner 1995 WHC-SD-WM-DP-140	No, Conner 1995 WHC-SD-WM-DP-140	No, Conner 1995 WHC-SD-WM-DP-140	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-B-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Simpson 1994 WHC-SD-MW-ER-368	Data not available	No, Simpson 1994 WHC-SD-MW-ER-368	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Remund et. al PNL-10099	No, Remund et. al PNL-10099	No, Remund et. al PNL-10099	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-B-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Dougherty 1995 WHC-SD-WM-ER-366	No, Dougherty 1995 WHC-SD-WM-ER-366	No, Dougherty 1995 WHC-SD-WM-ER-366	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-201	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Heasler et al. 1994 PNL-10110	Unknown or currently undocumented	No, Heasler et al. 1994 PNL-10110	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-202	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Dougherty 1995 WHC-SD-WM-ER-371	Data not available	No, Dougherty 1995 WHC-SD-WM-ER-371	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-203	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Jo 1996 WHC-SD-WM-DP-169 Rev.1	No, Jo 1996 WHC-SD-WM-DP-169 Rev.1	No, Jo 1996 WHC-SD-WM-DP-169 Rev.1	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-B-204	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sasaki 1995 WHC-SD-WM-DP-160	No, Sasaki 1995 WHC-SD-WM-DP-160	No, Sasaki 1995 WHC-SD-WM-DP-160	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
BX Tank Farm											

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-BX-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-ER-408	No, Schreiber 1995 WHC-SD-WM-ER-408	No, Schreiber 1995 WHC-SD-WM-ER-408	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hu 1996 WHC-SD-WM-DP-171	No, Hu 1996 WHC-SD-WM-DP-171	No, Hu 1996 WHC-SD-WM-DP-171	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hall 1995 WHC-SD-WM-ER-406	No, Hall 1995 WHC-SD-WM-ER-406	No, Hall 1995 WHC-SD-WM-ER-406	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sasaki 1996 WHC-SD-WM-DP-0167	No, Rollison 1995 8E480-95-018 R. 1	No, Sasaki 1996 WHC-SD-WM-DP-0167	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-BX-107	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Raphael 1994 WHC-EP-0739	No, Raphael 1994 WHC-EP-0739	No, Raphael 1994 WHC-EP-0739	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sederburg 1995 WHC-SD-WM-ER-407	N/A	No, Sederburg 1995 WHC-SD-WM-ER-407	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-DP-155 R. 0	No, Sutey 1993 7C242-93-029	No, Schreiber 1995 WHC-SD-WM-DP-155 R. 0	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	No, Sutey 1993 7C242-93-029	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-BX-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Conner 1996 WHC-SD-MW-DP-170 draft R. 1	Unknown or currently undocumented	No, Conner 1996 WHC-SD-MW-DP-170 draft R. 1	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
BY Tank Farm											
241-BY-101	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-102	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Edington 1991 28110-PCL91-048	No, Edington 1991 28110-PCL91-048	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	No, Beck et al. 1992 WHC-SD-WM-TI-510	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-105	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sasaki 1996 WHC-SD-WM-DP-162	No, Esch 1995 8E480 95-020	No, Sasaki 1996 WHC-SD-WM-DP-162	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-BY-106	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Bell 1995 WHC-SD-WM-DP-103 R. 0A	No, Bell 1995 WHC-SD-WM-DP-103 R. 0A	No, Bell 1995 WHC-SD-WM-DP-103 R. 0A	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Baldwin 1995 WHC-SD-WM-ER-533	No, Baldwin 1995 WHC-SD-WM-ER-533	No, Baldwin 1995 WHC-SD-WM-ER-533	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-109	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-DP-153	No, Schreiber 1995 WHC-SD-WM-DP-153	No, Schreiber 1995 WHC-SD-WM-DP-153	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-BY-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
C Tank Farm											
241-C-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hall 1995 WHC-SD-WM-ER-473	Data not available	No, Hall 1995 WHC-SD-WM-ER-473	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	No, Dodd 1994 7CF10-032-094	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-C-104	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-C-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Tusler 1995 WHC-SD-WM-ER-489	No, Tusler 1995 WHC-SD-WM-ER-489	No, Tusler 1995 WHC-SD-WM-ER-489	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-C-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Yes, post-centrifugation separable floating layer found in sludge samples Sloughter & Lipke 1996 74A00-96-001	No, Schreiber 4/4/96 DSI	Yes, Sloughter & Lipke 1996 74A00-96-001	Yes, (*) Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-C-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Bell 1995 WHC-SD-WM-ER-474	No, Bell 1995 WHC-SD-WM-ER-474	No, Bell 1995 WHC-SD-WM-ER-474	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe) Borsheim & Simpson 1991 WHC-SD-WM-133 Rev. 0	No, Sederburg 1995 WHC-SD-WM-ER-503	Data not available	No, Sederburg 1995 WHC-SD-WM-ER-503	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe) Borsheim & Simpson 1991 WHC-SD-WM-133 Rev. 0	No, Sasaki 1995 WHC-SD-WM-ER-402	No, Sasaki 1995 WHC-SD-WM-ER-402	No, Sasaki 1995 WHC-SD-WM-ER-402	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-C-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Simpson 1994 WHC-SD-WM-ER-367	No, Simpson 1994 WHC-SD-WM-ER-367	No, Simpson 1994 WHC-SD-WM-ER-367	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe) Borsheim & Simpson 1991 WHC-SD-WM-133 Rev. 0	No, Simpson 1995 WHC-SD-WM-ER-475	No, Simpson 1995 WHC-SD-WM-ER-475	No, Simpson 1995 WHC-SD-WM-ER-475	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe) Borsheim & Simpson 1991 WHC-SD-WM-133 Rev. 0	No, Simpson et al. 1993 WHC-EP-0640 R. 1	Data not available	No, Simpson et al. 1993 WHC-EP-0640 R. 1	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-201	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-ER-476	Data not available	Yes, Schreiber 1995 WHC-SD-WM-ER-476	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-202	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-ER-477	Data not available	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-C-203	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Lechelt 1995 WHC-SD-WM-ER-478	Data not available	No, Lechelt 1995 WHC-SD-WM-ER-478	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-C-204	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Conner 1995 WHC-SD-WM-DP-115	Data not available	Yes, Conner 1995 WHC-SD-WM-DP-115	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
S Tank Farm											
241-S-101	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sample Status Report 1991 T-8579	No, Sample Status Report 1991 T-8579	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-102	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-103	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-S-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Simpson 1994 WHC-SD-WM-ER-370	No, Simpson 1994 WHC-SD-WM-ER-370	No, Simpson 1994 WHC-SD-WM-ER-370	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-S-106	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-107	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Raphael 1995 WHC-SD-WM-DP-156	No, Raphael 1995 WHC-SD-WM-DP-156	No, Raphael 1995 WHC-SD-WM-DP-156	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sample Status Report 1992 R-1135	No, Sample Status Report 1992 R-1135	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-109	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sample Status Report 1992 R-1136	No, Sample Status Report 1992 R-1136	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-S-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-111	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-112	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
SX Tank Farm											
241-SX-101	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Weiss 1990 12712-PCL90-043	No, Weiss 1990 12712-PCL90-043	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-SX-102	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-SX-103	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-SX-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Weiss 1988 12221-PCL88-147 R.1	No, Weiss 1988 12221-PCL88-147 R.1	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-106	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-SX-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Eggers 1995 WHC-SD-WM-DP-151	N/A	No, Eggers 1995 WHC-SD-WM-DP-151	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-SX-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	N/A	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-113	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Sasaki 1995 WHC-SD-WM-DP-133	N/A	No, Sasaki 1995 WHC-SD-WM-DP-133	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4: TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-SX-114	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	Yes, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-115	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	N/A	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
SY Tank Farm											
241-SY-101	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Herting & Welsh 1995 WHC-SD-WM-ER-409	Unknown or currently undocumented	No, (Bulk) Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	Y ** to 244-S [Warren Brown] (1)	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-SY-103	Double shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Rice 1995 WHC-SD-WM-DP-074	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	Y ** to 244-S [Warren Brown] (1)	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
T Tank Farm											
241-T-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-T-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, PNL-10101	N PNL-10101	No, PNL-10101	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-T-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-T-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-372	No, WHC-SD-WM-ER-372	No, WHC-SD-WM-ER-372	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-T-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-DP-143	No, WHC-SD-WM-DP-143	No, WHC-SD-WM-DP-143	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-T-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes, Watchlist tank: 2/91	No, WHC-SD-WM-ER-382	No, WHC-SD-WM-ER-382	No, WHC-SD-WM-ER-382	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-T-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-DP-141	No, WHC-SD-WM-DP-141	No, WHC-SD-WM-DP-141	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-T-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-T-110	Single shell tank	Yes, Watchlist tank: 1/91	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-T-111	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-540 Watchlist tank: 2/94	Yes, WHC-SD-WM-ER-540 WL: 2/94	Yes, WHC-SD-WM-ER-540 WL: 2/94	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-T-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-T-201	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-T-202	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-T-203	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-T-204	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
TX Tank Farm											
241-TX-102	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TX-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 1/91	No Analysis WL: 1/91	No, Anal WL: 1/91	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-107	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TX-108	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-109	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-111	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TX-112	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TX-113	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-114	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-115	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-116	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TX-117	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TX-118	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes, Watchlist tank: 1/91	No, Anal Watchlist tank: 1/91	No Analysis WL: 1/91	No, Anal WL: 1/91	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
TY Tank Farm											
241-TY-102	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-TY-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes, Watchlist tank: 1/91	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TY-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes, Watchlist tank: 1/91	N WHC-SD-WM-DP-101 WL: 5/94	N WHC-SD-WM-DP-101 WL: 5/94	N WHC-SD-WM-DP-101 WL: 5/94	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-TY-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TY-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	N WHC-SD-WM-ER-482	N WHC-SD-WM-ER-482	N WHC-SD-WM-ER-482	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
U Tank Farm											
241-U-102	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-103	Single shell tank	Yes, Watchlist tank: 1/91	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 5/94	No Analysis WL: 5/94	No, Anal WL: 5/94	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-104	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-U-105	Single shell tank	Yes, Watchlist tank: 1/91	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 5/94	No Analysis WL: 5/94	No, Anal WL: 5/94	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-U-106	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 1/91	No Analysis WL: 1/91	No, Anal WL: 1/91	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-107	Single shell tank	Yes, Watchlist tank: 12/93	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 1/91	No Analysis WL: 1/91	No, Anal WL: 1/91	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-108	Single shell tank	Yes, Watchlist tank: 1/91	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-109	Single shell tank	Yes, Watchlist tank: 1/91	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-110	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-EP-0643	No, WHC-EP-0643	No, WHC-EP-0643	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-U-111	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, Anal Watchlist tank: 3/93	No, Anal WL: 3/93	No Anal WL: 3/93	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-U-112	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-U-201	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-483	No, WHC-SD-WM-ER-483	No, WHC-SD-WM-ER-483	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-U-202	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-484	No, WHC-SD-WM-ER-484	No, WHC-SD-WM-ER-484	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-U-203	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-485	No, WHC-SD-WM-ER-485	No, WHC-SD-WM-ER-485	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-U-204	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-486	No, WHC-SD-WM-ER-486	No, WHC-SD-WM-ER-486	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-A-106	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-AN-106	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1996 WHC-SD-WM-DP-168 Rev. 0	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AP-105	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, WHC-SD-WM-ER-360	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	N personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-AW-103	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Hodgson 1995 WHC-SD-WM-ER-455	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140\PLUTINV)	No, Tusler 1996 74A30-96-008

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-AX-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-AZ-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Ryan 1995 WHC-SD-WM-ER-411	No, Tusler 1996 74A30-96-008	Unknown or currently undocumented	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
B Tank Farm											
241-B-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Schreiber 1995 WHC-SD-WM-DP-139 R. 1	No, Schreiber 1995 WHC-SD-WM-DP-139 R. 1	No, Schreiber 1995 WHC-SD-WM-DP-139 R. 1	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BX-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Bell 1995 WHC-SD-WM-DP-135	No, Bell 1995 WHC-SD-WM-DP-135	No, Bell 1995 WHC-SD-WM-DP-135	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-BY-103	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes(cond. Safe), Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Kelly 1995 WHC-SD-WM-DP-104 R. 1	No, Kelly 1995 WHC-SD-WM-DP-104 R. 1	No, Kelly 1995 WHC-SD-WM-DP-104 R. 1	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-C-103	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Yes, Bell 1995 WHC-SD-WM-DP-099	No, Bell 1995 WHC-SD-WM-DP-099	No, Bell 1995 WHC-SD-WM-DP-099	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-S-105	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-SX-105	Single shell tank	Yes, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	Unknown or currently undocumented	Unknown or currently undocumented	Unknown or currently undocumented	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Yes, Anantatmula 1994 WHC-EP-0772
241-SY-102	Double shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Simpson 1991 WHC-SD-WM-ER-133 Rev. 0	No, Esch 1995 WHC-SD-WM-DP-159	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Tusler 1996 74A30-96-008	No, Personal communication with Dan Reynolds	Y ** to 244-S [Warren Brown] (1)	No, Pu Inventory Database (WHC140/PLUTINV)	No, Tusler 1996 74A30-96-008
241-T-105	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No, WHC-SD-WM-ER-369	No, WHC-SD-WM-ER-369	No, WHC-SD-WM-ER-369	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772

Table 3.1-4. TWRS Tank Unique Phenomena

Facility Name	Type	Flammable Gas?	Ferrocyanide?	Organics Separable Phase?	TOC in Liquids?	TOC in Solids?	High Heat (>40,000 Btu/hr)?	Pyrophorics?	Syphoning ?	Criticality?	Corrosivity?
241-TX-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	No, Anantatmula 1994 WHC-EP-0772
241-TY-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	Yes, Watchlist tank: 1/91	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	(A1)	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker
241-U-101	Single shell tank	No, Hodgson 1996 WHC-SD-WM-ER-526 Rev.1	No, Borsheim & Kirch 1991 WHC-EP-347 Rev. 0	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No evidence in non-Watchlist tank, assumed to be No	No, Hanlon 1996 WHC-EP-0182-94	No, Personal communication with Dan Reynolds	No, PHA for Tank Farm Waste Transfer Syphoning Events	No, Rogers 1994 WHC-SD-SQA-CSA-20363 Rev. 0	Assumed Leaker

Tables 3.1-5 Series

Table 3.1-5-A. TWRS Facility Hazard Identification.

Facility 241-A-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
A TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6 (b)	2, 3 (b)	NA	11 (c)	NA	NA	NA
241-A-101	SST	2 (b)	6,7,8 (a)	15 (b)	11,13,14 (a)	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	A-101 is a watchlist tank (hydrogen/flammable gas, organics). [a]
241-A-102	SST	2 (b)	6,7,8 (a)	15 (b)	11,14 [c]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-A-103	SST	2 (b)	6,7,8 (a)	15 (b)	11,14 [c]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	Recommended to be added as a watchlist tank (hydrogen/flammable gas). [a]
241-A-104	SST	2 (b)	6,7,8 (a)	15 (b)	11,14 [c]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-A-105	SST	2 (b)	6,7,8 (a)	15 (b)	11,14 [c]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-A-106	SST	2 (b)	6,7,8 (a)	15 (b)	11,14 [c]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-A-151	Diversion box (outside farm)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-A-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-A-COBs	Cleanout boxes (11)	2 (b)	6,7,8 (a)	NA	NA	NA	NA	NA	4 [d]	NA	NA	NA	NA	NA	NA
241-A-501	Water sluicing bldg	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	2,10 [c]	NA	3 [c]	NA
241-A-701	Compressor building (outside fence)	NA	NA	NA	4,5 [c]	NA	NA	1,2,3,5 (c)	1,2,4,5,9, 10,16 [c]	2,3,4 [c]	6 [c]	10,13 [c]	6 [c]	6 [c]	Outside of building: underground fuel storage tank, and inst. air receiver

Table 3.1-5-A. TWRS Facility Hazard Identification.

Facility 241-A-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-A-101	Pump pit B (6)(1)	NA	NA	NA	NA	NA	NA	NA	4 [d]	NA	NA	NA	NA	NA	(1) Pits are inactive and weather enclosed with polyurethane foam.
241-A-101(3), 105(2), 106(1)	Sluice pits (1)	NA	NA	NA	NA	NA	NA	NA	4 [d]	NA	NA	NA	NA	NA	NA
241-A-01H	Distributor pit(1)	NA	NA	NA	NA	NA	NA	NA	4(d)(2)	NA	NA	NA	NA	NA	(2) Pit leak detector not in service
241-A-401	Condenser bldg	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	Bldg. covered with taped covers, with penetrations in covers. Tumbleweed buildup on North side of building. We did not enter the building. Locked and controlled by HPTs.
241-A-401	Diverter Caisson	NA	NA	NA	NA	NA	NA	NA	4 [d]	NA	NA	NA	NA	NA	NA
241-A-702	Ventilation facility	NA	NA	NA	NA	NA	NA	1,2,3,5 [c]	4,10, 11,16 [c]	2,4 [c]	NA	NA	NA	NA	NA
241-A-271	Control room	NA	NA	NA	NA	NA	NA	3,5 [c]	4,5,10(3)(c)	2,4 [c]	NA	10 [c]	NA	NA	(3) 2 Substations outside of control room
241-A-350	Drainage lift station & catch tank	NA	NA	NA	NA	NA	NA	5 [c]	4,9,10 [c]	2,3 [c]	NA	11 [c]	NA	NA	NA

Table 3.1-5-A. TWRS Facility Hazard Identification.

Facility 241-A-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	ALC flush buildings (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Leak detection lateral for tanks 103,105,106	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-A-A&B	Valve pits	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	5(4)(c)	NA	NA	3(5)(c)	(4) Crane parked next to valve pit (5) Heat traces in pit
	Old portable exhauster near 105-A	NA	NA	NA	NA	NA	NA	1,3,5 [c]	4,10 [c]	2,4 [c]	NA	NA	NA	NA	NA
241-A-831	Old Ventilation stack bldg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241-A-831 bldg inactive.
241-A-CT-400	Cooling towers (outside fence)	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
	Pump station for cooling towers	NA	NA	NA	NA	NA	NA	5 [c]	4,9,10 [c]	2,3 [c]	NA	10 [c]	NA	NA	
	"Lift" station pumping station	NA	NA	NA	NA	NA	NA	5 [c]	4,9,10 [c]	2,3 [c]	NA	NA	NA	NA	NA

Table 3.1-5-A. TWRS Facility Hazard Identification.

Facility 241-A-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Hazardous storage shed (outside fence)	NA	NA	NA	17(7)(c)	NA	NA	3,5 [c]	4,10 [c]	2,4 [c]	NA	NA	NA	NA	(7) Sign indicated flammable materials, did not open shed to verify
A-08,F-561	Raw water valve pit, valve pit, crib sampling station	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	10 [c]	NA	NA	NA
	Old ion exchanger	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive
216-A-28	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-A-30	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-A-36A	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-A-36B	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-A-37-1	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-A-45	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-417	Catch tank	2[8]	NA	15 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	[8] Assume potentially the same as tank waste.[c]
244A	Lift station (DCRT)	2 (b)	NA	NA	NA	NA	NA	NA	4 (c)	NA	NA	NA	NA	NA	NA
241-A-153	Diversion box	2 (b)	NA	NA	NA	NA	NA	NA	4 (c)	NA	NA	NA	NA	NA	NA
241-A-302A	Catch tank	2 (b)	NA	15 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-A. TWRS Facility Hazard Identification.

Facility 241-A-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-A-302B	Catch tank	2 (b)	NA	15 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-A-501	Valve pit	2 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F-562	Valve pit	2 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AX-80	Service pit	2 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
F-505	Diverter caisson	2 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
AX-152	Valve pit	2 (b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-A-431	Ventilation building	[9]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	[9] Did not look into this building, it is locked up and Inactive[c]
	Fuel storage tank	[10]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	[10] Contents and serviceability of this tank unknown.[c]

(a) OSD-T-151-00030, Rev. B-20
(b) COG engineer: Randy Powers
(c) Field Walkdown, 4/16/96, Charlotte Zaccone, Randy Powers, Matt Tiffany, Dave Aquilina, Suzanne Lindberg, David A Bragg
(d) COG engineer: Joe Jones

Table 3.1-5-AN. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AN TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6 (b)	2, 3 (b)	NA	11 (c)	NA	NA	NA
241-AN-101	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1)	NA	NA	2(b)(3), 3(d)(b)	4,6,9,10, 14 [b]	3 [b]	(c)(b)	11,15(b)(c)	NA	NA	(1) Hydrogen not above LFL
241-AN-102	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1)	NA	NA	2(b)(3), 5,(b) 3(d)(b)	4,6,9,10, 14 [b]	3 [b]	(c)(b)	11,15(b)(c)	NA	NA	(2) Ammonia (3) Pump bearings
241-AN-103	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1), 14(a)(2)	NA	NA	2(b)(3), 3(d)(b), 7(5)(b)	4,6,9,10, 14 [b],10(6)	2,3 [b]	(c)(b)	11,15(b)(c)	NA	NA	AN-103 is a watchlist tank (hydrogen/ flammable gas). [a] (4) Mixer pump motor (caustic addition)
241-AN-104	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1), 14(a)(2)	NA	NA	2(b)(3), 3(d)(b), 7(5)(b)	4,6,9,10, 14 [b],10(6)	2,3 [b]	(c)(b)	11,15(b)(c)	NA	NA	AN-104 is a watch list tank (hydrogen/ flammable gas) . [a] (5) Sealed camera units in the dome space (6) Camera motor
241-AN-105	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1), 14(a)(2)	NA	NA	2(b)(3), 3(d)(b), 7(5)(b)	4,6,9,10, 14 [b],10(6)	2,3 [b]	(c)(b)	11,15(b)(c)	NA	NA	AN-105 is a watch list tank (hydrogen/ flammable gas). [a] (7) Mixer pump motor
241-AN-106	DST	2 [b],4 [b]	6,7,8 [b]	15 [b]	11(b)(1)	NA	NA	2(b)(3), 3(d)(b)	4,6,9,10, 14 [b]	3 [b]	(c)(b)	11,15(b)(c)	NA	NA	NA
241-AN-107	DST	2 [b]	6,7,8 [b]	15 [b]	11(b)(1), 14(a)(2)	NA	NA	2(b)(3), 3(d)(b), 7(5)(b)	4,6,9,10, 14 [b],10(6)	2,3 [b]	(c)(b)	11,15(b)(c)	NA	NA	NA
COB-AN-1	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA

Table 3.1-5-AN. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophonc	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity , Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
COB-AN-2	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-3	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-4	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-5	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-6	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-7	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-8	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
COB-AN-9	Cleanout box	2 [b]	6,7,8 [b]	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
241-AN-273	Compressor building	NA	NA	NA	NA	NA	NA	1,2,3, 5 [b]	4,7,8,9,1 0,11, 14 [b]	2,3,4 [b]	5 [b]	7,13 [b]	2,6 [b]	1,3 [b]	NA
241-AN-01D	Condensate receiver pit	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	5 [b]	3 [b]	NA	NA	NA
241-AN	Flush pit	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
241-AN-271	Instrument building	NA	NA	NA	NA	NA	NA	2,3,5 [b]	3,4,5, 6,7,8, 11,14, 16(8)(b)	2,4 [b]	NA	NA	NA	3 [b]	(8) 480 V. considered high voltage
	Service pit	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	NA	10 [b]	NA	3 [b]	NA
241-AN-A	Valve pit	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	5 [b]	3,10 [b]	NA	NA	NA
241-AN-B	Valve pit	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	5 [b]	3,10 [b]	NA	NA	NA

Table 3.1-5-AN. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Satellite accumulation area	1, 2, 4	NA	NA	2, 10, 17(tank contact wastes)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Annulus pits (7)	NA	NA	NA	NA	NA	NA	2,5 [b]	4 [b]	2,3 [b]	5 [b]	3 [b]	NA	NA	NA
	Leak detector pits (7)	NA	NA	NA	NA	NA	NA	2,5 [b]	4 [b]	2,3 [b]	5 [b]	3 [b]	NA	NA	NA
	Central pump pits (7)	NA	NA	NA	NA	NA	NA	2,5 [b]	4 [b]	2,3 [b]	5 [b]	3 [b]	NA	NA	NA
241-AN-01E	Supernate receiver pit (1)	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	5 [b]	3 [b]	NA	NA	NA
	Ventilation pits (4)	NA	NA	NA	NA	NA	NA	NA	4 [b]	NA	5 [b]	3 [b]	NA	NA	NA
241-AN-274	Caustic addition control building	2 [b]	NA	NA	NA	NA	NA	2,4 [b]	4,9,10, 11 [b]	2,3 [b]	NA	NA	NA	3(9)(b)	(9) Heat trace
	Ventilation pad	NA	6,7 [b]	NA	11,14 [b]	NA	NA	1,2,3,4,5 [b]	4,6,10, 11,16 [b]	2,4 [b]	NA	NA	NA	3 [b]	NA
	Change trailer	NA	NA	NA	NA	NA	NA	NA	4,8,11 [b]	NA	NA	NA	5 [b]	3 [b]	NA

(a) OSD-T-151-00030 B-17
(b) COG Engineers: Bob Nicholson, Bill Meeuwsen, 4/4/96
(c) Crane loads in farm, tank
(d) Component part of Ventilation system

Table 3.1-5-AP. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AP TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6 (b)	2, 3 (b)	NA	11 (c)	NA	NA	NA
241-AP-101	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-102	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-103	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-104	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-105	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-106	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-107	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP-108	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	*Tank waste (b)
241-AP	Valve pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
COB-AP-07D	Clean out box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO COBs in AP Farm (b)
COB-AP-07E	Clean out box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO COBs in AP Farm (b)
COB-AP-07F	Clean out box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO COBs in AP Farm (b)

Table 3.1-5-AP. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AP	Flush pit	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	leak detection in sump
241-AP-273	Service Bldg.	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	11, 14 (c)	NA (c)	NA (c)	NA (c)	NA (c)	3 (c)	Space heater in service Bld.
241-AP-02D	Feed pump pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA
241-AP-07D	Mixer pump pit	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	07D pit empty
241-AP-07E	Mixer pump pit	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	07E pit empty
241-AP-07F	Mixer pump pit	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	07F pit empty
241-AP-271	Instrument building	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	4, 3, 16, 5, 6, 7, 8, 11, 14 (c)	NA (c)	NA (c)	NA (c)	5 (c)	3 (c)	NA
241-AP-701	Compressor building	NA (c)	NA (c)	NA (c)	4, 5, 10 (c)	NA (c)	NA	1, 2, 3, 5 (c)	4, 6, 8, 10, 11, 14, 16 (c)	2, 4 (c)	NA (c)	NA (c)	6, 8 (c)	3, 6 (c)	Small flammable storage cabinet located in compressor Bld. See SARA 313 report

Table 3.1-5-AP. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
K1 & K2	Vent Systems (Primary and annulus, seal pot pits)	2 (b)	6,7 (b)	NA (b)	4, 10, 11, 14 (b)	NA (b)	NA (b)	1, 2, 3, 5 (b)	4, 5, 6, 7, 10, 11, 14 (b)	2, 4 (b)	NA (b)	15* (b)	NA (b)	3 (b)	Hatchways are a mass; gravity, height hazard
01A-08A	Central Pump pits (101-108)	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	9, 14 (b)	3 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
01B-08B	Annulus Pump pits (101-108)	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	9, 14 (b)	3 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
03C,05C	Leak Detection Pit	NA (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	9, 14 (b)	3 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
03D	Drain Pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
Change trailer	MO 815	NA (b, c)	NA (b)	NA (b)	7,13 (b), did not open cabinet, assumed coontents	NA (b)	NA (b)	NA (b)	14 (b)	NA (b)	1 (b) (transport vehicles)	NA (b)	5 (b) 2 gas bottles outside trailer supporting PCM1B	3 (b) space heaters in trailer	NA

Table 3.1-5-AP. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AP Tank Farm	Satellite Accumulation Area	1, 2, 4	NA	NA	2, 10, 17(tank contact wastes)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(a) = OSD-T-151-00007
(b) = Cognizant engineer judgement, Katie White, 3/25/96
(c) = Walkdown, 3/23/96, P.K. Brockman, S. Brewe, K. White, C. Saget
* All from reference b

Table 3.1-5-AW. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AW TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6 (b)	2, 3 (b)	NA	11 (c)	NA	NA	NA
241-AW-101	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3	NA (c)	11 (c)	NA (c)	NA (c)	AW-101 is a watch list tank (hydrogen/ flammable gas) (d) *Tank waste (b)
241-AW-102	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3	NA (c)	11 (c)	NA (c)	NA (c)	*Tank waste (b)
241-AW-103	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3 (c)	NA (c)	11 (c)	NA (c)	NA (c)	*Tank waste (b)
241-AW-104	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3 (c)	NA (c)	11 (c)	NA (c)	NA (c)	*Tank waste (b) Recommended to be added as a watchlist tank. (d)
241-AW-105	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3 (c)	NA (c)	11 (c)	NA (c)	NA (c)	*Tank waste (b)

Table 3.1-5-AW. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AW-106	DST	2 (a)	6, 7, 8 (a)	15 (a)	4, 11, 14 (a)	5* (a)	NA (a)	5 (c)	4,6,9,10, 14 (c)	3 (c)	NA (c)	11 (c)	NA (c)	NA (c)	*Tank waste (b)
COB-AW-09	Cleanout box	2 (a)	6, 7, 8 (a)	NA	NA	NA	NA	NA	4 (c)	NA	NA	NA	NA	NA	NA
COB-AW-10	Cleanout box	2 (a)	6, 7, 8 (a)	NA	NA	NA	NA	NA	4 (c)	NA	NA	NA	NA	NA	NA
241-AW-701	Compressor building	NA (c)	NA (c)	NA (c)	4, 5, 10 (c)	NA (c)	NA	1, 2, 3, 5 (c)	4, 6, 8, 10, 11, 14, 16 (c)	2, 4 (c)	NA (c)	NA (c)	6, 8 (c)	3, 6 (c)	Small flammable storage cabinet located in compressor Bld. See SARA 313 report
241-AW-02E	Feed pump pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (c)	9, 14 (c)	3 (c)	NA (c)	NA (c)	NA (c)	NA (c)	The feed pump pit belongs to the 242-A Evaporator .
241-AW	Flush pit	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	Leak detection in sump
241-AW-271	Instrument building	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	4, 3, 16, 5, 6, 7 , 8, 11, 14 (c)	NA (c)	NA (c)	NA (c)	5 (c)	3 (c)	NA
241-AW-272	Operations support facility	See comment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	For maintenance shop materials refer to "Hazardous Materials Inventory Database," 1/10/96
241-AW-273	Service building	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	NA (c)	11, 14 (c)	NA (c)	NA (c)	NA (c)	NA (c)	3 (c)	Space heater in service Bld.

Table 3.1-5-AW. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AW-A	Valve pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
241-AW-B	Valve pit	2 (b)	NA (b)	15 (b)	NA (b)	NA (b)	NA (b)	5 (b)	14 (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA (b)	NA
	Satellite Accumula-tion Area	1, 2, 4	NA	NA	2, 10, 17(tank contact wastes)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(a) = OSD-T-151-00007
(b) = Cognizant engineer interview, Katie White, 3/25/96
(c) = Walkdown, 3/23/96, P.K. Brockman, S. Brewe, K. White, C. Saget
* All from reference b
(d) = OSD-T-151-00030, Rev B-17, "Operating Specifications for Watch List Tanks"

Table 3.1-5-AX. TWRS Facility Hazard Identification.

Facility 241-AX-Tank Farm	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AX TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6 (b)	2, 3 (b)	NA	11 (c)	NA	NA	NA
241-AX-101	SST	2 [b]	6,7,8 [a]	15 [b]	11,14 [a]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	AX-101 is a watch list tank (hydrogen/flammable gas). [a]
241-AX-102	SST	2 [b]	6,7,8 [a]	15 [b]	11,13,14 [a]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	AX-102 is a watch list tank (organics). [a]
241-AX-103	SST	2 [b]	6,7,8 [a]	15 [b]	11,14 [a]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	AX-103 is a watch list tank (hydrogen/flammable gas). [a]
241-AX-104	SST	2 [b]	6,7,8 [a]	15 [b]	11,14 [a]	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-AX-155	Diversion box	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-AX-COBs	Cleanout boxes (10)	2 (b)	6,7,8 (a)	NA	NA	NA	NA	NA	4(d)	NA	NA	NA	NA	NA	NA
241-AX-152	Diverter station	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	10,11 [c]	NA	NA	Diverter station includes a valve pit
241-AX-A&B	Flush pits (2)	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	Each metal cover has an open penetration
241-AX-101(1), 102 (2), 103 (2), 104 (2)	Pump pits B (1)	NA	NA	NA	NA	NA	NA	NA	4(d)(2)	NA	NA	NA	NA	NA	(1) Pits are inactive and weather enclosed with polyurethane foam. (2) Operable pit leak detector
241-AX-101 (2), 102 (1), 103 (1), 104 (1)	Sluice pits C,D (1)	NA	NA	NA	NA	NA	NA	NA	4(d)	NA	NA	NA	NA	NA	NA
241-AX-101	Distributor pits (1)	NA	NA	NA	NA	NA	NA	NA	4(d)(2)	NA	NA	NA	NA	NA	NA
241-AX-562	Valve pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-AX	Leak detection pits (4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Probe cords to each pit were lying on the ground.

Table 3.1-5-AX. TWRS Facility Hazard Identification.

Facility 241-AX-Tank Farm	Type	A-Corrosive	B-Explosive/Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-A-211	Control room	NA	NA	NA	NA	NA	NA	NA	4,5(3)(c)	NA	NA	NA	NA	NA	(3) Substation outside of control room
241-A-350	Drainage lift station & catch tank	NA	NA	NA	NA	NA	NA	5 [c]	4,9,10 [c]	2,3 [c]	NA	11 [c]	NA	NA	NA
241-AX	Raw water service pit	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	10 [c]	NA	NA	NA
241-AX-801A	Instrument building	NA	NA	NA	NA	NA	NA	NA	4,11,16 [c]	NA	NA	NA	NA	3 [c]	NA
241-AX-A&B	Valve pits	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	3(4)(c)	(4) Heat traces in pit
241-AX-801B	Instrument building	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3 [c]	Instruments all isolated except for a couple of leak signals. This building had a spill of aging waste previously.

Table 3.1-5-AX. TWRS Facility Hazard Identification.

Facility 241-AX-Tank Farm	Type	A-Corrosive	B-Explosive/Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Old steam coil caissons (3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Caissons are isolated and filled with sand.
241-AX-2707	Change trailer	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-AX-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-AX-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-AX-501	Valve pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(a) OSD-TI-151-00030 B-20
(b) COG engineer: Randy Powers 5/9/96
(c) Field Walkdown, 4/16/96 Charlotte Zaccone, Randy Powers, Matt Tiffany, Dave Aquilina, Suzanne Lindberg, David Bragg
(d) COG engineer: Joe Jones, 5/9/96

Table 3.1-5-AY. TWRS Facility Hazard Identification.

Facility Aging Waste Tanks 101 & 102-AY	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AY TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6,9,10, 14 [b]	2, 3 [b]	5,7 [b]	3,11 [b]	NA	NA	NA
241-AY-101	DST	2 [b]	6,7,8 [b], 11(1)[b]	15 [b]	11,14(a)	5 [b]	NA	NA	4,6,9,14 4(2)[b]	3 [b]	NA	NA	9 [b]	NA	Has been recommended to be included as a watch list tank. [a] (1) Pu Oxide (2) High level probe
241-AY-102	DST	2,5 [b]	6,7,8 [b], 11(1)[b]	15 [b]	11,14 [b]	5 [b]	NA	NA	4(2)[b]	3 [b]	NA	NA	9 [b]	NA	(3) Flexible receiver
241-AY-152	Sluice transfer box	Isolated [b]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-AY-801	Instrume nt building	NA	NA	NA	NA	NA	NA	3 [b]	4,5,6,7,8 ,11,16,1 8 [b]	4 [b]	NA	16 [b]	NA	3 [b]	NA
241-AY-	Central pump pits (2)	NA	6(7)[b]	NA	4[b]	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-AY-	Sluice pits B,C,D,E (8)	NA	NA	NA	4[b]	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	102-AY-02D has a lube oil pump
241-AY-	Annulus pump pits F (2)	NA	NA	NA	4[b]	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-AY-	Raw water valve pits (10) [b]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16 [b]	NA	NA	NA
241-AY-	Leak detector pits (3)	2 [b]	NA	NA	NA	NA	NA	5 [b]	4,6,9, 10, [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-702-A (in A farm)	Ventilatio n facility	NA	NA	NA	NA	NA	NA	1,2,3 [b]	4,6,10, 11 [b]	2,4 [b]	NA	16 [b]	NA	NA	NA

Table 3.1-5-AY. TWRS Facility Hazard Identification.

Facility Aging Waste Tanks 101 & 102-AY	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AY-	Annulus ventilation fans (2)	NA	NA	NA	NA	NA	NA	1,2,3 [b]	4,6,10, 11 [b]	2,4 [b]	NA	NA	NA	NA	NA
241-AY-501	Condensate valve pit	NA	NA	NA	NA	NA	NA	NA	4, 6,14 [b] (leak detector)	NA	NA	16 [b]	NA	NA	NA
	Metal storage-construction	NA	NA	NA	NA	NA	NA	NA	12 [c]	NA	NA	NA	NA	NA	NA
	New ventilation recirculation bldgs (2)	NA	NA	NA	NA	NA	NA	NA	4 , 6 [b][c]	NA	NA	16 [b]	NA	NA	NA
	New primary ventilation intake (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Satellite Accumula-tion Area	1, 2, 4	NA	NA	2, 10, 17(tank contact wastes)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Change trailers (2)	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	5 [c]	NA	NA

(a) OSD-TI-151-00030 B-17
[b] COG engineer: Matt Tiffany
(c) Walkdown of AY Tank Farm: Charlotte Zaccone, Matt Tiffany, Suzanne Lindberg, Corey Saget, 4/15/96

Table 3.1-5-AZ. TWRS Facility Hazard Identification.

Facility Aging Waste Tanks 101 & 102-AZ	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
AZ TANK FARM		NA	NA	NA	NA	NA	NA	5 (c)	6,9,10, 14 (b)	2, 3 (b)	5,7 (b)	3,11 (b)	NA	NA	NA
241-AZ-101	DST	2,5 [b]	6,7,8 [b], 11(1)(b)	15 [b]	11,14[a]	5 (b)	NA	NA	4(2)(b)	3 [b]	NA	NA	9 [b]	NA	(1) Pu Oxide (2) High level probe
241-AZ-102	DST	2,5 [b]	6,7,8 [b], 11(1)(b)	15 [b]	11,14 [b]	5 (b)	NA	NA	4(2)(b)	3 [b]	NA	NA	9 [b]	NA	(3) Flexible receiver
241-AZ-161	Airlift circulator caisson	2(4)(b)	NA	NA	NA	NA	NA	NA	4 [b]	NA	6(5)(b)	10,12(6) (b)	NA	NA	(4) Potential, does not currently exist
241-AZ-162	Airlift circulator caisson	2(4)(b)	NA	NA	NA	NA	NA	NA	4 [b]	NA	6(5)(b)	10,12(6) (b)	NA	NA	(5) Air flow through ALC ~4 cfm, 35 psi (6) Hatch door
241-AZ-151	Catch tank	2(7)(b)	6,7,8 [b]	15 [b]	11(b)(1), 14(a)(2)	NA	NA	2(b)(3), 3(d)(b), 7(5)(b)	4 [b],10(6)	2,3 [b]	(c)(b)	15(b)(c)	NA	3(b)(d)	(7) Potential waste transfer through 152-AZ (151 catches 152 drain)
241-AZ-152	Sluicing transfer box	2(7)(b)	6(7)(b)	NA	11(7)(b)	NA	NA	NA	4 [b]	NA	NA	NA	NA	NA	NA
241-AZ-154	Steam condensate pump pit & catch tank	NA	NA	NA	NA	NA	NA	2,5 [b]	4,9,10 [b]	2,3 [b]	NA	NA	NA	NA	NA
241-AZ-	Cleanout boxes	2,5 [b]	6,7,8 [b], 11(1)(b)	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
241-AZ-155	Contaminated storage pit	2(8)(b)	NA	NA	NA	NA	NA	NA	7,9, 10(8)(b)	NA	NA	NA	NA	NA	Zip cord in cover penetration
241-AZ-801A	Instrument building	NA	NA	NA	NA	NA	NA	3 [b]	4,5,6,7,8 ,11,16.1 8 [b]	4 [b]	NA	NA	NA	3 [b]	NA

Table 3.1-5-AZ. TWRS Facility Hazard Identification.

Facility Aging Waste Tanks 101 & 102-AZ	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AZ-01A, 02A	Central pump pits A (2)	NA	NA	NA	NA	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-AZ-01B-E, 02B-E	Sluice pits B,C (4)	NA	NA	NA	NA	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-AZ-01F, 02F	Annulus pump pits F (2)	NA	NA	NA	NA	NA	NA	5 [b]	4,6,8,9, 10,16 [b]	2,3 [b]	NA	16 [b]	NA	NA	NA
241-AZ-	Valve pits (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16 [b]	NA	NA	NA
241-AZ-101/102	Leak detector pits (2)	2 [b]	NA	NA	NA	NA	NA	5 [b]	4,6,9, 10, [b]	2,3 [b]	NA	16 [b]	NA	NA	Rock sitting in cover block penetration (101-AZ)
241-702-A (in A farm)	Ventilation facility	NA	NA	NA	NA	NA	NA	1,2,3 [b]	4,6,10, 11 [b]	2,4 [b]	NA	16 [b]	NA	NA	NA
241-AZ-	Annulus ventilation fans (2)	NA	NA	NA	NA	NA	NA	1,2,3 [b]	4,6,10, 11 [b]	2,4 [b]	NA	NA	NA	NA	NA
	Primary ventilation recirculation bldg (2)	NA	NA	NA	NA	NA	NA	NA	4 [c]	NA	NA	NA	NA	NA	NA
	AY/AZ diesel generators	NA	NA	NA	NA	NA	NA	1,2,4,5 [b]	1,4,5,8,10,14,16 [b]	2 [b]	NA	NA	NA	NA	NA
241-AZ-	Transformers 2 (outside fence)	NA	NA	NA	NA	NA	NA	NA	3,16 [c]	NA	NA	NA	NA	NA	Transformers do not contain PCBs.
216-A-39	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	New primary ventilation intake facilities (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-AZ. TWRS Facility Hazard Identification.

Facility Aging Waste Tanks 101 & 102-AZ	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-AZ-	Transformers 2 (outside fence)	NA	NA	NA	NA	NA	NA	NA	3,16 [c]	NA	NA	NA	NA	NA	Transformers do not contain PCBs.
216-A-39	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	New primary ventilation intake facilities (2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

(a) OSD-TI-151-00030 B-17(b) COG engineer: Matt Tiffany
(c) Walkdown of AY Tank Farm: Charlotte Zaccone, Matt Tiffany, Suzanne Lindberg, Corey Saget, 4/15/96

Table 3.1-5-B. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
B Farm		NA	NA	NA	9*, 17 [wd]	NA	NA	NA	3, 4, 6,16, 18** [wd]	NA	NA	2*** [wd]	NA	NA	*Two small change trailers on east side of B Farm **High voltage at north end of Farm ***A few stairs leading to change trailers Only tank B-103 is on the organic watch list. None on the high heat or flammable gas watch list [d3]
241-B-101	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-102	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-103	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14*** [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open) ***Tank B-103 is on the organic watch list. Not on flammable gas watch list [d3]
241-B-104	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)

Table 3.1-5-B. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-B-105	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-106	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-107	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-108	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-109	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-110	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-111	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open) [d3]

Table 3.1-5-B. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-B-112	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-201	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-202	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-203	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
241-B-204	SST	1-6 [d1, i1]	6,7,8 [d1, i1]	15 [d1]	11,13,14 [d1]	NA	NA	NA	6, 14* [wd]	NA	NA	11** [wd]	NA	NA	*Temperature probes, liquid level devices, etc **Tank has pits, but all are weather covered and inactive (none open)
216-B-55	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive and isolated. [i2]
216-B-62	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive and isolated. [i2]
216-B-63	Ditch	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive, backfilled with clean fill, downposted to underground radioactive material area, and permanently isolated. [i2]

Table 3.1-5-B. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica i	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-B-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
241-B-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
241-B-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
241-B-154	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
241-B-252	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
242-B-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion boxes are all isolated and weather covered.
241-B-301B	IMUST rad contaminat ed	2 [d4]	6 [d4]	15 [d4]	11 [d4]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Tank is isolated [d4]
241-B-302B	IMUST rad contaminat ed	2 [d4]	6 [d4]	15 [d4]	11,13 [d4]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Tank is stabilized and isolated [d4]
216-B-3	Pond (B expansion ponds)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Expansion ponds active. Will remain under WHC. Ecology certified clean closed under RCRA, 6/27/95 [i2]

Table 3.1-5-B. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Satellite accumulation area	1,2,4* [wd]	NA	NA	2, 6, 10, 17*	NA	NA	NA	NA	NA	NA	NA	NA	NA	*Satellite accumulation boxes were not opened during walkdowns. Hazards listed are the expected, potential hazards.

d1 = OSD-T-151-00013, Rev D-10
d3 = WHC-EP-0182-93
d4 = WHC-SD-EN-ES-040, Rev. 0
i1 = interview with cognizant engineer, Randy L Powers, 4/3/96.
i2 = information provided by Kip McDowell, WHC, 4/18/96.
wd = walkdown of B Farm, 4/5/96, DA Bragg and S Brewe

Table 3.1-5-BX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
BX FARM		1* [wd]	NA	NA	9 [wd]	NA	NA	NA	3, 4, 6, 16, 18 [wd]	NA	NA	2**, 16 [wd]	5, 12*** [wd]	NA	*Large tank of phosphoric acid near BX-112 **Stairs leading into change trailer ***Gas bottles for PCM1B near change trailer, fire hydrant in tank farm. *No tanks are high heat, organic or flammable gas watchlist tanks, but BX-107 has been recommended for addition to the flammable gas watchlist [d3, d7]
241-BX-101	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-102	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-103	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-104	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open

Table 3.1-5-BX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BX-105	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Open pit(caisson w/nothing inside, no lid) south of the tank [wd]
241-BX-106	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-107	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	*Tank BX-107 has been recommended for addition to the flammable gas watchlist.[d7] **Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-108	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-109	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-110	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open

Table 3.1-5-BX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes --->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BX-111	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
241-BX-112	SST	1-6, [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11, 13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	**Temperature probes, liquid level devices ***Tanks have pits, but none open
244-BX	Catch station	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	See DCRT below (same facility)
241-BXR-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered.
241-BXR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered.
241-BXR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered.
244-BX	DCRT	2, 6 (salt well pumping waste) [d4]	6,7,8 (same as tank waste)	15 (same as tank waste)	11, 13, 14 (same as tank waste)	NA	NA	3, 5 [d5]	4, 6, 9, 10, 11 [d5]	2,3,4 [d5]	5* [d5]	3, 11** [d5]	NA	3 [d5]	*Crane needed to access pits for filter changes **DCRT has pits, but they aren't open (not really hazards)
241-BX-302A	IMUST rad contaminate d	unknown [d2, d6]	6 (low risk) [d2]	15 (low risk) [d2]	11 (low risk), 13 (no data) [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
241-BX-302B	IMUST rad contaminate d	unknown [d2, d6]	6 (low risk) [d2]	15 (low risk) [d2]	11 (low risk), 13 (no data) [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.

Table 3.1-5-BX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BX-302C	IMUST rad contaminated	unknown [d2, d6]	6 (low risk) [d2]	15 (low risk) [d2]	11 (low risk), 13 (no data) [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
244-BXR-001	IMUST rad contaminated	6 (metal waste slurry [d2]	6 (low risk) [d2]	no risk [d2]	11, 13 (low risk) [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
244-BXR-002	IMUST rad contaminated	1 [d2]	6 (low risk) [d2]	no risk [d2]	11, 13 (low risk) [d2] 12 [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
244-BXR-003	IMUST rad contaminated	1 [d2]	6 (low risk) [d2]	no risk [d2]	11, 13 (low risk) [d2] 12 [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
244-BXR-011	IMUST rad contaminated	1 [d2]	6 (low risk) [d2]	no risk [d2]	11, 13 (low risk) [d2] 12 [d2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	Inactive tank.
244-BX Instrument Bldg.	Instrument Building	NA	NA	NA	8 [wd]	NA	NA	NA	3,4, 8, 11, 14, 16 [wd]	NA	NA	NA	NA	3, 6 [wd]	Raw water line to service pit goes through this building.
BX/BY Raw Water Service Pit	Raw water service pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11*, 16 [wd]	NA	NA	*Pit, but not open (it is covered) Raw water service pit for BX and BY Farms

Table 3.1-5-BX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Satellite accumulation area	1,2,4* [wd]	NA	NA	2, 6, 10, 17*	NA	NA	NA	NA	NA	NA	NA	NA	NA	*Satellite accumulation boxes were not opened during walkdowns. Hazards listed are the expected, potential hazards.

d1 = OSD-T-151-00013, Rev D-10d2 = WHC-SD-EN-ES-040, Rev. 0
d3 = WHC-EP-0182-93d4 = WHC-SD-WM-ISB-001, Volume 2, Rev. 0
d5 = 244-BX DCRT Facility Manual Using STONEview/CATIA, Stone and Webster Advanced Systems Development Services, Inc., March 1994.
d6 = WHC-EP-0861, Rev. 0.d7 = OSD-T-151-00030, Rev. B-17
i1 = interview with cognizant engineer, Randy L Powers, 4/3/96wd = walkdown of BX Farm, 4/5/96, DA Bragg, RL Powers, PK Brockman, and S Brewe

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
BY FARM		NA	NA	NA	8 [wd]	NA	NA	NA	3, 4, 6, 16, 18 [wd]	NA	1 [wd]	16 [wd]	NA	NA	Vans in farm associated with sampling activities. [wd] Tanks BY-103, 104, 105, 106, 107, 108, 110, 111, and 112 are ferrocyanide watchlist tanks. *No flammable gas, high heat, or organic watchlist tanks, but BY-101, 102, 103, 105, 106, and 109 have been recommended for addition to the flammable gas watchlist [d3, d5]
241-BY-101	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	*Tank BY-101 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-102	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	*Tank BY-102 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BY-103	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	Tank BY-103 is on the ferrocyanide watchlist. *Tank BY-103 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-104	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-104 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-105	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	Tank BY-105 is on the ferrocyanide watchlist. *Tank BY-105 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BY-106	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	Tank BY-106 is on the ferrocyanide watchlist. *Tank BY-106 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-107	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-107 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-108	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-108 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BY-109	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14** [wd]	2, 3 [wd]	NA	11*** [wd]	NA	NA	*Tank BY-109 recommended for addition to flammable gas watchlist [d5] **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open)
241-BY-110	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-110 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-111	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-111 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-112	SST	1-6 [i1, d1]	6, 7, 8 [i1, d1]	15 [d1]	11, 13, 14 [d1]	NA	NA	NA	6, 14** [wd]	NA	NA	11*** [wd]	NA	NA	Tank BY-112 is on the ferrocyanide watchlist. **Temperature probes, liquid level devices, etc. ***Pits on tank, but none open
241-BY-302	Compressor building	NA	NA	NA	8 [wd]	NA	NA	1, 2, 3, 5 [wd]	4, 8, 10, 11, 14, 16 [wd]	2, 4 [wd]	NA	NA	6, 8 [wd]	3, 6 [wd]	241-BY-302 replaced with a new compressor skid. These hazards refer to the new compressor skid.

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-BYR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [rb, wd]
241-BYR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [rb, wd]
241-BYR-155	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [rb, wd]
216-BY-201	IMUST rad contaminated	2? (no data) [d2]	no data [d2]	no data [d2]	no data [d2]	NA	NA	NA	no data available [d2]	NA	NA	NA	NA	NA	No information found on this IMUST.
241-BY-301	Instrument building	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241-BY-301 abandoned, replaced by 254-BY and 244-BX Instrument Buildings.
	Satellite accumulation area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	BY Farm shares a satellite accumulation area with BX Farm.
241-BYR-154	Diversion Box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [rb, wd]
254-BY	Instrument Building	NA	NA	NA	8 [wd]	NA	NA	NA	3, 4, 8, 11, 14, 16 [wd]	NA	NA	NA	NA	3, 6 [wd]	NA

Table 3.1-5-BY. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Valve Pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Valve pit is isolated and weather covered [rb, wd]

d1 = OSD-T-151-00013, Rev D-10
d2 = WHC-EP-0861, Rev. 0
d3 = WHC-EP-0182-93
d4 = WHC-SD-WM-ISB-001, Volume 2, Rev. 0
d5 = OSD-T-151-00030, Rev. B-17
i1 = interview with cognizant engineer, Randy L Powers, 4/3/96
wd = walkdown of BY Farm, 4/5/96, DA Bragg, RL Powers, PK Brockman, and S Brewe
rb = East Area Tank Farms routing board status, 4/10/96.

Table 3.1-5-C. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
C FARM		NA	NA	NA	9 [wd]	NA	NA	NA	3, 4, 6, 16, 18 [wd]	NA	5* [wd]	2,3, 15**,16 [wd]	5, 12*** (fire hydrant and pressure testing of transfer lines)** [wd]	NA	*Abandoned crane in farm, also crane present for construction activities **Gas bottles for PCM1B, also in construction area and near FIC on tank C-105. Raw water hose (insulated and heat traced) lying on the ground from Control Building to Service Pit. Excavation associated with construction near C-106 [wd] ***Transfer lines are pressure tested before use (90-110 psi) [i3]. Only tanks C-102 and C-103 are on the organic watch list. Only C-106 is a high heat tank. Tanks C-108, C-109, C-111, and C-112 are on the ferrocyanide watchlist. No tanks on hydrogen watchlist, but tanks C-104 and C-107 have been recommended for addition to the flammable gas watchlist. [d3, d5]
241-C-101	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-102	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	*Tank C-102 is on the organic watch list. Not on hydrogen watchlist [d3] **All tanks have pits that are covered (no open pits, not a hazard) Supplied fresh air required to get near C-102 because of the potential for noxious vapor exposure.

Table 3.1-5-C. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-C-103	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	*Tanks C-103 is on the organic watch list. Not on hydrogen watchlist [d3] **All tanks have pits that are covered (no open pits, not a hazard) Supplied fresh air required to get near C-103 because of the potential for noxious vapor exposure.
241-C-104	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14* [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	*Tank C-104 has been recommended for addition to the flammable gas watchlist [d5] **All tanks have pits that are covered (no open pits, not a hazard)
241-C-105	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-106	SST	1-6* [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	*Tank C-106 is a high heat tank. [d3] **All tanks have pits that are covered (no open pits, not a hazard) Many transient hazards associated with construction activities (high voltage, gas bottles, ditches/excavations, welding equipment, etc) [wd]
241-C-107	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14* [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	*Tank C-107 has been recommended for addition to flammable gas watchlist [d5] **All tanks have pits that are covered (no open pits, not a hazard)
241-C-108	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	Tank C-108 is a ferrocyanide watchlist tank [d5] **All tanks have pits that are covered (no open pits, not a hazard)

Table 3.1-5-C. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-C-109	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	Tank C-109 is a ferrocyanide watchlist tank [d5] **All tanks have pits that are covered (no open pits, not a hazard)
241-C-110	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-111	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	Tank C-111 is a ferrocyanide watchlist tank [d5] **All tanks have pits that are covered (no open pits, not a hazard)
241-C-112	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	5 [wd]	6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11** [wd]	NA	NA	Tank C-112 is a ferrocyanide watchlist tank [d5] **All tanks have pits that are covered (no open pits, not a hazard)
241-C-201	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-202	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-203	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-C-204	SST	1-6 [d1, i1]	6, 7, 8 [d1, i1]	15 [d1]	11,13, 14 [d1]	NA	NA	NA	6, 14 [wd]	NA	NA	11** [wd]	NA	NA	**All tanks have pits that are covered (no open pits, not a hazard)
241-CR-271	Control room	NA	NA	NA	8 [wd]	NA	NA	NA	3,4, 8, 11, 14, 16 [wd]	NA	NA	10* [wd]	NA	3, 6 [wd]	*Ladder was outside of building [wd]
244-CR	CR-Vault	2,6 (salt well pumping waste) [d4]	6,7,8 (same as tank waste)	15 (same as tank waste)	11, 13, 14 (same as tank waste)	NA	NA	3,5 [c7]	4, 6, 9, 10, 11 [d4, c7]	2,3,4 [d4, c7]	NA	11,14* [d4, wd]	NA	3, 6 [d4]	*Vault has pits which are covered and the vault itself is covered
241-C-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]

Table 3.1-5-C. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophonc	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-CR-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-C-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-CR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-C-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-CR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-C-154	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diversion box shown as isolated on the routing board [rb] Believed to be buried near Hot Sem Works, 201-C [i2]
241-C-252	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All diversion boxes are isolated and weather covered [wd, rb]
241-C-301C	IMUST rad contamina ted	2 [d2]	6 [d2]	15 [d2]	11, 13 [d2]	NA	NA	NA	4* [wd]	NA	NA	NA	NA	NA	*heated vapor probe
241-C-801	Process storage building	unknown	unknown	unknown	unknown	unknown	NA	unknow n	unknown	unknow n	5 [H-2-4569	2, 3, 11, 12 [H-2-4569]	unknown	unknow n	Called the Cesium Load-Out Facility. Building not entered during walkdown because of construction. Building currently owned by Bechtel, used as a storage building [i2].
	Satellite accumulati on area	1,2,4* [wd]	NA	NA	2, 6, 10, 17*	NA	NA	NA	NA	NA	NA	NA	NA	NA	*Satellite accumulation boxes were not opened during walkdowns. Hazards listed are the expected, potential hazards.
241-C-601	Compress or building	NA	NA	NA	8 [wd]	NA	NA	1,2,3,5 [wd]	4, 8, 10, 11, 14, 16 [wd]	2, 4 [wd]	NA	NA	6, 8 [wd]	3, 6 [wd]	NA

Table 3.1-5-C. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-C	Valve pit	NA	NA	NA	NA	NA	NA	NA	4, 11 [c1]	NA	NA	11* [wd]	NA	3 [c1]	*Valve pit is covered. Located within the fresh air zone between C-102 and C-103.
	Water service pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11* , 16 [wd]	NA	NA	*Service pit is covered, but has a large open hole (4-5" in diameter) [wd]
296-P-16	Vent System for C-105 and C-106 tanks	2? (tank condensate)	6, 7, 8? (tank condensat e)	NA	11,13, 14? (tank waste condensat e)	NA	NA	3,5 [c2]	4, 10, 11, 14 [c2, d4]	2,4 [c2, d4]	NA	NA	NA	3 [d4]	Composition of condensate unknown. May not have same potential hazards as the tank contents. No data available.

c1 = H-2-73876
c2 = H-2-818561, Sheet 6.
c7 = H-2-41746
d1 = OSD-T-151-00013, Rev D-12
d2 = WHC-SD-EN-ES-040, Rev. 0
d3 = WHC-EP-0182-93
d4 = WHC-SD-WM-ISB-001, Volume 2, Rev. 0
d5 = OSD-T-151-00030, Rev. B-20
i1 = information from Randy L Powers, cognizant engineer, 4/3/96
i2 = information from David E Bowers, 5/7/96
i3 = information from David A Bragg, design authority, 5/13/96
rb = 200 East Area Tank Farms routing board status, 4/10/96
wd = walkdown of C Farm, 4/9/96, DA Bragg, RL Powers, D Aquilina, and S Brewe

Table 3.1-5-S. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
S FARM		NA	7* [wd]	NA	8, 10 *** 14 * [wd]	NA	NA	NA	4, 5, 6, 18 ** [wd]	NA	1* ** [wd]	NA	NA	5 **** [wd]	* 2 propane tanks northeast corner ** Power lines run south of the farm Old exhausters near S-101 and S-110 are under locked wooden structures. *** Sampling truck located on tank S-110 **** SHMS on tanks S-102, S-111, S-112
241-S-101	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	5, 7 * [wd]	6, 9, 10, 14 * [wd]	NA	NA	11 *** [wd]	6 * [wd]	NA	* Saltwell pump skid, includes water and air tanks. Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-102	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14**** ++ [d1, d6]	NA	NA	5 [wd]	6, 9, 10,14 * [wd]	2,3 [wd]	NA	11 *** [wd]	NA	NA	* SHMS, temperature probes, liquid level devices, etc. *** Pits on tank, but none open. **** Must have ammonia monitor or supplied air ++ Hydrogen and organics watch list tank.

Table 3.1-5-S. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-S-103	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 *** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-104	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 *** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-105	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 *** [wd]	NA	NA	*Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-106	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	5, 7 * [wd]	6, 9, 10,14 * [wd]	2,3 [wd]	NA	11 *** [wd]	6 [wd]	NA	* Saltwell pump skid, includes water and air tanks. Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-107	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	5, 7 * [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	6 [wd]	NA	* Saltwell pump skid, includes water and air tanks. Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-108	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	5 , 7 [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	6 [wd]	NA	* Saltwell pump skid, includes water and air tanks, and flammable gas monitor Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.

Table 3.1-5-S. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-S-109	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	5, 7 * [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	6 [wd]	NA	* Saltwell pump skid, includes water and air tanks. Temperature probes, liquid level devices, etc. *** Pits on tank, but none open.
241-S-110	SST	2 [i3]	6,7,8 [d6]	15 [d6]	10** , 11, 13, 14 [d6]	NA	NA	5 , 7 * [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	6 [wd]	NA	* Saltwell pump skid, includes water and air tanks,and flammable gas monitor. ** Sampling truck *** Pits on tank, but none open.
241-S-111	SST	2 [i3]	6,7,8 [d6]	15 [d6]	11, 13, 14 ++ [d1, d6]	NA	NA	5 [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	NA	NA	* SHMS, temperature probes, liquid level devices, etc. *** Pits on tank, but none open. ++ Hydrogen and organics watch list tank.
241-S-112	SST	2 [i3]	6++,7,8 [d1, d6]	15 [d6]	11, 13, 14 ++[d1, d6]	NA	NA	5 [wd]	6, 9, 10, 14 * [wd]	2,3 [wd]	NA	11 *** [wd]	NA	NA	* SHMS, temperature probes, liquid level devices, etc. *** Pits on tank, but none open. ++ Hydrogen watch list tank.
241-S-304	Catch tank	Unknown **	Unknown **	Unknown **	Unknown **	NA	NA	NA	NA	NA	NA	NA	NA	NA	** No data
216-S-25	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA [D8]
216-S-26	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA [D8]
244-S	DCRT catch station	1-6 [d6] Same as tank waste	6, 7, 8, [d6] Same as tank waste	15 [d6]	11, 13, 14 [d6]	NA	NA	3, 5 [d2, wd]	4, 6, 9 , 11 [wd]	2, 3, 4 [wd]	NA	11 * [wd]	NA	3, 6 [wd	* Catch station has pits that are covered

Table 3.1-5-S. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
240-S-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-S-151	Diversion box	1-6 Receives waste from different facilities going to SY Farm.	6, 7, 8, [d6] Same as tank waste	NA	11, 13, 14 [d6]	NA	NA	NA	4 [wd]	NA	NA	11 [wd]	NA	NA	NA
241-S-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
240-S-302	IMUST rad contamin ated	2 [d8]	NA	15 [d8]	13 [d8]	NA	NA	NA	NA	NA	NA	13 [d8]	NA	NA	NA
241-S-302A	IMUST rad contamin ated	2 [d8]	NA	15 [d8]	13 [d8]	NA	NA	NA	4 *	NA	NA	13 [d8]	NA	NA	* Leak detection-FIC gauge
241-S-302B	IMUST rad contamin ated	2 [d8]	6 [d8]	15 [d8]	13 [d8]	NA	NA	NA	NA	NA	NA	13 [d8]	NA	NA	NA
241-S-A	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14 [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-S-B	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14 [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-S-C	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14 [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-S-D	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14 [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
COB-1 through COB-18, COB 51-1, COB 52-1	Clean out boxes	2 * [i3]	6, 7, 8, [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste.
12 inch	Vertical storage units (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-S. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Satellite Accumulation Area	6 * [wd]	NA	NA	1, 2, 9, 13 * [wd]	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Mixed waste storage could have many different constituents.

[wd = Facility walkdown 4/22/96, L. Baricevic, J Doeler, S. Gwin, D. Mendoza
[d1] = WHC-EP-0182-93, Dec. 31, 1995
[d6] = OSD-T-151-00013, Rev. D-10
[d8] = Environmental Sites Database (WIDS)

Table 3.1-5-SX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. Mark any boxes which are not applicable NA. Provide references for each entry.***													***Notes***
SX FARM		NA	NA	NA	8, 14	NA	NA	NA	4, 5, 6, 18 [wd]	Na	Na	3, 7 * [wd]	5 ** [wd]	6 [wd]	*Crane and hoist ** SHMS gas bottles on tanks 101 through 106 and 109.
241-SX-101	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	5	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** emperature probes, liquid level devices, etc. *** Pits on tank but none open.
241-SX-102	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** temperature probes, liquid level devices, etc. *** Pits on tank but none open.
241-SX-103	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11,13 , 14 [d7] ****	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** Organic watch list tank.

Table 3.1-5-SX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. Mark any boxes which are not applicable NA. Provide references for each entry.***													***Notes***
241-SX-104	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank ** Temperature probes, liquid level devices, etc. *** Pits on tank but none open.
241-SX-105	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7] ****	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** Organic watch list tank.
241-SX-106	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. *** Pits on tank but none open.
241-SX-107	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank

Table 3.1-5-SX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. Mark any boxes which are not applicable NA. Provide references for each entry.***													***Notes***
241-SX-108	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank
241-SX-109	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	5 *[wd]	6, 10, 14 ** [wd]	2* [wd]	NA	11 *** [wd]	NA	NA	* SHMS, hydrogen watch list because tanks 1 through 6 vent through it. ** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank
241-SX-110	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank
241-SX-111	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank

Table 3.1-5-SX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. Mark any boxes which are not applicable NA. Provide references for each entry.***													***Notes***
241-SX-112	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank
241-SX-113	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open.
241-SX-114	SST	2 [i2] 5 **** [d1]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Pits on tank but none open. **** High heat tank
241-SX-115	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 *** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ***Ppits on tank but none open.
241SX-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-SX-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-SX-302	IMUST rad contaminated	1 - 6 [d12]	6, 7, 8 [d12]	NA	11, 13, 14 [d12]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Lateral Wells (4)	NA	NA	NA	NA	NA	NA	NA	4, 6, 8, 13, 14 [wd]	NA	NA	11 [wd]	NA	NA	NA

Table 3.1-5-SX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. Mark any boxes which are not applicable NA. Provide references for each entry.***													***Notes***
241-SX-A 241-SX-B	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14 [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-SX-271	Instrument building	NA	NA	NA	NA	NA	NA	NA	4, 8, 14 [wd]	NA	NA	NA	NA	6 [wd]	NA
241-SX-701	Compressor building	NA	NA	NA	NA	NA	NA	NA	4, 8, 14 [wd]	NA	NA	NA	NA	6 [wd]	Compressor building is out of service.
12 inch	Vertical storage units (21)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Used to store riser plugs and miscellaneous tools
24 inch	Vertical storage unit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Used to store riser plugs and miscellaneous tools

[wd] = Facility walkdown 4/22/96, L. Baricevic, J. Doeler, S. Gwin, D. Mendoza.
[i2] = Interview with Suzanne Lindberg 5/16/96
[d7] = OSD-T-151-00013, Rev. D-10
[d12] = WHC-SD-EN-ES-040, Rev. 0.
[i3] = Interview with Suzanne Lindberg 5/16/96

Table 3.1-5-SY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
SY FARM		NA	7 [wd]	NA	8 [wd]	NA	NA	2, 3, 5 * [wd]	1+, 4, 6, 10, 14 , 16, 19** [wd]	2, 4 [wd]	NA	NA	5, 6**** [wd]	6 ***	+ Electrical backup battery trailer, batteries are gel filled. Outside fence north side. * K1 , K1A, and K2 ventilation equipment. ** Stadium type lighting. *** Electrical wiring in farm. **** Gas bottles associeated with SHMS on tanks SY-101 and SY-103, and bottles with sampling buildings.
241-SY-101	DST	2 [i2]	6++ , 7, 8 [d1, d7, i5]	15 [d7]	11++, 13, 14 [d1, d7]	NA	NA	5*, *** [wd]	4, 6, 9, 10, 14 [wd]	2, 3 [wd]	NA	11 ** [wd]	12 **** [wd]	NA	* mixer motor ** pits on tank, but not open *** SHMS and miscellaneous sampling gas bottles **** Blowout riser with three blowout plates ~ 3' X 3' ++ Hydrogen watch list tank.

Table 3.1-5-SY. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure -Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-SY-102	DST	2 [i2]	6, 7, 8 [d7, i5]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 9, 10, 14 [wd]	NA	NA	11 ** [wd]	NA	NA	** Pits on tank, but not open
241-SY-103	DST	2 [i2]	6++, 7, 8 [d1, d7, i5]	15 [d7]	11 ++, 13, 14 [d1, d7]	NA	NA	5 ***, [wd]	4, 6, 9, 10, 14 [wd]	NA	NA	11 ** [wd]	NA	NA	** Pits on tank, but not open 216-T-32 *** SHMS ++ Hydrogen watch list tank.
241-SY-271-P1	Air compressor	NA	NA	NA	NA	NA	NA	1, 2, 3, 5 [wd]	4, 8, 10 [wd]	3, 4 [wd]	NA	NA	6 [wd]	NA	Air compressor
241-SY-1	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-2	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-3	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-4	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-5	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-6	Cleanout box	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 13 [i5]	NA	NA	11	NA	3, 6 [i5]	* Same waste as tank waste
241-SY-02-E	Feed pump pit	2 [i2]	6,7,8 [i5]	NA	11, 13, 14 [i5]	NA	NA	NA	4, 6, 14 [i5]	2, 3 [i5]	NA	11	NA	3 [i5]	* Same waste as tank waste
241-SY-A	Flush pit	NA	NA	NA	NA	NA	NA	NA	4, 6, 11, 14 [i5]	NA	NA	11	NA	3 [i5]	NA
241-SY-B	Flush pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA
241-SY-02E	Flush pit	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11	NA	NA	NA
241-SY-271	Instrument building	NA	NA	NA	8, [wd]	NA	NA	1, 2, 3, 5 [wd]	4, 10, 14 [wd]	3, 4 [wd]	NA	NA	6, [wd]	NA	Air compressor in instrument building

Table 3.1-5-SY. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure -Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-SY	Service pit	NA	NA	NA	NA	NA	NA	NA	4, 11, 14 [i5]	NA	NA	11	NA	3	NA
241-SY-A	Valve pit	2 [i2]	NA	NA	NA	NA	NA	NA	4, 13 [i5]	NA	NA	11	NA	NA	NA
241-SY-B	Valve pit	2 [i2]	NA	NA	NA	NA	NA	NA	4, 13 [i5]	NA	NA	11	NA	NA	NA

[wd] = Facility walkdown 4/24/96, W. Brown, S. Gwin, D. Mendoza, R. Tucker[i2]= Interview with Suzanne Lindberg
[i5] = Interview with Warren Brown, 5/9/96[d1]= WHC-EP-0182-93, Dec. 31, 1995
[d7] = OSD-T-151-00007 H-17

Table 3.1-5-T. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. .***													***Notes***
T FARM		NA	NA	NA	3* , 8 [wd]	NA	NA	NA	4, 5, 6, 9, 13, 14, 16 [wd]	NA	1**[wd]	2 *** [wd]	5 + [wd]	6 **** [wd]	* Gas powered generator parked on south side of farm. ** Portable lighting unit in farm and truck picking up saltwell lance. *** Stairs to change trailer. **** Electrical wiring in T-Farm. + Gas bottles associated with SHMS on tank T-110
241-T-101	SST	2 [i2]	6, 7, 8 [d7]	151 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Pits on tank, but none open.
241-T-102	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-103	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.

Table 3.1-5-T. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. .***													***Notes***
241-T-104	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	7 * [wd]	4, 6, 9, 10, 14 ** [wd]	NA	NA	11 **** [wd]	6 * [wd]	NA	* Saltwell pump skid, includes water and air tanks. ** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-105	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-106	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-107	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 ++ [d7]	NA	NA	7 * [wd]	4, 6, 9, 10, 14 ** [wd]	NA	NA	11 **** [wd]	6 * [wd]	NA	* Saltwell pump skid, includes water and air tanks. ** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Ferrocyanide watch list tank.
241-T-108	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.

Table 3.1-5-T. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. .***													***Notes***
241-T-109	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-110	SST	2 [i2]	6,++ 7, 8 [d7]	15 [d7]	11++ 13, 14 [d7]	NA	NA	5 * [wd]	4, 6, 14 ** [wd]	2 * [wd]	NA	11 **** [wd]	5 * [wd]	NA	* SHMS ** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Hydrogen watch list tank.
241-T-111	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13 ++ 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Organics watch list tank.
241-T-112	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-201	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-202	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.

Table 3.1-5-T. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure-Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. .***													***Notes***
241-T-203	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-204	SST	2 [i2]	6, 7, 8 [d7]	15 [d7]	11, 13, 14 [d7]	NA	NA	NA	4, 6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-T-701	Compressor building	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Air compressor out of service
216-T-1	Ditch	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-T-4-2	Ditch	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-T-7	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Potential for Cave-In [d12]
216-T-32	Crib	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Potential for Cave-In [d12]
241-T-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-T-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-T-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-T-252	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-T-301	IMUST rad contaminated	2 [d6]	6, 7, 8 [d6]	NA	11, 12, 13, 14 [d6]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-T. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below. .***													***Notes***
12 inch	Vertical storage units (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
T-Farm	Satellite Accumulation Area	6 * [wd]	NA	NA	1, 2, 9, 13 * [wd]	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Mixed waste storage could contain differen constituents.

[wd] = Facility walkdown 4/3/96, L. Boyd, S. Gwin, K. Hull, D. Mendoza, C. Saget
[d6] = WHC-EP-0861, Rev. 0
[d7] = OSD-T-151-00013, Rev. D-10
[d12] = Environmental Sites Database (WIDS)

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
TX FARM		NA	NA	NA	NA	NA	NA	NA	3, 4, 5, 6, 16, 18 [wd]	2 [wd]	1 * [wd]	2+ , 7 [wd]	5 ** [wd]	6++ [wd]	* Sampling truck in farm. A-Frame type hoist southwest corner of farm. A plastic wrapped pallet of herbicides ~25 bags found inside farm ** Gas bottles outside change trailer for PCM1B + Stairs on change trailer. ++ Wiring within farm.
241-TX-101	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TX-102	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-103	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-104	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-105	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13++, 14 [d1, d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. ++ Organic watch list tank.

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A-Corrosive	B-Explosive/ Pyrophoric	C-Nuclear Criticality	D-Flammable Materials	E-Thermal Radiation	F-Chem. Rxtns.	G-Friction	H-Electrical	I-Kinetic-Rotation	J-Kinetic-Linear	K-Mass, Gravity, Height	L-Pressure -Volume	M-Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TX-106	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, 17 *** [d6, wd]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. *** 2 wood covers or walkways, 4' X 20', purpose could not be identified
241-TX-107	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 *** [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-108	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 *** [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. *** Must have ammonia monitor or supplied air
241-TX-109	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 *** [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. *** Must have ammonia monitor or supplied air

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TX-110	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 *** [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. *** Must have ammonia monitor or supplied air
241-TX-111	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 *** [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. *** Must have ammonia monitor or supplied air
241-TX-112	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-113	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TX-114	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-115	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-116	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. **Ppits on tank, but none open.
241-TX-117	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13, 14 [d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open.
241-TX-118	SST	2 [i4]	6, 7, 8 [d6]	15 [d6]	11, 13 , 14 ++ [d1, d6]	NA	NA	NA	6, 14 * [wd]	NA	NA	11 ** [wd]	NA	NA	* Temperature probes, liquid level devices, etc. ** Pits on tank, but none open. ++ Ferrocyanide and organic watch list tank.
241-TX-302C	Catch tank	2 * [i4]	6, 7, 8 *	15 *	11, 13, 14 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Waste composition unknown
241-T-601	Compressor building	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
244-TX	DCRT catch station	2 [i4] Same as tank waste	6, 7, 8, Same as tank waste, 10 ***	15 [d6]	11, 13, 14 [d6]	NA	NA	3, 5 [wd, d3]	4, 6, 9, 11 [wd]	2, 3, 4, [wd]	NA	11 * [wd]	NA	3, 6	* Pits are covered. *** Pu from PFP.
241-TXR-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TXR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TXR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TX-152	Diversion box	2 [i4] Same as tank waste	6, 7, 8 Same as tank waste 10 ***	NA	11, 13, 14 [d6]	NA	NA	NA	4	NA	NA	11 [wd]	NA	NA	*** Pu from PFP
241-TX-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TX-154	Diversion box	2 [i4] Same as tank waste	6, 7, 8 Same as tank waste 10 ***	NA	11, 13, 14 [d6]	NA	NA	NA	4	NA	NA	11 [wd]	NA	NA	MA
241-TX-155	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
242-T-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-TX-302A	IMUST rad contaminated	Unknown	6 [d5] *	No data	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Waste composition unknown
241-TX-302B(R)	IMUST rad contaminated	Unknown	6 [d8]	NA [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
241-TX-302B	IMUST rad contaminated	Unknown	6 [d8]	15 [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.1-5-TX. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TX-302X	IMUST rad contaminated	Unknown	6 [d8]	15 [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
244-TXR-001	IMUST rad contaminated	Unknown	6 [d8]	NA [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
244-TXR-002	IMUST rad contaminated	Unknown	6 [d8]	NA [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
244-TXR-003	IMUST rad contaminated	Unknown	6 [d8]	NA [d8]	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
242-T-135	IMUST rad contaminated	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No data [d6]
242-TA-R1	IMUST rad contaminated	Unknown	6 [d5]	No data	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12 inch	Vertical storage units (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17 * [wd]	NA	NA	* 12" pipes used for riser plug storage, may have abandoned tools inside.
	Satellite Accumulation Area	6 * [wd]	NA	NA	1, 2, 9, 13, * [wd]	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Mixed waste storage, could have many different constituents.

[wd] = Facility walkdown 4/5/96, L. Boyd, S. Gwin, D. Mendoza, C. Saget, R. Tucker
[d3] = WHC-SD-WM-ISB-001, Vol. 2, Rev. 0
[d6] = OSD-T-151-00013, Rev. D-10
[d8] = WHC-SD-EN-ES-040, Rev. 0
[i4] = Interview with Suzanne Lindberg, 5/16/96

Table 3.1-5-TY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
TY FARM		NA	NA	NA	NA	NA	NA	NA	18 * (b)	NA	NA	NA	NA	NA	TY-Farm is clean closed and stabilized. *Pole mounted transformer (b)
241-TY-101	SST	2 (a)	6,7,8 (a)	15 (a)	14 + (d)	5* (a)	NA	NA	3**,4, 16, (b)	NA	NA	NA	NA	NA	*Tank waste + Ferrocyanide watch list tank.
241-TY-102	SST	2 (a)	6,7,8 (a)	15 (a)	NA (a)	5* (a)	NA	NA	3**,4, 16 ,(b)	NA	NA	NA	NA	NA	*Tank waste
241-TY-103	SST	2 (a)	6,7,8 (a)	15 (a)	14 + (d)	5* (a)	NA	NA	3**,4, 16, (b)	NA	NA	NA	NA	NA	*Tank waste + Ferrocyanide watch list tank.
241-TY-104	SST	2 (a)	6,7,8 (a)	15 (a)	13, 14 + (d)	5* (a)	NA	NA	3**,4, 16, (b)	NA	NA	NA	NA	NA	*Tank waste + Ferrocyanide and organic watch list tank.
241-TY-105	SST	2 (a)	6,7,8 (a)	15 (a)	NA (a)	5* (a)	NA	NA	3**,4, 16, (b)	NA	NA	NA	NA	NA	*Tank waste
241-TY-106	SST	2 (a)	6,7,8 (a)	15 (a)	NA (a)	5* (a)	NA	NA	3**,4, 16, (b)	NA	NA	NA	NA	NA	*Tank waste
241-TY-A	Valve box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Valve box located between TY-105/106.
241-TY-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
216-TY-201	IMUST rad contaminated	No data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No data

Table 3.1-5-TY. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure -Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-TY-302A	IMUST rad contaminated	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	TY farm IMUSTS stabilized, no pumpable liquids, verification via CCTV (c)
241-TY-302B	IMUST rad contaminated	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	TY farm IMUSTS stabilized, no pumpable liquids, verification via CCTV (c)

(a) = OSD-T-151-00013 Rev D-10
(b) = Walkdown, 4/3/96, L. Boyd, P.K. Brockman, S. Gwin, K. Hull, D. Mendoza, C. Saget
(c) = Interview with Kevin Hull
(d) = WHC-EP-0182-93, Dec. 31, 1995

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
U FARM		NA	7* [wd]	NA	8, 14 * [wd]	NA	NA	NA	3, 4, 5, 6, 7, 8, 16, 18 [wd]	NA	1 , 5 ** [wd]	2, 3, 5 [wd] ***	5 **** [wd]	6+ [wd]	* Large liquid nitrogen and 2 propane tanks outside fence on south side. ** sampling truck and crane. *** Change trailer **** SHMS, gas bottles on tanks 103, 105, 107, 108, 109. + Wiring in farm
241-U-101	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Ppits on tank, but none open.
241-U-102	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. *** Sampling truck **** Pits on tank, but none open.
241-U-103	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14, ***** [d1, d6]	NA	NA	5 * [wd]	4, 6, 10, 14 ** [wd]	2* [wd]	NA	11 **** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. ****Ppits on tank, but none open. ***** Must have ammonia monitor or supplied air. ++ Organic watch list tank.
241-U-104	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Pits on tank, but none open.

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrica l	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes --->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-U-105	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14, ***** [d1, d6]	NA	NA	5 * [wd]	4, 6, 10, 14 ** [wd]	2 *[wd]	NA	11 **** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. ****Pits on tank, but none open. ***** Must have ammonia monitor or supplied air. ++ Organic watch list tank.
241-U-106	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14,***** [d1, d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Ppits on tank, but none open. ***** Must have ammonia monitor or supplied air, also has HCN monitoring area. ++ Organic watch list tank.
241-U-107	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14 [d1, d6]	NA	NA	5 * [wd]	4, 6, 10, 14 ** [wd]	2 * [wd]	NA	11 **** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. ****Pits on tank, but nonepen. ++ Organic watch list tank.
241-U-108	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	5 * [wd]	4, 6, 10, 14 ** [wd]	2 * [wd]	NA	11 **** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. ****Pits on tank, but none open.

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-U-109	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	5 * [wd]	4, 6, 10, 14 ** [wd]	2 * [wd]	NA	11 **** [wd]	NA	NA	* SHMS, hydrogen watch list tank. ** Temperature probes, liquid level devices, etc. ****Ppits on tank, but none open.
241-U-110	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, ***** [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ***** Must have ammonia monitor or supplied air.
241-U-111	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14 ***** [d1, d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Ppits on tank, but none open. ***** Must have ammonia monitor or supplied air. ++ Organic watch list tank.
241-U-112	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd] 17 ++ [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Tank is roped off and has signs indicating "UNSTABLE GROUND"
241-U-201	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. ****Pits on tank, but none open.

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
241-U-202	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13, 14, [d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open.
241-U-203	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14 [d1, d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Organic watch list tank
241-U-204	SST	2 [i5]	6, 7, 8 [d6]	15 [d6]	11, 13++ 14 [d1, d6]	NA	NA	NA	6, 14 ** [wd]	NA	NA	11 **** [wd]	NA	NA	** Temperature probes, liquid level devices, etc. **** Pits on tank, but none open. ++ Organic watch list tank.
241-U-301B	Catch tank	2 [i5]	6,7, 8 *	15 *	11, 13, 14	NA	NA	NA	4, 14 [wd]	NA	NA	NA	NA	NA	* Waste composition unknown ENRAF liquid level device
241-UX-302A	Catch Tank	2 [i5]	6,7, 8 *	15 *	11, 13, 14	NA	NA	NA	4, 14 [wd]	NA	NA	NA	NA	NA	* Waste composition unknown ENRAF liquid level device
241-U-701	Compressor building	NA	NA	NA	4, 10 [wd]	NA	NA	1, 2, 3, 5, [wd]	4, 8, 10 [wd]	2 [wd]	6 [wd]	NA	6 [wd]	NA	Air compressor
216-U-12	Crib	2 [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]
216-U-17	Crib	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]
244-U	DCRT catch station	NA	NA	NA	NA	NA	NA	3, 5 [wd]	4, 6, 9, 11, 14, [wd]	2, 3., 4 [wd]	NA	11 [wd]**	NA	3, 6 [wd]	* 244-U has not received any waste . ** Pits are covered

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
216-U-14	Ditch	1 [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]	NA [d12]
241-U-151	Diversion box	2 [i5]	6,7,8 Same as tank waste	NA	11, 13, 14, [d6]	NA	NA	NA	4	NA	NA	11[wd]	NA	NA	NA
241-U-152	Diversion box	2 [i5]	6,7,8 Same as tank waste	NA	11, 13, 14, [d6]	NA	NA	NA	4	NA	NA	11 [wd]	NA	NA	NA
241-UX-154	Diversion box	2 [i5]	6,7,8 Same as tank waste	NA	11, 13, 14, [d6]	NA	NA	NA	4	NA	NA	11 [wd]	NA	NA	NA
241-U-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-U-252	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-UR-151	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-UR-152	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-UR-153	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-UR-154	Diversion box	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Weather covered
241-U-A	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14, [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-U-B	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14, [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-U-C	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14, [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA
241-U-D	Valve pit	Unknown	Unknown	NA	Unknown	NA	NA	NA	4, 14, [wd]	NA	NA	11 [wd]	NA	6 [wd]	NA

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophoric	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
COB U-25	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-26	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-27	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-28	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-29	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-30	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-31	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-32	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-33	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
COB U-34	Clean out box	2 * [i5]	6,7,8 [d6]	NA	11, 13, 14 * [d1]	NA	NA	NA	4, 6, 13 [wd]	NA	NA	11 [wd]	NA	3, 6 [wd]	* Same waste as tank waste
241-U-271	Instrument Building	NA	NA	NA	NA	NA	NA	NA	4, 5, 8, 11, 13 [wd]	NA	NA	NA	NA	6 [wd]	NA
	Change Trailer	NA	NA	NA	NA	NA	NA	NA	4, 11, 14 [wd]	NA	NA	2 [wd]	NA	6 [wd]	NA
12 inch	Vertical storage units (6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	* 12 " pipes used for riser plug sorage, may have abandoned tools inside.

Table 3.1-5-U. TWRS Facility Hazard Identification.

Facility	Type	A- Corrosive	B- Explosive/ Pyrophonic	C- Nuclear Criticality	D- Flammable Materials	E- Thermal Radiation	F- Chem. Rxtns.	G- Friction	H- Electrical	I- Kinetic- Rotation	J- Kinetic- Linear	K- Mass, Gravity, Height	L- Pressure- Volume	M- Thermal (except radiant)	Comments
Legend Boxes -->		***Select applicable hazards from attached table and place corresponding hazard numbers in the boxes below.***													***Notes***
	Satellite Accumulation Area	6 * [wd]	NA	NA	1, 2, 9, 13 * [wd]	NA	NA	NA	NA	NA	NA	NA	NA	NA	* Mixed waste storage, could have many different constituents.

[wd] = Facility walkdown 4/11/96, T. Bowman, L. Boyd, S. Gwin, K. Hull, D. Mendoza
[d6] = OSD-T-151-00013, Rev. D-10
[d12] = Environmental Sites Database (WIDS)
[i5] = Interview with Suzanne Lindberg, 5/16/96

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Tables 3.2-1
and 3.2-2

Table 3.2-1. Hazard Analysis Cause Groups and Associated Occurrences

CAUSE GROUPS/RELATED OCCURRENCES	
ITEM	NUMBER OF OCCURRENCES
CRITICALITY	4 occurrences
FIRE/EXPLOSION	14 occurrences
TANK DOME COLLAPSE	8 occurrences
RELEASE	156 occurrences
HUMAN ERROR RELEASE	59 occurrences
NON-RELEASES / OCCUPATIONAL	0 occurrences

Table 3.2-2. Occurrences Not Included in the Hazard Analysis.

ITEM	OCCURRENCE	NUMBER OF OCCURRENCES	COMMENTS
1	Occupational injury (or potential)	20	Occupational. Not an official part of the study, these events were included when discovered.
2	Ventilation heater failure	2	Ventilation heater failure. This event does not cause a release of radioactive or toxic material.
3	Rotten timbers-crib subsidence	1	Rotten timbers, crib subsidence. Potential contamination spread. However, this event did not cause a release of radioactive or toxic material.
4	No protective equipment	7	No protective equipment. Included as failure to follow administrative controls in the control section of the study. This event does not cause a release of radioactive or toxic material.
5	Tank exceeds level limit	27	Tank exceeds level limit. No release from this event.
6	Waste tank level decrease	121	Waste tank level decrease. No release from these events.
7	Waste tank level increase	93	Waste tank level increase. This event does not cause a release of radioactive or toxic material.
8	Tank temperature increase	3	Tank temperature increase. This event does not cause a release of radioactive or toxic material.
9	Sampling/ surveillance failure	10	Sampling/surveillance failure. Included as the failure to follow administrative controls, in the control section of the study.
10	Instrument failure-due to auguring	1	Instrument failure-due to auguring. If this event resulted in a release, it would be included as an intrusive activity.
11	Increased radiation readings	52	Increased radiation readings. Generally, these events were a result of the migration of soil contamination in laterals or dry wells associated with waste tanks.
12	Radioactive/ toxic liquid spill	11	Radioactive/toxic spill. These events are included in the study as leaks and/or contamination spread.
13	Radiation alarm due to welding	1	Radiation alarm due to welding. This event does not cause a release, an alarm was triggered.
14	Waste tank sampler, break, rupture	2	Waste tank sampler break, rupture. Breaking a sampler does not cause a release. It is an operational problem.
15	High dP across filters	3	High dP across filters. High dP does not cause a release, filter plugging can be a precursor to filter rupture.
16	Vehicle collision in tank farm, nothing broken	3	Vehicle collision in farm, nothing broken. These events did not cause a rupture, or release.
17	Process condensate pH too low	1	Process condensate pH too low. This event entails clean water, it does not cause a release.

Table 3.2-2. Occurrences Not Included in the Hazard Analysis.

ITEM	OCCURRENCE	NUMBER OF OCCURRENCES	COMMENTS
18	High radiation in excavation	4	High radiation in excavation. These events included personnel exposure because they were in an excavation in the tank farms. They were an occupational problem, they did not involve a release.
19	Transfer line plug	4	Transfer line plug. These events did not cause a release.
20	Steam used instead of air	1	Steam used instead of air. This event caused no release, it was an operational problem.
21	Indicator failure	21	Indicator failure. These events are covered in the study concerning engineered controls.
22	Pump run w/o cooling water, too acidic	2	Pump run without cooling water. This event caused no release.
23	Re-used o.o.s. waste tank	1	Re-use of out-of-service waste tank. This event is a violation of administrative controls, it did not cause a release.
24	Intentional violation of admin. controls	8	Intentional violations of administrative controls. Included in the administrative control section of the study.
25	Water spill	11	Water spill. These events involved clean water, no release.
26	Encasement contamination	2	Encasement contamination. This event involved a leak into a pipe encasement, which prevented a spill.
27	Instrument air off, inaccurate instr. readings	2	Instrument air off: inaccurate instrument readings. This event is included in the failure to follow administrative controls. This event does not cause a release, it is an operational problem.
28	Tank level below minimum limit	3	Tank level below minimum limit. This is an operational problem, a violation of administrative controls. No release.
29	Rad. activity on filters	3	Radiation activity on filters. This event does not cause a release. The filters did their job, buildup on the filters is an operational problem.
30	Personnel contamination or over-exposure	16	Personnel contamination or over exposure. The study scope did not include these events, they were noted when discovered in the analysis. Does not include a release.
31	Undetected basin filling	1	Undetected basin filling. This was an operational problem in that the process was not detected, and it caused a large volume of slightly contaminated water to have to be added to the waste tank inventory. No release.
32	Rad. discharge to crib exceeded limits	3	Radiation discharge to crib exceeded limits. This event is a violation of administrative controls, but does not result in a release.
33	Waste stuck in caisson	1	Waste stuck in caisson. This event is an operational problem, but does not result in a release.

Table 3.2-2. Occurrences Not Included in the Hazard Analysis.

ITEM	OCCURRENCE	NUMBER OF OCCURRENCES	COMMENTS
34	Burial box failure	1	Burial box failure. This event is a potential for a spread of contamination, but did not result in a release.
35	Loss of emergency power	3	Loss of emergency power. These events did not result in a release, they are an operational, administrative, problems.
36	Pond rad. exceeded limits	1	Pond radiation exceeded limits. This event is a violation of administrative controls, but does not result in a release.
37	Violation of admin. controls	70	Violation of administrative controls. These are operational problems, and included in the controls section of the study, but these violations did not result in a release.
38	Error in computer for safety calculations	2	Error in computer for safety calculations. Errors in computer codes do not cause a release. These codes are to help understand the behaviors of emissions.
39	Loss of electric power	12	Loss of electric power. This event was covered in the What If Analysis, and was found to not be a significant contributor to a release.
40	Activation of fire system	1	Activation of fire system. This is an operational problem, does not cause a release.
41	Loss of accountability of rad. sources	1	Loss of accountability of radiation sources. This is a failure to maintain administrative controls, but does not cause a release.
42	Ferrocyanide USQ	1	Ferrocyanide USQ. This event does not cause a release, it is an administrative process.
43	Unknown cable attached to riser	1	Unknown cable attached to riser. This event was not looked at specifically, it did not cause a release or spread of contamination.
44	Missed milestone	5	Missed milestones. These events are administrative milestones, no release mechanism is involved.
45	Tank contents, extremely low pH	3	Tank contents, extremely low pH. The tanks involved in these events are small, not the large waste tanks. The potential for causing a release due to pH is small. These events did not cause a release.
46	Criticality USQ-SSTs	1	Criticality USQ.
47	Bomb threat	1	Bomb threat. This is an administrative and operational problem. No release is involved.
48	Organic layer, C-103 USQ	1	Organic layer, C-103 USQ. There is no release involved with this event.
49	Pressurized air lance package	1	Pressurized air lance package. The results of this event were considered as a contamination spread or spray leak.
50	Stack monitor failure	2	Stack monitor failure. This event does not cause a release, it results in a failure to follow administrative controls if not repaired.
51	Waste packaging violations	2	Waste packaging violations. These violations did not cause a release, they are a violation of administrative controls which were included in the control section of the study.

Table 3.2-2. Occurrences Not Included in the Hazard Analysis.

ITEM	OCCURRENCE	NUMBER OF OCCURRENCES	COMMENTS
52	Flammable gas USQ	1	Flammable gas USQ.
53	Improper chemical adjustment	1	Improper chemical adjustment. This event is included in the administrative controls section of the study, the solution did not cause a release.
54	Diesel generator failure	1	Diesel generator failure. this event was considered in the What If Analysis, it is not a significant contributor to a release.
55	Tank pressurized	21	Tank pressurized. Waste tank pressurization was considered in the Hazard Analysis. It is not a significant problem unless accompanying a filter breach.
56	Oil line ruptured, smoked	1	Oil line ruptured, smoked. This event is a potential for fire in a contaminated location.
57	Air compressor failure	6	Air compressor failure. This event was considered in the What If Analysis and is not a significant contributor to a release.
58	Inadvertent flow to crib	1	Inadvertent flow to crib. This event involved steam condensate flow to a crib. It is not a release, like a raw water spill, but a failure to follow administrative controls.
59	Human error tripped alarms	3	Human error tripped alarm. These events did not involve a release, but were operational problems.
60	Removal of thermocouple tree, bent and broken	1	Removal of thermocouple tree, bent and broken. This was an operational problem, not a release.
61	Riser not symmetrical	1	Riser not symmetrical. This was an operational problem, not a release.
62	Raw water usage unexplained	2	Raw water usage unexplained. These events did not result in a release, but were a control problem.
63	Sludge cooler high vacuum	1	Sludge cooler high vacuum. This was an operational problem, not a potential release.
64	Pipe discovered w/in buffer zone of tank farm	1	Pipe found within tank farm buffer zone. No release, problem with controlled drawings.
65	Core sample USQ	1	Core sample USQ. Core sample containing reactive components, inadvertent addition of aggravating material.
66	Carbon monoxide trip due to operating truck	1	Carbon monoxide trip due to operating truck. This event was an operational problem, not a release.
67	Steam trap failure	1	Steam trap failure. This event creates an industrial hazard due to leak temperature, but it does not result in a release.
68	MUST tanks-unknown status	1	MUST tanks-unknown status. MUST tanks were included in the study.

Table 3.2-2. Occurrences Not Included in the Hazard Analysis.

ITEM	OCCURRENCE	NUMBER OF OCCURRENCES	COMMENTS
69	Rotary Mode Core Sampler operated out-of-specs	5	Rotary Mode Core Sampler operating out-of-specifications. These are administrative control problems, they do not result in a release.
70	Wrong length auger rod	1	Wrong length auger rod. Operational problem, this event did not cause a release.
71	RMCS over energized	1	Rotary Mode Core Sampler over-energized. Operational and industrial safety problem, no release.
72	Discovery of drug paraphernalia	1	Discovery of drug paraphernalia. This event indicates a personnel problem, does not result in a release.
73	Soil contamination far deeper than expected	1	Soil contamination deeper than expected. This event was considered as the spread of contamination, section 8.5.

Table 3.3-1

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Nuclear Criticality								
A-1-a	I-PFP-1-AGT-A	Fission product gasses and aerosols from receiver tank.	Release of fission product gasses and aerosols from receiver tank due to: Potential for solids to collect in D-5 If mixed later, potential for composition of next batch to exceed Criticality Prevention Specifications (CPS). Potential "Criticality issue".	Human Error or Agitator fails results in criticality	F3	S2	A05	01
ANALYZED ACCIDENT: In-Tank Fuel Fire/Deflagration								
A-1-a	EE-05-a	Contents of SST tank, fires and possible explosions	Release of radioactive or hazardous materials from SST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	S3	B25	02A
A-1-a	EE-05-b	Contents of DST tank, fires and possible explosions	Release of radioactive or hazardous materials from DST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	S3	B25	02B
ANALYZED ACCIDENT: Mixing of Incompatible Material - Tank Pressurization								
B-1-a	I-222S-1-RXN-A	Aerosols and/or toxic vapors from receiver tank	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Transfer of incompatible waste	F3	S2	D01	03
ANALYZED ACCIDENT: Flammable Gas Deflagrations - DST								
A-1-a	ITK-10-b	DST tank inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Spark from equipment or tools	F3	S3	B04	04
ANALYZED ACCIDENT: Flammable Gas Deflagrations - SST								
A-1-a	XS-01-FLOW03	SST and DCRT tank contents	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse and DCRT pressurization caused by flammable gas explosion/fire propagating from DCRT to single shell tank	Pipeline connecting single shell tank and DCRT fills with flammable gas; loss of ventilation flow in DCRT so that a flammable gas atmosphere is ignited by the ventilation outlet heater	F2	S3	B07	05
ANALYZED ACCIDENT: HEPA Filter Failure - Exposure to High Temperature or Pressure								

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	106C-10J	Tank atmosphere and surface contamination on HEPA filters	Release of radioactive and/or hazardous material from C-106 tank due to tank structural damage, HEPA damage caused by high temperature	Fire in or around ventilation system	F2	S2	B09	06
ANALYZED ACCIDENT: Fire in Contaminated Area								
A-1-a	CRN-05	Pits and risers inventory	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Human error in positioning crane load	F3	S2	B26	07
ANALYZED ACCIDENT: Waste Transport Vehicle Accident								
A-1-a	VEH-03	Sample transport cask	Release of radioactive or toxic material from cask due to damage to transport casks during a high wind/tornado	High wind/tornado	F2	S2	D20	08
ANALYZED ACCIDENT: Organic Solvent Fire/Organic Salt-Nitrate Reaction								
A-1-a	I-222S-1-CMP-E	Aerosols from receiver tank or 244-S	Release of radioactive aerosols to the atmosphere from 244-S or receiver tank due to over pressurization of tank caused by organic fire.	Human Error - Upset of 222-S Lab operations	F3	S3	B01	09
ANALYZED ACCIDENT: Natural Phenomena - High Wind								
A-1-a	CRN-13-a	Tank Inventory	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	High wind	F3	S3	D20	10
ANALYZED ACCIDENT: Natural Phenomena - Lightning								
A-1-a	NP-03	Head space inventories and combustion products from tank fire	Radioactive and hazardous material releases from tanks due to fire in tanks	Lightning strikes riser in tank farm	F2	S2	B21	11
ANALYZED ACCIDENT: Tank Failure Due to Excessive Loads								

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	CRN-03	Tank inventory	Release of radioactive and/or toxic materials from tank due to dome collapse	Human error results in excessive weight on dome	F3	S3	C10	12A
B-1-a	CRN-04	Tank inventory.	Release of radioactive and/or toxic materials from tank due to dome collapse	Crane or rigging failures drop load resulting in large impact to dome	F3	S3	C10	12B
B-1-a	CRN-11	Tank inventory	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Human error: improper load assembly, rigging, crane overloaded	F3	S3	C10	12C
ANALYZED ACCIDENT: Tank Failures Due to Vacuum or Degradation								
B-1-a	114SX-06.a.3	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols from Tank SX-114 waste to the atmosphere due to dome collapse as a result of loss of strength due to aging	Long term aging%%Resulting in tank degradation	F1	S3	C12	13
ANALYZED ACCIDENT: Natural Phenomena - Seismic								
B-1-a	NP-07	Multiple tanks and ventilation systems inventories, 204-AR tanker spill	Radioactive and hazardous material releases from tanks and ventilation systems due to seismic event	Earthquake collapses domes	F1	S3	D18	14
ANALYZED ACCIDENT: Spray Leak in Structure or from Overground Waste Transfer Lines								
B-1-a	XS-06-FLOW02	DCRT waste being transferred to 102-SY	Release of liquid radioactive waste from DCRT transfer piping to 102-SY due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	F2	S3	D12	15
ANALYZED ACCIDENT: Spray Leak from Underground Waste Transfer Lines								
B-1-a	EE-16	Material leaked from transfer line	Release of radioactive and hazardous material from transfer line spray leak due to excavation error	Excavation into waste transfer line during a transfer	F3	S3	D22	16
ANALYZED ACCIDENT: Caustic Spray Leak								

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	107AN-02-PRES	Contents of caustic truck	Release of caustic aerosol from caustic truck transfer piping due to spray leak	Piping/hose leak initiated by various causes	F3	S2	D12	17
ANALYZED ACCIDENT: Tank Bump								
B-1-a	102AW-02-TEMP02	DST tank vapors/aerosols	Release of radioactive aerosols from tank 102-AW due to tank bump	High heat waste combined with loss of ventilation contributes to tank bump	F2	S2	D01	18A
ANALYZED ACCIDENT: Unfiltered Release								
B-1-a	114SX-04.c.2.a	Radioactive aerosols contained in the tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter seal failure	HEPA filter seal failure	F3	S2	D07	18B
ANALYZED ACCIDENT: Subsurface Leak Resulting in Pool								
B-3-b	XS-07-FLOW02	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Corrosion of inner and outer pipe	F3	S2	D16	21A
B-3-b	XS-07-FLOW06	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste to soil from transfer pipe out of 244-TX-DCRT due to leak in primary pipe and encasement	Water hammer causes failure of primary pipe and encasement	F3	S2	D17	21B
ANALYZED ACCIDENT: Evaporator Dump								
C-1-a	102AW-02-PRES%102AW-02-TEMP	DCRT tank vapor/aerosols	Release of radioactive aerosols from 102-AW due to pressurization	Evaporator dump when intrusive activity is occurring which causes pressurization	F3	S2	D01	22
ANALYZED ACCIDENT: Mixing of Incompatible Material - Toxic Vapor Generation								

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-1-a	XS-26-PRES%XS-26-TEMP	DST vapor/aerosols	Release of toxic vapors from 102-SY due to chemical reaction	Mistransfer of incompatible waste causes chemical reaction	F3	S2	E06	23
ANALYZED ACCIDENT: Leak from Rail Car/Tank Trailer								
B-2-b	204AR-01H	20,000 gallons of liquid radioactive waste from the rail car	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to spilling rail car contents	Rail car rupture due to collision with other or a derailment	F2	S2	D25	25
ANALYZED ACCIDENT: Surface Leak Resulting in Pool								
C-2-b	W058-PRES01	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	F3	S2	D17	26
ANALYZED ACCIDENT: Unplanned Excavation/Drilling in Pond/Crib/Ditch								
C-2-c	CDP-10	Portion of radioactive material present in crib, ditch, or pond	Release of radioactive contamination to soil surface from excavation or drilling in cribs, ditches, or ponds that disturbs radioactive material	Excavation or drilling	F3	S2	D22	28
ANALYZED ACCIDENT: Subsurface Leak Remaining Subsurface								
B-3-b	102S-01.b3	Radioactive/hazardous material contained in pumpable liquids from S-102.	Radioactive liquid released to the soil subsurface from leaks in transfer Lines SL-140, SN-242. (Plume)	Line leak during saltwell pumping (corrosion)	F3	S2	D12	29
ANALYZED ACCIDENT: Sodium Fire								
A-1-a	2727W-06	Building inventory	Release of hazardous materials from 2727W due to sodium-water reactions	High wind or tornado destroys building with rain/snow	F2	S2	D20	30
ANALYZED ACCIDENT: Above Ground Structure Failure								

Table 3.3-1. Analyzed Accidents.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	ITK-FR-08	DST & SST tank liquid held in flex receiver	Release of radioactive aerosols/vapors from flex receiver due to structural failure	High winds tear flex receiver bag	F3	S2	D20	31
ANALYZED ACCIDENT: Steam Intrusion from Interfacing Systems								
B-1-a	I-242A-6-CMP-A	Aerosols and particulates entrained in steam from feed tank TK-AW-102.	Release (steam) of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Human error - Steam block valve inadvertently left opened.	F3	S3	E01	32

Table 3.3-2

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Nuclear Criticality								
A-1-a	I-PFP-1-AGT-A	Fission product gasses and aerosols from receiver tank.	Release of fission product gasses and aerosols from receiver tank due to: Potential for solids to collect in D-5 if mixed later, potential for composition of next batch to exceed Criticality Prevention Specifications (CPS). Potential "Criticality Issue".	Human Error or Agitator fails results in criticality	F3	S2	A05	01
HAZARDOUS CONDITIONS								
A-1-a	I-PFP-1-CMP-B	Fission product gasses and aerosols from receiver tank.	Release of fission product gasses and aerosols from receiver tank due to: Potential for localized concentration of fissile materials in receiver tank from failure to add ferric nitrates. Potential "Criticality Issue".	Failure to add ferric nitrates, results in criticality	F3	S2	A01	01X
A-1-a	I-PFP-1-CMP-D	Fission product gasses and aerosols from receiver tank.	Release of fission product gasses and aerosols from receiver tank due to excess fissile material in waste. Potential to exceed criticality prevention specification requirements for shipment. Potential "Criticality Issue".	Excess fissile content added to waste results in criticality	F3	S2	A01	01X
B-1-a	I-PUREX-3-CMP-E	Fission product gasses and aerosols from receiver tank.	Release of fission product gasses and aerosols from receiver tank due to criticality caused by exceeding Criticality Prevention Specifications for shipment from PUREX.	Transfer of L cell sump water to tank F-18 and eventually to the tank farm.	F3	S2	A01	01X
A-1-a	XS-03-LEVE02 XS-21-LEVE (244-S DCRT)	DCRT tank contents	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Evaporation of DCRT contents with increased solids settling on DCRT bottom creates critical mass	F3	S2	A02	01X
A-1-a	XS-03-TEMP02 XS-21-TEMP (244-S-DCRT)	DCRT tank contents	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of material into tank that violates criticality specification	F3	S2	A01	01X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	XS-06-FLOW01	DCRT tank contents	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of inadequately recirculated waste from tank due to failure to appropriately balance flow between recirculation and transfer line causing buildup of solids creating critical mass	F3	S2	A06	01X
A-1-a	102AW-08-COMP02	DST tank contents	Release of fission product gases and aerosols from 102-AW due to criticality	Misrouting of waste creates critical mass	F1	S2	A06	01X
A-1-a	102AW-08-COMP02A	DST tank contents	Release of fission product gases and aerosols from 102-AW due to criticality	Human error - addition of excess fissile material to TK-102AW creates critical mass	F1	S2	A01	01X
A-1-a	102AW-08-COMP03	DST tank contents	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (horizontally) creates critical mass	F1	S2	A02	01X
A-1-a	102AW-08-COMP04	DST tank contents	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (vertically) due to addition of "rich" layer --K basin sludge creates critical mass	F1	S2	A02	01X
A-1-a	102S-04.e4	Tank Waste/Vapor Space	Release of radioactive gases and aerosols from tank S-102 vapor space to atmosphere due to criticality	Criticality (misrouting)	F1	S2	A06	01X
A-1-a	106C-01N	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to high temperature in tank	Criticality in waste tank	F1	S2	A05	01X
A-1-a	114SX-05.c.2c	Radioactive aerosols created by criticality event	Radioactive gases and aerosols as well as direct radiation released from Tank SX-114 due to criticality	Criticality (difficult to achieve concentration needed and difficult to obtain configuration required)	F1	S2	A05	01X
A-1-a	244AR-03.a.09	Fission product gasses generated by the criticality	Release of radioactive aerosols created by criticality to the cell atmosphere	Criticality in waste	F1	S2	A05	01X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	ITK-06	Radio nuclides from criticality plus tank wastes	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to criticality	Intrusive activity causes critical mass	F1	S2	A04	01X
A-1-a	ITK-06-I	Material inside MISF	Release of radioactive and/or hazardous material from point of in-facility access due to criticality within the in-facility waste during intrusive activity (non-fire, non-explosion)	Criticality from intrusive activity	F1	S2	A04	01X
A-1-a	XS-13-PRES04	Catch tank contents	Release of fission product gases and aerosols from catch tank 241-U-301B due to criticality	Transfer of excess fissile material to catch tank creates critical mass	F1	S2	A01	01X
A-1-a	XS-20-FLOW05	Catch/DCRT tank contents	Release of fission product gases and aerosols from 244-S DCRT (not designated solids receiver) due to criticality	Transfer of waste from 244-TX DCRT due to improper valve lineup creates critical mass	F1	S2	A06	01X
A-1-a	XS-26-PRES XS-26-TEMP 102-AW-TEMP (FOR TK-102-AW)	DST tank contents	Release of fission product gases and aerosols from 102-SY due to criticality	Transfer of critical mass of fissile material and achievement of critical geometry	F1	S2	A01	01X
A-1-a	102AW-08-COMP05	DST tank contents	Release of fission product gases and aerosols from 102-AW due to criticality	Over concentration of waste creates critical mass	F0	S2	A03	01X
ANALYZED ACCIDENT: In-Tank Fuel Fire/Deflagration								
A-1-a	EE-05-a	Contents of SST tank, fires and possible explosions	Release of radioactive or hazardous materials from SST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	S3	B25	02A

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	EE-05-b	Contents of DST tank, fires and possible explosions	Release of radioactive or hazardous materials from DST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	S3	B25	02B
HAZARDOUS CONDITIONS								
A-1-a	102S-03.b4	Tank Contents	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank causing dome collapse	Vehicle drives into open riser puncturing gas tank + Ignition + flammable organic vapors in tank	F3	S3	B25	02X
A-1-a	102AW-03-TEMP01	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by an explosion/fire in the annulus	Fire/ Explosion of flammable liquid spilled into annulus via a riser	F2	S3	B09	02X
A-1-a	102AW-09-COMP02	DST tank contents	Release of radioactive waste aerosols from 102-AW tank due to fire in fuel spilled in waste tank causing dome collapse	Spill of fuel from external source plus fuel reaching flash point or being aerosolized plus ignition source	F2	S3	B09	02X
A-1-a	EE-04-a	SST tank contents	Release of radioactive and hazardous materials from SST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	F2	S3	B25	02X
A-1-a	EE-04-b	DST tank contents	Release of radioactive and hazardous materials from DST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	F2	S3	B25	02X
A-1-a	VEH-07-I	Material in MISF	Release of radioactive or toxic material from MISF due to riser being sheared off and possibly vehicle gas tank ruptured and fire	Vehicle moving near facility risers	F3	S2	B25	02X
A-1-a	102AW-03-TEMP02	DST tank contents	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus damaging primary tank	Flammable concentration of gases in annulus vapor space due to spill of fuel into annulus and spark source	F2	S2	B09	02X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	102S-03.b3	Tank Contents	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank due to ignition of fuel from ruptured gas tank.	Vehicle drives into open riser puncturing gas tank + Ignition	F2	S2	B25	02X
ANALYZED ACCIDENT: Mixing of Incompatible Material - Tank Pressurization								
B-1-a	I-222S-1-RXN-A	Aerosols and/or toxic vapors from receiver tank	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Transfer of incompatible waste	F3	S2	D01	03
HAZARDOUS CONDITIONS								
C-1-a	107AN-02-FLOW01	Contents of DST	Release of radioactive aerosols from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	F3	S2	E01	03X
C-1-a	107AN-02-FLOW02	Contents of DST	Release of toxic vapors from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	F3	S2	E01	03X
B-1-a	I-BPLANT-2-FLW-D	Receiver tank waste	Release of aerosols and/or toxic vapors from receiver tank due to transfer of incompatible waste from B Plant.	Human Error -Communication error between B Plant and TWRS causes transfer of incompatible waste.	F3	S2	E01	03X
C-1-a	XS-13-PRES01	Liquid radioactive waste contents of catch tank	Release of radioactive aerosols from 241-U-301B catch tank due to chemical reaction	Draining of incompatible chemicals to catch tank	F3	S2	D01	03X
C-1-a	XS-20-FLOW01	DCRT tank vapor/aerosols	Release of radioactive aerosols from 244-TX DCRT due to chemical reaction	Transfer of incompatible waste to 244-TX DCRT due to improper valve lineup	F3	S2	E06	03X
C-1-a	XS-26-PRES01	DST tank vapor/aerosols	Release of radioactive aerosols from 102-SY tank due to chemical reaction	Mis-transfer of incompatible waste causes chemical reaction	F3	S2	E06	03X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-1-a	102AW-02-TEMP 102AW-08-TEMP	DST tank vapor/aerosols	Release of radioactive aerosols from TK-102-AW due to positive pressure	Chemical reaction heating up and-or agitating tank causes positive pressure in tank	F2	S2	E15	03X
B-1-a	102AW-02-TEMP01	DST tank vapor/aerosols	Release of radioactive aerosols from 102-AW tank due to boiling waste	High heat waste causing boiling	F2	S2	D01	03X
B-1-a	106C-01G	Tank atmosphere	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction causing local discharge of contamination through blown HEPAs or out cover blocks	Addition of acid to tank	F2	S2	E01	03X
C-1-a	106C-01H	Tank atmosphere, residual filter surface contamination	Release of radioactive and/or hazardous material from tank C-106, through blown HEPAs or out cover blocks due to tank boiling with vent path blocked or failed	Tank boiling with lack of vent path	F2	S2	D07	03X
B-1-a	106C-01M	Tank inventory	Release of radioactive and/or hazardous material from C106 tank, due to high temperature in the waste tank	Exothermic, chemical reaction in tank due to inadvertent addition to tank	F2	S2	E01	03X
C-1-a	106C-12F	Tank inventory	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction in tank	Added chemicals to tank instead of normal water addition	F2	S2	E01	03X
B-1-a	CCF-20	Contents of two tanks	Release of radioactive and hazardous aerosols/vapors from tanks due to chemical reactions between waste and added materials	Reactive chemical additions to two tanks	F2	S2	D01	03X
B-1-a	I-222S-2-FLW-C	Aerosols and/or toxic vapors from receiver tank	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Human Error - Incorrect valve line up	F2	S2	E06	03X
C-1-a	XS-02-FLOW03	DCRT tank vapors/aerosols	Release of toxic gases (oxides of nitrogen) from DCRT due to chemical reaction	Chemical reaction between sodium nitrite (DCRT) and nitric acid (PFP transfer) due to failure to adjust waste pH prior to transfer	F2	S2	E01	03X
B-1-a	XS-03-TEMP01	DCRT tank contents	Release of radioactive aerosols from 244-TX DCRT headspace due to positive pressure	Chemical reaction in DCRT causes positive pressure	F2	S2	D01	03X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	XS-20-FLOW03	DCRT tank contents	Release of radioactive aerosols from 244-TX DCRT due to positive pressure caused by chemical reaction	Chemical reaction of 244-S material with contents of 244-TX caused by misrouting	F2	S2	B06	03X
B-1-a	CCF-01	Head space inventories from actively ventilated tanks	Radioactive and hazardous release from tanks due to extended loss of ventilation (over 6 months)	Sustained loss of offsite power	F1	S2	D07	03X
ANALYZED ACCIDENT: Flammable Gas Deflagrations - DST								
A-1-a	ITK-10-b	DST tank inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Spark from equipment or tools	F3	S3	B04	04
HAZARDOUS CONDITIONS								
A-1-a	102AW-02-PRES01	DST tank contents	Release of radioactive aerosols from 102-AW tank due to fire-explosion in waste tank (Dome Collapse)	Flammable concentration of gases in tank vapor space with spark source	F2	S3	B08	04X
A-1-a	I-242A-1-FLW-A	Aerosols and other radioactive material from TK-AW-102.	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Valves fail to regulate (Go closed) which fails pump and creates ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	S3	B08	04X
A-1-a	I-242A-1-FLW-B	Aerosols and other radioactive material from TK-AW-102.	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Feed pump fails which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	S3	B08	04X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	I-242A-1-FLW-C	Aerosols and other radioactive material from TK-AW-102.	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Plugged line which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	S3	B08	04X
A-1-a	I-242A-1-FLW-D	Aerosols and other radioactive material from TK-AW-102.	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Pump plugged which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	S3	B08	04X
A-1-a	I-242A-1-FLW-E	Aerosols and other radioactive material from TK-AW-102.	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from pump cavitation.	Empty feed tank which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	S3	B08	04X
A-1-a	ITK-11	Tank Inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Lightning, range fire, or seismic event ignites tank vapors	F2	S3	B09	04X
A-1-a	XS-26-PRES02	DST tank contents	Release of radioactive aerosols from 102-SY tank due to flammable gas fire-explosion (Dome Collapse)	Accumulation of flammable gases in vapor space and spark source	F2	S3	B08	04X
A-1-a	102AW-03-LEVE01	DST tank contents	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste leak into annulus and spark source	F2	S2	B12	04X
A-1-a	102AW-03-LEVE02	Liquid radioactive waste leaked into 102-AW annulus	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste mis-transfer into annulus and spark source	F2	S2	B06	04X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	ITK-FR-13	DST & SST tank liquid held in flex receiver	Release of radioactive aerosols/vapors from flex receiver due to buildup and ignition of flammable gas in receiver	Hydrogen gas buildup in tank/riser that travels into receiver + Ignition source (spark from herculite or equipment)	F1	S2	B08	04X
ANALYZED ACCIDENT: Flammable Gas Deflagrations - SST								
A-1-a	XS-01-FLOW03	SST and DCRT tank contents	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse and DCRT pressurization caused by flammable gas explosion/fire propagating from DCRT to single shell tank	Pipeline connecting single shell tank and DCRT fills with flammable gas; loss of ventilation flow in DCRT so that a flammable gas atmosphere is ignited by the ventilation outlet heater	F2	S3	B07	05
HAZARDOUS CONDITIONS								
A-1-a	ITK-08	Tank inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Exothermic reaction of incompatible materials in tank	F3	S3	B04	05X
A-1-a	ITK-09	Tank inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Failure to bond components or incorrect bonding	F3	S3	B08	05X
A-1-a	ITK-10-a	SST tank inventory	Release of radioactive material from in-tank fire or explosion due to intrusive activitiy (Dome Collapse)	Spark from equipment or tools	F3	S3	B04	05X
A-1-a	106C-01I	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse caused by tank high pressure	Fire in waste tank	F2	S3	B08	05X
A-1-a	106C-01J	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to high pressure in tank and possible dome collapse	Explosion/ fire in waste tank	F2	S3	B08	05X
A-1-a	106C-01Ma	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to flammable gas explosion/fire in tank caused by high temperature in the tank (Dome Collapse)	Chemical reaction in tank	F2	S3	B01	05X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	106C-02A	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	High waste temperature	F2	S3	B08	05X
A-1-a	106C-02B	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to ignition of high flammable gas content in tank and possible dome collapse	Ventilation system failure	F2	S3	B07	05X
A-1-a	106C-02C	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	Tank burp, release of trapped gas	F2	S3	B08	05X
A-1-a	106C-04A	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to tank damage caused by flammable gas explosion/fire because of high flammable gas content in the tank (Dome Collapse)	High flammable gas content due to chemical reaction in sludge layer	F2	S3	B01	05X
A-1-a	106C-04B	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to explosion/fire caused by ignition of flammable gas released from radiolysis in tank sludge	Radiolysis in sludge layer allows release of trapped gas to vapor space	F2	S3	B08	05X
A-1-a	106C-13A	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse, tank damage caused by high temperature	Fire in C-105 propagates into tank C-106	F2	S3	B09	05X
A-1-a	114SX-05.b.1	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to flammable gas ignition resulting in dome collapse	Radiolysis creating bubbles of gases in waste	F2	S3	B08	05X
A-1-a	XS-01-FLOW02	SST tank contents	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse caused by flammable gas burn	Loss of pump prime results in overheated pump that ignites flammable gas	F2	S3	B08	05X
A-1-a	XS-13-PRES02	Catch tank contents	Release of radioactive aerosols from 241-U-301B catch tank due to fire-explosion of flammable gas	Buildup of flammable gas in catch tank and spark source	F2	S3	B08	05X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	114SX-04.b.3b	Radioactive aerosols contained in tank head space	Radioactive aerosols released from head space of Tank SX-114 to atmosphere through exhaust HEPA filter due to flammable gas ignition in the headspace (Dome Collapse)	Flammable gas explosion/fire in SX-114. {Note: SX-114 is NOT currently identified as a Flammable Gas Watch list tank} Requires spark to be present	F1	S3	B08	05X
A-1-a	114SX-06.a.1b	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols from Tank SX-114 waste to atmosphere as a result of a dome collapse	Deflagration of H2 (Implies gas generation AND A Spark)	F1	S3	B08	05X
A-1-a	102AW-01-FLOW 102AW-02-PRES	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by chemical reaction of incompatible wastes	Misrouting to destination other than intended creates chemical incompatibility	F0	S3	B06	05X
A-1-a	102S-04.e3	Tank contents	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to generation of excessive heat leading to dome collapse	Addition of incompatible waste/chemical (misroute)	F0	S3	B06	05X
A-1-a	114SX-05.d	Radioactive material contained in tank head space	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to localized explosion/fire of flammable gas	Core Sampling through a pocket of gas large enough to exceed local LFL AND A Spark = local explosion/fire	F3	S2	B08	05X
A-1-a	ITK-10-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Spark from equipment or tools provide an ignition source	F3	S2	B04	05X
A-1-a	NP-15	Inventory in isolated or abandoned equipment	Radioactive and hazardous material release from isolated or abandoned equipment due to fire	Hydrogen producing chemical reactions in isolated or abandoned equipment	F3	S2	B08	05X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	106C-04Aa	Tank atmosphere	Release of radioactive and/or hazardous material from C106 tank, due to flammable gas content of the waste causing an exothermic reaction in waste tank	High flammable gas content in tank sludge layer due to chemical reaction	F2	S2	B08	05X
A-1-a	244AR-01.c.09	Radioactive and toxic material contained in tank	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to flammable gas ignition	Ignition of flammable gas that has collected in piping and tank dome	F2	S2	B08	05X
A-1-a	244AR-03.a.04	Radioactive material contained in the tank	Release of radioactive aerosols into cell due to ignition of flammable gas in 244-AR Vault tank headspace	Explosion/fire due to ignition of accumulated flammable gas	F2	S2	B08	05X
A-1-a	BND-02	Surface contamination in pits and risers	Release of radioactive aerosols from tank due to ignition of combustibles during preparation for bonding	Drilling holes for bonding attachments causes sparks when flammable gases or materials are present	F2	S2	B04	05X
A-1-a	ITK-08-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Exothermic reaction of incompatible materials in facility	F2	S2	B04	05X
A-1-a	ITK-09-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Failure to bond components or incorrect bonding	F2	S2	B08	05X
A-1-a	RSR-06-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Failure to bond components or incorrect bonding allows electrostatic spark	F2	S2	B08	05X
A-1-a	XS-01-FLOW01	DCRT tank contents	Release of radioactive aerosols from 244-TX DCRT due to ignition of flammable gas atmosphere	Pressure drop in transfer line releases flammable gas into DCRT atmosphere and ignition source causes deflagration	F2	S2	B01	05X
A-1-a	XS-03-LEVE01 XS-21-LEVE (244-S DCRT)	DCRT tank contents	Release of combustion products from 244-TX DCRT due to flammable gas burn in tank atmosphere	Evaporation of DCRT contents causing decreased ability of waste to retain flammable gases and spark source	F2	S2	B08	05X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	XS-03-PRES01 XS-21-PRES (244-S DCRT)	DCRT tank contents	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn in tank atmosphere	Loss of ventilation flow with accumulation of flammable gas and spark source	F2	S2	B07	05X
A-1-a	XS-03-TEMP03 XS-21-TEMP (244-S-DCRT)	DCRT tank contents	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn-explosion/fire in tank atmosphere	Buildup of gases, loss of ventilation, and spark source	F2	S2	B07	05X
A-1-a	XS-41B-LEVE01	Vent station catch tank contents	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in nozzle pit	Failure to empty catch tank with buildup of flammable gas in nozzle pit plus ignition source	F2	S2	B08	05X
A-1-a	XS-41C-LEVE01	Vent station catch tank inventory	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in catch tank pit	Leak of catch tank with buildup of flammable gas in catch tank pit plus ignition source	F2	S2	B08	05X
A-1-a	244AR-02.a.03	Radioactive material contained in vessel	Release of radioactive liquid in the form of aerosols contained in a cell to the exterior of the 244-AR facility due to ignition of flammable gas	Explosion/fire from Hydrogen buildup	F1	S2	B08	05X
ANALYZED ACCIDENT: HEPA Filter Failure - Exposure to High Temperature or Pressure								
A-1-a	106C-10J	Tank atmosphere and surface contamination on HEPA filters	Release of radioactive and/or hazardous material from C-106 tank due to tank structural damage, HEPA damage caused by high temperature	Fire in or around ventilation system	F2	S2	B09	06
HAZARDOUS CONDITIONS								

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	102S-04.c	Tank Waste/Vapor Space	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	F1	S3	B08	06X
B-1-a	106C-11J	Tank atmosphere, residual filter surface contamination	Release of radioactive and/or hazardous material from tank C-106, due to HEPA damage, beyond 200 F design	Exhauster heater overheat	F3	S2	D07	06X
B-1-a	106C-11M	Tank atmosphere, residual filter surface contamination	Release of radioactive and/or hazardous material from tank C-106, due to damaged HEPA filters	Event that damages HEPAs	F3	S2	D07	06X
B-1-a	114SX-04.c.2.c	Radioactive aerosols contained in the tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter deterioration	Deteriorated HEPA filter	F3	S2	D07	06X
B-1-a	244AR-01.b.04	Material trapped in filter	Release of radioactive aerosols from the facility exhaust stack due to filter failure	HEPA filter fails	F3	S2	D07	06X
B-1-a	CRN-19	Contaminates on above ground equipment	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials (filter crush)	F3	S2	D10	06X
B-1-a	CRN-20	Surface contamination in pit or riser	Radioactive or toxic material release from pit or riser due to dropping crane load onto above ground tank equipment	High wind or seismic event (Filter Crush)	F3	S2	D05	06X
A-1-a	XS-05-TEMP01	Material holdup on DCRT ventilation filters	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to failure of ventilation heater controls	F3	S2	B07	06X
A-1-a	XS-05-TEMP02	Material holdup on DCRT ventilation filters	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to flammable gas buildup and ignition	F3	S2	B08	06X
A-1-a	102S-04.e1b	Vapor Space Gases	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	F2	S2	B08	06X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	106C-01F	Tank atmosphere	Release of radioactive and/or hazardous material from C106 tank, blown out HEPA filters and/or discharge out cover blocks due to high tank pressure	Blockage of inlet, outlet, and cascade lines	F2	S2	D07	06X
A-1-a	106C-11K	Tank atmosphere and surface contamination on HEPA filters	Release of radioactive and/or hazardous material from C-106 tank due to HEPA filter damage, spread of contamination caused by high temperature in ventilation system	Fire in exhauster ductwork	F2	S2	B07	06X
B-1-a	106C-110	Tank atmosphere	Release of radioactive and/or hazardous material from C106 tank, due to loss of filtration	HEPA filter blowout	F2	S2	D07	06X
A-1-a	204AR-11F	Unloader room environment /airborne contaminants	Release of airborne radiological contamination through the ventilation stack from the unloader room atmosphere due to fire in ventilation ducting	Fire in ventilation ducting resulting in damage to the HEPA filters and release to the atmosphere	F2	S2	B07	06X
A-1-a	NP-02	Head space inventory in actively ventilated tanks, ventilation system inventory	Radioactive and hazardous material releases from tanks and ventilation systems due to fire	Lightning strikes ventilation system	F2	S2	B21	06X
B-1-a	XS-05-FLOW01	Radioactive material entrained in DCRT HEPA filter-DCRT aerosols	Release of aerosols and filter media from DCRT ventilation system due to HEPA filter damage	Replacement of exhaust fan with larger capacity fan causes HEPA filter damage	F2	S2	E13	06X
ANALYZED ACCIDENT: Fire in Contaminated Area								
A-1-a	CRN-05	Pits and risers inventory	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Human error in positioning crane load	F3	S2	B26	07
HAZARDOUS CONDITIONS								
A-1-a	102S-02.d2	Residual Contamination in Tank Pump Pit	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into pit ignited from ruptured gas tank.	Vehicle drives into pit cover puncturing gas tank + Ignition	F3	S2	B25	07X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	CRN-06	Pits and risers inventory	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Mechanical failure in positioning crane load	F3	S2	B26	07X
A-1-a	CRN-07	Pits and risers inventory	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Crane hits electrical lines/supplies	F3	S2	B26	07X
A-1-a	CRN-08	Pits and risers inventory	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Lightning	F3	S2	B21	07X
A-1-a	CVR-05	Contamination in the pit.	Release of radioactive or hazardous material through combustion or explosion/fire of materials in pit due to human error	Failure to sniff or improper sniffing	F3	S2	B09	07X
B-1-a	CVR-15-I	Material in the pit from which a coverblock is being removed	Release of radioactive or hazardous material from pit upon dropping or falling coverblocks or pieces of coverblocks	Coverblock hooks fail or pieces of degraded coverblock fall into pit	F3	S2	D10	07X
A-1-a	VEH-01	Material available on vehicle.	Release of radioactive or toxic materials from cask due to fire caused by vehicle operation	Vehicle catches on fire	F3	S2	B09	07X
B-1-a	102AW-04-STRU03	Residual contamination in pump pit	Release of radioactive particulate from 102-AW central pump pit due to re-suspension	Equipment drop during crane work	F2	S2	D10	07X
A-1-a	102S-02.b1	Material leaked into the Tank Pump Pit during saltwell pumping.	Release of radioactive aerosols to atmosphere from Tank S-102 pump pit due to flammable gas generated in pump pit igniting and burning paint off pump pit walls	Jumper Leak + H2 evolution (or ammonia) + Spark	F2	S2	B12	07X
A-1-a	102S-02.b2	Residual Contamination in Tank Pump Pit	Release of radioactive aerosols to atmosphere from Tank S-102 due to flammable gas from tank igniting in pump pit and burning paint off pump pit	H2 /Ammonia production migrates into pump pit + Spark (pumps not operating)	F2	S2	B08	07X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	106C-06D	Residual pump pit contamination	Release of contamination from C-106 pump pit and potential worker injury due to fire	Fire in or near pump pit due to vehicle fuel spill and burn	F2	S2	B25	07X
A-1-a	106C-06L	Residual pump pit contamination	Release of contamination from C-106 pump pit due to explosion/fire affecting the structural integrity	Explosion/fire in pump pit	F2	S2	B09	07X
A-1-a	VEH-01-I	Material in samples from MISFs, material on equipment from inside MISFs, fuel in vehicle gas tank	Release of radioactive or toxic materials from vehicle carrying MISF samples or contaminated equipment due to vehicle fire	Vehicle catches on fire	F2	S2	B09	07X
A-1-a	102AW-04-TEMP	Residual contamination in central pump pit	Release of radioactive particulate from 102-AW central pump pit due to fire	Pump motor electrical fire	F1	S2	B08	07X
A-1-a	XS-12-FLOW02	Residual contamination in diversion box 241-U-152	Release of aerosols from diversion box 241-U-152 due to flammable gas deflagration	Chemical reaction of catch tank material with backflow of vapors via diversion box drain line	F1	S2	B01	07X
A-1-a	XS-12-FLOW03	Residual contamination in diversion box 241-U-152	Release of aerosols from diversion box 241-U-152 due to hydrogen deflagration	Radiolysis of catch tank material with backflow of vapors via diversion box drain line and ignition source	F1	S2	B01	07X
ANALYZED ACCIDENT: Waste Transport Vehicle Accident								
A-1-a	VEH-03	Sample transport cask	Release of radioactive or toxic material from cask due to damage to transport casks during a high wind/tornado	High wind/tornado	F2	S2	D20	08
HAZARDOUS CONDITIONS								
NP	VEH-03-I	Material in samples from MISFs	Release of radioactive or toxic material from MISF samples in transport casks due to high wind/tornado damage	High wind/tornado	F2	S2	D20	08X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	VEH-02	Sample transport cask	Release of radioactive or toxic material from cask due to damage to transport casks during an earthquake	Seismic event	F1	S2	D18	08X
B-1-a	VEH-02-I	Material in samples from MISFs	Release of radioactive or toxic material from MISF samples in transport casks due to seismic damage	Seismic event	F1	S2	D18	08X
ANALYZED ACCIDENT: Organic Solvent Fire/Organic Salt-Nitrate Reaction								
A-1-a	I-222S-1-CMP-E	Aerosols from receiver tank or 244-S	Release of radioactive aerosols to the atmosphere from 244-S or receiver tank due to over pressurization of tank caused by organic fire.	Human Error - Upset of 222-S Lab operations	F3	S3	B01	09
HAZARDOUS CONDITIONS								
A-1-a	102AW-09-COMP01	DST tank contents	Release of combustion product aerosols from 102-AW tank due to fire in separable organic layer in waste tank causing dome collapse	Organic reaching flash point or being aerosolized plus ignition source	F2	S3	B08	09X
A-1-a	I-PFP-1-CMP-E	High level waste in the receiver tank.	Release of high level waste from receiver tank due to fire from organics transferred from PFP.	Excess organic material added to waste results in fire	F2	S3	B01	09X
A-1-a	I-BPLANT-1-CMP-E	Receiver tank waste	Release of tank waste due to fire in receiver tank from transferring organics from B Plant.	Human error - Tank containing organics in B Plant rupture and spills organics to the drains which eventually end up in tank 24-1 and an inadvertent transfer to tank farms	F1	S3	B01	09X
A-1-a	I-242A-4-TMP-A	Aerosols and other radioactive material from feed tank TK-AW-102.	Release of radioactive material from TK-AW-102 caused by ignition of organics in TK-C-100 which pressurizes the drain line and propagates the fire down the line to feed tank TK-AW-102.	Faulty control of vacuum to CA-1 vessel causing pot to boil with organic layer available.	F0	S3	B08	09X
A-1-a	RSR-07-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Spark from failure to use non-sparking tools or sparks from welding, cutting, grinding, etc.	F3	S2	B09	09X
ANALYZED ACCIDENT: Natural Phenomena - High Wind								

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	CRN-13-a	Tank Inventory	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	High wind	F3	S3	D20	10
			HAZARDOUS CONDITIONS					
B-3-b	CRN-23	Tank Inventory	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	High wind or seismic event	F3	S2	D05	10X
B-1-a	CRN-13-IA	Contents of facility	Release of radioactive and/or toxic materials from below ground facility due to containment top collapse or equipment damage by boom failure	High wind or seismic event	F2	S2	D05	10X
NP	CRN-13-IC	Contents of facility	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure	High wind or seismic event	F2	S2	D05	10X
B-3-b	CRN-23-IA	Contents of facility	Release of radioactive or toxic materials from underground facility bottom due to loss of vertical load control, dropping crane load into facility (subsurface leak)	High wind or seismic event	F2	S2	D05	10X
			ANALYZED ACCIDENT: Natural Phenomena - Lightning					
A-1-a	NP-03	Head space inventories and combustion products from tank fire	Radioactive and hazardous material releases from tanks due to fire in tanks	Lightning strikes riser in tank farm	F2	S2	B21	11
			HAZARDOUS CONDITIONS					
A-1-a	EE-01	Contents of tanks in one tank farm	Release of radioactive and toxic materials from tanks due to external force and fire	Aircraft crash	F1	S3	B23	11X
A-1-a	NP-11	Tank inventories	Radioactive and hazardous material releases from tank farms due to lava flow	Eruption of molten lava from fissures	F0	S3	D18	11X
NP	ITK-11-I	Material inside MISF	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Lightning, range fire, or seismic event ignites facility vapors	F1	S2	B09	11X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Tank Failure Due to Excessive Loads								
B-1-a	CRN-03	Tank inventory	Release of radioactive and/or toxic materials from tank due to dome collapse	Human error results in excessive weight on dome	F3	S3	C10	12A
B-1-a	CRN-04	Tank inventory.	Release of radioactive and/or toxic materials from tank due to dome collapse	Crane or rigging failures drop load resulting in large impact to dome	F3	S3	C10	12B
B-1-a	CRN-11	Tank inventory	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Human error: improper load assembly, rigging, crane overloaded	F3	S3	C10	12C
HAZARDOUS CONDITIONS								
B-1-a	102AW-04-STRU01A	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Equipment drop during crane work causes excessive dome loading	F3	S3	C10	12X
B-1-a	102AW-04-STRU02	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Violation of limits on dome loading	F3	S3	C10	12X
B-1-a	102S-05.a1a	Tank Contents	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Excess Gravel overburden	F3	S3	C10	12X
B-1-a	102S-05.a1aa	Tank Contents	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Large Vehicle traffic over tank	F3	S3	C10	12X
B-1-a	106C-01X	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Overweight vehicles over top of tank	F3	S3	C10	12X
B-1-a	114SX-06.a.1a	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols released from Tank SX-114 waste to atmosphere due to dome collapse	Gravel overburden Large Vehicle	F3	S3	C10	12X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	CRN-12	Tank inventory	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Mechanical failure: corrosion, faulty materials	F3	S3	C10	12X
B-1-a	106C-01Y	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Flooding over top of tank	F2	S3	C19	12X
B-1-a	ITK-FR-04	DST & SST tank inventory	Release of radioactive aerosols from tank due to tank collapse	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing loss of structural integrity leading to tank collapse	F1	S3	C26	12X
B-1-a	ITK-FR-19	DST & SST tank inventory	Release of radioactive aerosols from tank due to dome collapse	Hydraulic jacks on assembly stand are operated while assembly is bolted to flange tearing out riser and destroying tank integrity leading to dome collapse	F1	S3	C26	12X
B-1-a	CRN-03-IA	Contents of facility	Release of radioactive and/or toxic materials from facility due to containment top collapse	Human error results in excessive weight on top of containment	F3	S2	E10	12X
B-1-a	CRN-09	Contamination emanating from tank headspace and material contained in ventilation system.	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Human error in positioning crane load	F3	S2	E26	12X
B-1-a	CRN-10	Material emanating from tank headspace and the material contained in the ventilation system.	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Mechanical failure in positioning crane load	F3	S2	D26	12X
B-1-a	CRN-11-IA	Contents of facility or equipment	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	F3	S2	E10	12X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	CRN-04-IA	Contents of facility	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	F2	S2	D10	12X
B-1-a	CRN-12-IA	Contents of facility or equipment	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	F2	S2	D10	12X
ANALYZED ACCIDENT: Tank Failures Due to Vacuum or Degradation								
B-1-a	114SX-06.a.3	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols from Tank SX-114 waste to the atmosphere due to dome collapse as a result of loss of strength due to aging	Long term aging Resulting in tank degradation	F1	S3	C12	13
HAZARDOUS CONDITIONS								
B-1-a	106C-01E	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Subcooling of tank vapor space due to water addition of flushing	F2	S3	C11	13X
B-1-a	102AW-03-LEVE03	Radioactive waste in DST annulus	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by floating the primary tank within the annulus	Misrouting of liquid waste to the annulus causes floating of primary tank and subsequent dome collapse	F1	S3	C06	13X
B-1-a	102S-05.a3	Tank Contents	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Past Thermocycling of Tank	F1	S3	C12	13X
B-1-a	102S-05.a3a	Tank Contents	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Long Term Aging	F1	S3	C12	13X
B-1-a	114SX-04.a.3	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols in tank released from Tank SX-114 to atmosphere due high temperatures causing dome concrete strength loss	No Ventilation Flow High Ambient Temperature Conditions Resulting in tank degradation	F1	S3	C12	13X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	114SX-04.b.1.a.2	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive material from tank SX-114 to atmosphere due to high temperature in the dome leading to dome collapse (long term closure of butterfly valve)	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum. Resulting in tank degradation	F1	S3	C07	13X
B-1-a	114SX-04.b.1.b.2a	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to bad welds	F1	S3	C12	13X
B-1-a	114SX-04.b.1.d.2	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols from Tank SX-114 waste to atmosphere due to dome collapse	Filter plugging results in lack of heat removal with high temperatures degrading dome strength	F1	S3	C07	13X
A-1-a	114SX-05.c.2b	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to dome collapse	Chemical reaction caused by addition of chemical/solution. Resulting in tank degradation	F1	S3	C01	13X
B-1-a	CCF-17	Contents of tank	Release of radioactive and hazardous materials from tank due to dome collapse	Corrosion of rebar in concrete SST domes	F1	S3	C12	13X
B-1-a	102AW-02-PRES03	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Blocked ventilation inlet causes excessive vacuum leading to dome collapse	F0	S3	C07	13X
B-1-a	102AW-02-PRES04	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Condensation of vapors causes excessive vacuum leading to dome collapse	F0	S3	C11	13X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	102AW-02-PRES05	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Sub-cooling of vapor during equipment flushing causes excessive vacuum leading to dome collapse	F0	S3	C11	13X
B-1-a	102AW-02-PRES06	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Ventilation imbalance causes excessive vacuum lead ion to dome collapse	F0	S3	C07	13X
B-1-a	102AW-02-PRES07	DST tank contents	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Wrong size portable ventilator chosen for support work causes excessive vacuum leading to dome collapse	F0	S3	C13	13X
B-1-a	102S-04.d1	Tank Waste/Vapor Space gasses	Release of radioactive aerosols contained in tank S-102 vapor space to the atmosphere due to low pressure causing dome collapse	Misoperation of exhauster during saltwell pumping	F0	S3	C07	13X
B-1-a	106C-01A	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, structural damage, and dome collapse due to tank low pressure	Air inlet plugged due to icing, dust	F0	S3	C07	13X
B-1-a	106C-01B	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Inlet air valve closed	F0	S3	C07	13X
B-1-a	106C-01C	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Exhauster damper positioned incorrectly	F0	S3	C07	13X
B-1-a	106C-01D	Tank inventory	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Wrong sized portable exhauster	F0	S3	C13	13X
B-1-a	114SX-04.a.2	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols released from failed tank dome due to vacuum produced by valving error.	Human Error: Valve out Flammable Watch list (SX-109) Butterfly valve	F0	S3	C07	13X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	114SX-04.b.1.c.2	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to dome collapse	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	F0	S3	C07	13X
B-1-a	114SX-05.b.3	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols released from Tank SX-114 waste to atmosphere when dome collapses due to sudden vacuum in tank	Quenching (adding cold liquid to hot tank contents) creating a vacuum	F0	S3	C11	13X
ANALYZED ACCIDENT: Natural Phenomena - Seismic								
B-1-a	NP-07	Multiple tanks and ventilation systems inventories, 204-AR tanker spill	Radioactive and hazardous material releases from tanks and ventilation systems due to seismic event	Earthquake collapses domes	F1	S3	D18	14
HAZARDOUS CONDITIONS								
B-1-a	NP-13	Tank head space inventories and splash from dome collapse	Radioactive and hazardous material releases from tanks due to excessive weight on dome	Accumulations of heavy snow followed by heavy rain	F2	S3	C10	14X
B-1-a	102S-05.a2	Tank Contents	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Seismic Event (Common Mode Failure)	F1	S3	D18	14X
B-1-a	114SX-04.b.1.b.2b	Radioactive material contained in the tank (this tank has a dry crust which may be composed of easily disturbed dusty material)	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to Seismic activity coupled with failure to respond Resulting in tank degradation	F1	S3	D18	14X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	244AR-02.a.14	Radioactive material contained in the four tanks and facility	Release of radioactive aerosols from waste contained in tanks (4) and building due to earthquake	Earthquake collapses building and four tanks	F1	S3	D18	14X
B-1-a	CRN-13-b	Tank Inventory	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	Seismic event	F1	S3	D18	14X
B-1-a	CCF-18	Contents of tanks, products of combustion	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank propagates to connecting tank and both tanks collapse during cooldown from negative tank pressure	F0	S3	C11	14X
B-1-a	CCF-19	Contents of tanks, products of combustion	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank causes pressure transient that leads to GRE in connecting tank with subsequent fire and tank collapses from negative tank pressure	F0	S3	C11	14X
B-1-a	244AR-05.a.02	Total amount of radioactive material contained in facility	Release of radioactive material from facility due to seismic event which causes building collapse without cell collapse	Seismic event damages facility structure	F2	S2	D18	14X
ANALYZED ACCIDENT: Spray Leak in Structure or from Overground Waste Transfer Lines								
B-1-a	XS-06-FLOW02	DCRT waste being transferred to 102-SY	Release of liquid radioactive waste from DCRT transfer piping to 102-SY due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	F2	S3	D12	15
HAZARDOUS CONDITIONS								
B-1-a	102AW-01-FLOW 102AW-04-PRES	Liquid radioactive waste being transferred to DST from DCRT	Release of radioactive aerosol from transfer pipe which runs from DCRT to 102-AW tank due to spray leak into open underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	F3	S3	D01	15X
B-1-a	COB-01	Transfer inventory	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid removed	F3	S3	D12	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	OGT-EXT3-01A	DST & SST tank inventory	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by truck crash into piping system	Human error, line struck by truck	F3	S3	E25	15X
B-1-a	102AW-01-FLOW01	Liquid radioactive waste being transferred to DST from DCRT	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW tank due to spray leak into open underground structure	Piping leak due to corrosion caused by transferring high temperature waste	F2	S3	D01	15X
B-1-a	OGT-FLOW2-02	DST & SST tank inventory	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused by over-rated pump	Installation of incorrect pump and failure of inner pipe AND Failure of weld on flange of outer pipe AND Isolation valves closed on secondary pipe drains AND No concrete shield in place	F2	S3	E13	15X
B-1-a	W058-FLOW15	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	F2	S3	E06	15X
B-1-a	W058-FLOW16	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit	F2	S3	D12	15X
B-1-a	W058-FLOW17a	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	F2	S3	E06	15X
B-1-a	W058-FLOW17b	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	F2	S3	D12	15X
B-1-a	W058-FLOW17c	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	F2	S3	D16	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	W058-FLOW18	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	F2	S3	E06	15X
B-1-a	W058-FLOW19	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit plus mitigative features failure	F2	S3	D12	15X
B-1-a	W058-FLOW20a	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	F2	S3	E06	15X
B-1-a	W058-FLOW20b	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	F2	S3	D12	15X
B-1-a	W058-FLOW20c	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	F2	S3	D16	15X
B-1-a	W058-INTEG32	Amount of supernate or slurry aerosol that could be released through a small orifice	Release of radioactive supernate or slurry aerosols to the atmosphere due to a spray leak from test risers located near SY-A and SY-B valve pits	Failure of primary piping and path for spray leak from test riser plus mitigative features failure	F2	S3	D12	15X
B-1-a	XS-06-FLOW03	Radioactive waste being transferred from PFP to DCRT	Release of liquid radioactive waste from transfer piping from PFP to DCRT due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	F2	S3	D12	15X
B-1-a	102AW-13-FLOW01	Radioactive waste being pumped from SST to DCRT	Release of radioactive waste aerosols due to spray leak of waste from flush pit	Backflow of waste to flush pit with valve or pipe leak and cover block off	F1	S3	D12	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	OGT-FLOW1-03A	DST & SST tank inventory	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by misdirected flow	Spray leak caused by: JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to external flush fixture and release to the environment	F1	S3	E06	15X
B-1-a	OGT-NP3-01	DST & SST tank inventory	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused to earthquake	Failure of line and concrete shielding during earthquake	F1	S3	D18	15X
B-1-a	OGT-NP3-02	DST & SST tank inventory	Release of radioactive or hazardous aerosols from the primary pipe due to leak caused by high wind	Pipe is blown off supports AND No concrete shielding in place	F1	S3	D20	15X
B-1-a	W058-INTEG34	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	S3	D23	15X
B-1-a	W058-INTEG35	Amount of slurry transferrable through a limited size orifice	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Seismic event	F1	S3	D18	15X
B-1-a	W058-INTEG36	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	S3	D23	15X
B-1-a	W058-INTEG37	Amount of supernate transferrable through a limited size orifice	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Seismic event	F1	S3	D18	15X
B-1-b	I-222S-1-CMP-C	222-S lab waste from tank 102 at 219-S (capacity 4000 gal)	Release (potential spray leak) of 222-S lab waste to atmosphere in diversion box or 244-S Pump Pit due to increased corrosion from failure to add NaOH.	Human Error - Failure to add NaOH	F3	S2	E01	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-b	I-BPLANT-1-CMP-B	Low level waste from B Plant tank 24-1 (Administrative volume limit 7500 gal)	Release (spray leak) of low level waste at diversion box from transfer of low pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH leads to corrosion and leak in pipe.	F3	S2	E01	15X
B-1-b	I-PUREX-1-AGT-B	TRU waste from PUREX.	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error or Mechanical Failure - Agitator fails or is not turned on	F3	S2	D05	15X
B-1-b	I-PUREX-1-CMP-B	TRU waste from PUREX.	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in corrosion and causes spray leak.	F3	S2	E01	15X
B-1-b	I-PUREX-3-AGT-B	TRU waste from PUREX.	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Agitator fails or is not turned on results in corrosion and causes spray leak.	F3	S2	D05	15X
B-1-b	I-PUREX-3-CMP-B	TRU waste from PUREX.	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in spray leak.	F3	S2	E01	15X
B-1-b	I-TPLANT-1-CMP-B	Low level waste from T Plant tank 15-1 (Approximate capacity 14,500 gal)	Release (spray) of low level waste at diversion box from transfer of lower pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH causes corrosion and associated spray leak.	F3	S2	E01	15X
B-1-a	XS-01-TEMP01	Liquid radioactive waste in saltwell or PFP transfer piping to DCRT	Release of steam-aerosol from transfer piping in pump pit due to steam hammer and resulting pipe damage	Extended recirculation and consequential heating of saltwell liquid with sudden opening of valve when cover block is open	F3	S2	D06	15X
B-1-a	204AR-07A	Aging waste DST tank contents	Release of liquid rad waste and high airborne in unloading room from the TK-102-AY due to reverse pumping of TK-102-AY contents back to 204AR	Pump in pit 02D starts and pumps back to the 204AR building through the transfer piping and leaks	F2	S2	E06	15X
B-1-b	I-222S-2-LEK-E	222-S lab waste from tank 102 at 219-S (capacity 4000 gal)	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from a seismic event.	Earthquake	F2	S2	D18	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-b	I-242A-1-LEK-E	Liquid waste from feed tank TK-AW-102.	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	F2	S2	D18	15X
B-1-b	I-242A-2-LEK-E	Slurry from the evaporator.	Release of slurry tank waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes leak.	F2	S2	D18	15X
B-1-b	I-242S-2-LEK-E	Contaminated fire water from 242-S pump room.	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake	F2	S2	D18	15X
B-1-b	I-242S-4-LEK-E	Contaminate fire water from 242-S condenser room.	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	S2	D18	15X
B-1-b	I-BPLANT-2-LEK-E	Low level waste from B Plant tank 24-1 (Administrative volume limit 7500 gal)	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, cuased by rupture at pipe connections from an earthquake.	Earthquake causes spray leak	F2	S2	D18	15X
B-1-b	I-PFP-2-LEK-E	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	F2	S2	D18	15X
B-1-b	I-PFP-3-LEK-E	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake	F2	S2	D18	15X
B-1-b	I-PUREX-2-LEK-E	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by an earthquake.	Earthquake causes spray leak.	F2	S2	D18	15X
B-1-b	I-PUREX-4-LEK-E	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	S2	D18	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-b	I-TPLANT-2-LEK-E	Low level waste from T Plant tank 15-1 (Approximate capacity 14,500 gal)	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	S2	D18	15X
B-1-a	XS-06-FLOW04	Radioactive waste being pumped from SST to DCRT	Release of liquid radioactive waste from transfer piping from an SST to a DCRT due to spray leak (SPUTTER) of saltwell liquor from DCRT pump pit	Pipe failure	F2	S2	D12	15X
B-1-b	I-222S-2-LEK-B	222-S lab waste from tank 102 at 219-S (capacity 4000 gal)	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	S2	D16	15X
B-1-b	I-242A-1-LEK-B	Liquid waste from feed tank TK-AW-102.	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	S2	D16	15X
B-1-b	I-242A-2-LEK-B	Slurry from the evaporator.	Release of slurry tank waste to the atmosphere due to spray leak at the diversion boxes or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	S2	D16	15X
B-1-b	I-242S-2-LEK-B	Contaminated fire water from 242-S pump room.	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-b	I-BPLANT-2-LEK-B	Low level waste from B Plant tank 24-1 (Administrative volume limit 7500 gal)	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-b	I-PFP-2-LEK-B	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-b	I-PFP-3-LEK-B	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-b	I-PUREX-2-LEK-B	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-b	I-PUREX-4-LEK-B	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-b	I-TPLANT-2-LEK-B	Low level waste from T Plant tank 15-1 (Approximate capacity 14,500 gal)	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	S2	D16	15X
B-1-a	OGT-TEMP1-02	DST & SST tank inventory	Release of radioactive or hazardous vapors/aerosols from the primary pipe due to spray leak caused by high temperatures	Vehicle accident above ground start fire Melt the EPDM hose causing a leak to secondary pipe; Pumping occurring, fire fails gasket and facilitates a release to atmosphere	F1	S2	E25	15X
			ANALYZED ACCIDENT: Spray Leak from Underground Waste Transfer Lines					
B-1-a	EE-16	Material leaked from transfer line	Release of radioactive and hazardous material from transfer line spray leak due to excavation error	Excavation into waste transfer line during a transfer	F3	S3	D22	16
			HAZARDOUS CONDITIONS					
C-3-b	NP-08	Inventory in transfer lines	Radioactive and hazardous material releases from transfer pipes due to seismic event (Possible Spray Leak)	Earthquake shears pipes and encasements during transfer	F2	S3	D18	16X
B-1-a	102AW-01-TEMP	Radioactive waste being pumped to DCRT	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW due to spray leak of liquid waste from transfer pipe leak	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	F1	S3	D01	16X
B-1-b	I-222S-2-LEK-C	222-S lab waste from tank 102 at 219-S (capacity 4000 gal)	Release of 222-S lab waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	F2	S2	D22	16X
B-1-b	I-242A-1-LEK-C	Liquid waste from feed tank TK-AW-102.	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-b	I-242A-2-LEK-C	Slurry from the evaporator.	Release of slurry tank waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
B-1-b	I-242S-2-LEK-C	Contaminated fire water from 242-S pump room.	Release of contaminated water to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
B-1-b	I-BPLANT-2-LEK-C	Low level waste from B Plant tank 24-1 (Administrative volume limit 7500 gal)	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
B-1-b	I-PFP-2-LEK-C	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line	F2	S2	D22	16X
B-1-b	I-PFP-3-LEK-C	TRU mixed waste from PFP tank D-5.	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	F2	S2	D22	16X
B-1-b	I-PUREX-2-LEK-C	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from inadvertent excavation.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
B-1-b	I-PUREX-4-LEK-C	TRU waste from PUREX.	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
B-1-b	I-TPLANT-2-LEK-C	Low level waste from T Plant tank 15-1 (Approximate capacity 14,500 gal)	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	S2	D22	16X
ANALYZED ACCIDENT: Caustic Spray Leak								
B-1-a	107AN-02-PRES	Contents of caustic truck	Release of caustic aerosol from caustic truck transfer piping due to spray leak	Piping/hose leak initiated by various causes	F3	S2	D12	17
HAZARDOUS CONDITIONS								

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	107AN-01-LEVE01	Caustic solution	Release of caustic material from truck tank due to leak (aerosol spray)	Open valve on truck with pressurized tank transfer.	F3	S2	E06	17X
B-1-a	107AN-02-PRES02	Caustic solution	Release of caustic material from transfer piping due to high pressure (aerosol spray)	Hose disconnect	F3	S2	D06	17X
B-1-a	107AN-01-LEVE02	Caustic solution	Release of caustic material from truck tank due to leak (aerosol spray)	Truck tank leak	F2	S2	D12	17X
B-1-a	107AN-01-TEMP02	Caustic solution	Spray release of caustic material from truck tank due to high temperature	Fire in gas tank	F1	S2	D09	17X
			ANALYZED ACCIDENT: Tank Bump					
B-1-a	102AW-02-TEMP02	DST tank vapors/aerosols	Release of radioactive aerosols from tank 102-AW due to tank bump	High heat waste combined with loss of ventilation contributes to tank bump	F2	S2	D01	18A
			HAZARDOUS CONDITIONS					
B-1-a	102AW-09-TEMP01	DST tank vapors/aerosols	Release of radioactive aerosols from tank 102-AW atmosphere due to tank bump	High heat waste plus loss of cooling and-or mixing pump (not yet installed) operation	F2	S2	D01	18A X
B-1-a	XS-26-TEMP01	DST tank vapors/aerosols	Release of radioactive aerosols from 102-AW due to tank bump	High heat waste plus loss of cooling contributes to tank bump	F2	S2	D01	18A X
B-1-a	114SX-05.b.2	Radioactive aerosols contained in the tank headspace and some tank waste material (this tank has a dry crust which may be composed of easily disturbed dusty material)	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to sudden flashing of water added to tank for cooling	Flashing (adding cold liquid to hot tank contents)	F0	S2	D01	18A X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Unfiltered Release								
B-1-a	114SX-04.c.2.a	Radioactive aerosols contained in the tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter seal failure	HEPA filter seal failure	F3	S2	D07	18B
HAZARDOUS CONDITIONS								
B-1-a	106C-11E	Tank atmosphere	Release of unfiltered tank atmosphere from C-106 tank, due to damaged ductwork	Damage to ventilation ductwork upstream of filters	F3	S2	D07	18B X
B-1-a	106C-11L	Tank atmosphere, residual filter surface contamination	Release of radioactive and/or hazardous material from tank C-106, through HEPA filter path due to human error in installation of filter	Improper installation of HEPAs	F3	S2	E07	18B X
B-1-a	114SX-04.c.2.b	Radioactive aerosols contained in the tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster defective HEPA filter	Defective HEPA filter	F3	S2	D07	18B X
B-1-a	CRN-09-I	Residual materials in the ventilation ductwork or ventilation filters	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Human error in positioning crane load	F3	S2	E26	18B X
B-1-a	114SX-04.c.1	Radioactive aerosols contained in tank headspace	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to mechanical failure of exhauster HEPA filter	Plenum structure failure pierces filter	F2	S2	D07	18B X
B-1-a	114SX-04.c.2.d	Radioactive aerosols contained in the tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter installation errors	Improper Installation (Human error)	F2	S2	E07	18B X
B-1-a	CRN-10-I	Residual materials in the ventilation ductwork or ventilation filters	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Mechanical failure in positioning crane load	F2	S2	D26	18B X
B-1-a	114SX-04.b.1.b.1b	Radioactive aerosols located in tank headspace	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to failure of exhaust ducting from seismic event (Mechanical disruption)	Ducting failure from Seismic activity	F1	S2	D18	18B X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Subsurface Leak Resulting in Pool								
B-3-b	XS-07-FLOW02	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Corrosion of inner and outer pipe	F3	S2	D16	21A
B-3-b	XS-07-FLOW06	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste to soil from transfer pipe out of 244-TX-DCRT due to leak in primary pipe and encasement	Water hammer causes failure of primary pipe and encasement	F3	S2	D17	21B
HAZARDOUS CONDITIONS								
B-2-b	102AW-01-FLOW02	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer piping which runs to 102-AW due to leak from primary pipe and encasement	Excavation accident fails primary pipe and encasement	F3	S2	D22	21X
B-3-b	102AW-01-FLOW03	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Corrosion of inner and outer pipe cause failure of primary pipe and encasement	F3	S2	D16	21X
B-3-b	102AW-01-FLOW04	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	High structural loading from traffic or cranes fails primary pipe and encasement	F3	S2	D10	21X
B-3-b	102AW-01-FLOW06	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	F3	S2	D12	21X
B-3-b	102AW-01-FLOW07	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Water hammer cause failure of primary pipe and encasement	F3	S2	D17	21X
B-2-b	CRN-03-IB	Contents of facility	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Human error results in excessive weight on top of containment	F3	S2	E10	21X
B-2-b	CRN-21-IB	Contents of facility	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Human error: improper load assembly, rigging, positioning error	F3	S2	E10	21X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	W058-INTEG07a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F3	S2	D12	21X
B-3-b	XS-02-FLOW05	PFP waste being transferred to DCRT	Release of liquid radioactive waste to the soil from PFP transfer piping due to pipe break	Pipe break from various causes	F3	S2	D12	21X
B-2-b	XS-07-FLOW01	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Excavation accident fails primary pipe and encasement	F3	S2	D22	21X
B-3-b	XS-07-FLOW03	Liquid radioactive waste being transferred out of DCRT	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	High structural loading from traffic or cranes cause failure of primary pipe and encasement	F3	S2	D10	21X
B-3-b	XS-07-FLOW05	Liquid radioactive waste being transferred out of DCRT	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	F3	S2	D12	21X
B-3-b	102AW-01-FLOW05	Liquid radioactive waste being transferred to DST	Release of radioactive waste to soil from transfer piping to 102-AW due to leak from primary pipe and encasement	Seismic event fails primary pipe and encasement	F2	S2	D18	21X
B-2-b	CRN-04-IB	Contents of facility	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	F2	S2	D10	21X
B-2-b	CRN-22-IB	Contents of facility	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Mechanical failure: corrosion, faulty materials, hydraulics	F2	S2	D10	21X
C-2-b	W058-INTEG01a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	S2	D12	21X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	W058-INTEG01b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	S2	D12	21X
C-2-b	W058-INTEG03a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	F2	S2	D05	21X
C-2-b	W058-INTEG13a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	S2	D06	21X
C-2-b	W058-INTEG13b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	S2	D12	21X
C-2-b	W058-INTEG14a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	F2	S2	D05	21X
C-2-b	W058-INTEG18a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	S2	D12	21X
B-3-b	XS-01-PRES01	Liquid radioactive waste in saltwell or PFP transferred to DCRT	Release of liquid radioactive waste from damaged transfer piping to 244-TX DCRT due to over pressure (Pool)	Use of wrong size pump and closed valve causes over pressure and subsequent pipe failure	F2	S2	E13	21X
B-3-b	XS-06-FLOW05	Radioactive liquid waste transferred from DCRT	Release of waste from transfer pipe out of 244-TX-DCRT to the soil due to flow path to soil	Concurrent failure of transfer piping and encasement	F2	S2	D12	21X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-3-b	XS-07-FLOW04	Liquid radioactive waste being transferred out of DCRT	Release of radioactive waste to soil from transfer piping of 244-TX-DCRT due to leak in primary pipe and encasement	Seismic event fails primary pipe and encasement	F2	S2	D18	21X
B-3-b	XS-52-FLOW01	Liquid radioactive waste transferred to DST	Release of radioactive waste to surface from transfer piping to TK-CR-003 due to leak (Pool)	Failure of pipe from various causes	F2	S2	D12	21X
C-2-b	W058-INTEG09a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	S2	D24	21X
C-2-b	W058-INTEG11a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	S2	D18	21X
C-2-b	W058-INTEG20a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	S2	D24	21X
C-2-b	W058-INTEG22	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	S2	D18	21X
ANALYZED ACCIDENT: Evaporator Dump								
C-1-a	102AW-02-PRES 102AW-02-TEMP	DCRT tank vapor/aerosols	Release of radioactive aerosols from 102-AW due to pressurization	Evaporator dump when intrusive activity is occurring which causes pressurization	F3	S2	D01	22
HAZARDOUS CONDITIONS								
C-1-a	102AW-02-PRES08	DST tank vapor/aerosols	Release of radioactive aerosols from 102-AW due to positive pressure	Evaporator dump of hot liquid generate aerosols and pressurizes the tank	F3	S2	D01	22X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	102AW-02-PRES09	DST tank atmosphere	Release of radioactive aerosols from head space of TK-102-AW due to positive pressure (Lower energy than tank bump)	Loss of fan with airlift circulators running, generating aerosols and pressurizing the tank	F3	S2	D07	22X
C-1-a	102AW-09-TEMP	DST pump pit vapor/aerosols	Release of aerosols from 102-AW tank vapor space due to pressurization	Transfer of hot solution from facility, generate aerosols and pressurizes the tank	F3	S2	D01	22X
B-1-a	102S-04.a3	Gases within the Tank Waste	Release of radioactive aerosols trapped in gases throughout the tank S-102 waste to the atmosphere due to periodic release of toxic gases (Lower energy than tank bump)	Waste growth (bump) due to chemistry within the waste coupled with crust movement	F3	S2	D02	22X
B-1-a	244AR-03.a.08	Radioactive material contained in tank	Release of radioactive aerosols created by boiling waste to the cell atmosphere	Steam being supplied to tank heating/cooling coils	F3	S2	D01	22X
B-1-a	I-242A-2-FLW-A	Aerosols from receiver tank.	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	F3	S2	E15	22X
C-1-a	I-242A-2-FLW-B	Aerosols from receiver tank.	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	F3	S2	E15	22X
B-1-a	I-242A-3-FLW-A	Aerosols from feed tank TK-AW-102.	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	F3	S2	D01	22X
C-1-a	I-242A-3-FLW-B	Aerosols from feed tank TK-AW-102.	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	F3	S2	D01	22X
C-1-a	244AR-03.a.05	Radioactive material contained in the tank	Release of radioactive aerosols from tanks headspace due to ventilation system blockage	Ventilation and risers blocked while jetting occurring	F2	S2	D07	22X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-1-a	I-242A-2-VSC-A	Aerosols from receiver tank.	Release of aerosols in receiver tank due to tank burp from over concentration. Potential to generate conditions similar to SY101, "Tank Burp" due to hydrogen being trapped in thick solution. (Lower energy than tank bump)	Human Error - Over concentration of slurry at evaporator.	F2	S2	E03	22X
B-1-a	ITK-05	Tank inventory	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Tank burps from intrusive activity	F2	S2	E04	22X
C-1-a	I-242A-7-FLW-A	Aerosols from the head space of feed tank TK-AW-102.	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Compressor fails AND AW tank farm air supplied from 242-A	F1	S2	D05	22X
C-1-a	I-242A-7-FLW-B	Aerosols from the head space of feed tank TK-AW-102.	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Valve inadvertently closed AND AW tank farm air supplied from 242-A	F1	S2	E05	22X
C-1-a	I-242A-7-FLW-C	Aerosols from the head space of feed tank TK-AW-102.	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Filter plugged AND AW tank farm air supplied from 242-A	F1	S2	D05	22X
ANALYZED ACCIDENT: Mixing of Incompatible Material - Toxic Vapor Generation								
C-1-a	XS-26-PRES XS-26-TEMP	DST vapor/aerosols	Release of toxic vapors from 102-SY due to chemical reaction	Mistransfer of incompatible waste causes chemical reaction	F3	S2	E06	23
HAZARDOUS CONDITIONS								
C-1-a	102AW-02-PRES02	DST vapor/aerosols	Release of toxic gases from 102-AW due to chemical reaction in waste	Transfer of incompatible waste to 102-AW causes tank gas accumulation	F3	S2	E01	23X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-1-a	XS-03-PRES02 XS-21-PRES (244-S-DCRT)	DCRT tank contents	Release of toxic vapors from 244-TX DCRT due to decreased ability to keep vapors in solution (fan on)	Heating of DCRT or chemical adjustment	F3	S2	D01	23X
B-1-a	ITK-05-I	Gases or aerosols generated inside MISF from gas release	Release of radioactive and/or hazardous material from point of in-facility access due to gas release from in-facility waste during intrusive activity (non-fire, non-explosion)	Gas release from in-facility waste during intrusive activity	F2	S2	E04	23X
B-1-a	XS-03-PRES05	DCRT tank vapor/aerosols	Release of toxic vapors from DCRT due to increased concentrations in DCRT atmosphere	Transfer of steam from PFP causing evolution of toxic gases due to heating tank	F2	S2	D01	23X
C-1-a	XS-03-TEMP02	DCRT vapor/aerosols	Release of toxic vapor from DCRT due to chemical reaction	Chemical reaction in DCRT toxic vapor	F2	S2	D01	23X
C-1-a	XS-13-PRES03	Catch tank vapor/aerosols	Release of toxic vapors due to chemical reaction from 241-U-301B	Draining of incompatible chemicals to catch tank	F2	S2	D01	23X
C-1-a	XS-20-FLOW04	DCRT vapor/aerosols	Release of toxic vapors from 244-TX DCRT due to chemical reaction with incompatible material in 244-S DCRT	Mixing contents of 244-TX and 244-S due to misrouting causes chemical reaction	F2	S2	E06	23X
C-1-a	102AW-02-LEVE01	DST tank vapor/aerosols	Release of toxic gases from 102-AW tank due to accumulations of gases	Slurry growth	F1	S2	D02	23X
ANALYZED ACCIDENT: Leak from Rail Car/Tank Trailer								
B-2-b	204AR-01H	20,000 gallons of liquid radioactive waste from the rail car	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to spilling rail car contents	Rail car rupture due to collision with other or a derailment	F2	S2	D25	25
HAZARDOUS CONDITIONS								

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	204AR-01I	20,000 gallons of liquid radioactive waste from the rail car	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to leak	Rail car leak due to tanker corrosion or other degradation	F2	S2	D12	25X
B-2-b	204AR-02A	5000 gallons of liquid rad waste from trailer	Release of liquid radioactive material and toxic chemicals outside and inside the 204AR building from the trailer due to collision which causes a spill	Tank trailer damage due to running into the building and causing the tank contents to spill	F2	S2	D25	25X
C-2-b	204AR-02B	5000 gallons of liquid rad waste from trailer	Release of radioactive material and toxic chemicals from trailer due to structural degradation of trailer	Tank trailer damaged due to corrosion or other degradation	F2	S2	D12	25X
C-2-b	204AR-09B	5000 - 20,000 of liquid rad waste from rail car or trailer	Release of airborne and radiation contamination in the unloader room from trailer or rail car leak due to high level in sump pit	Catastrophic leak from a large liquid source such as a trailer or rail car	F2	S2	D12	25X
C-2-b	204AR-09C	5000 of liquid rad waste	Release of airborne and radiation contamination in the unloader room from rail car due to gross overfilling of catch tank	Gross overfilling of catch tank either from large source such as the trailers or rail cars or continual pumping of transfer water through a leaky pipe	F2	S2	D06	25X
C-2-b	204AR-09D	5000 - 20,000 of liquid rad waste from rail car or trailer	Release of radioactive liquid waste in the unloader room from the rail car or trailer due to failed rail car or trailer	Failed tank car or rail car (initially full of liquid waste) overflowing the catch tank and sump pit	F2	S2	D12	25X
ANALYZED ACCIDENT: Surface Leak Resulting in Pool								
C-2-b	W058-PRES01	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	F3	S2	D17	26
HAZARDOUS CONDITIONS								
C-2-b	102AW-01-FLOW11	Liquid radioactive waste involved in transfer	Release of liquid radioactive waste to the ground surface from 102-AW due to overflow of 102-AW tank or underground structure	Misrouting to destination other than intended causes overflow	F3	S2	E06	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	102AW-02-LEVE03	DST contents	Release of radioactive liquid from 102-AW tank due to overfilling	Failure to stop transfer causes overfilling of tank	F3	S2	E06	26X
C-2-b	102AW-02-LEVE04	DST contents	Release of radioactive liquid from 102-AW tank due to overfilling	Misrouting causes overfilling of tank	F3	S2	E06	26X
C-2-b	102AW-02-LEVE05	DST contents	Release of radioactive liquid from 102-AW to the soil column due to gross overfilling of tank (Pool)	Misrouting causes overfilling of tank	F3	S2	E06	26X
C-2-b	102AW-13-FLOW02	Liquid waste being transferred from DST	Release of radioactive liquid from transfer piping out of 102-AW due to backflow of radioactive material into flush pit and subsequent overflow (Pool)	Multiple valving errors and failure of backflow prevention devices dumps to pit as designed	F3	S2	E06	26X
C-2-b	CCF-07	Overflow of tank contents	Release of radioactive and hazardous materials from tank due to overfill	Disabled or unavailable staff to terminate transfer	F3	S2	E06	26X
C-2-b	COB-04	Transfer inventory	Release of radioactive and/or hazardous material from COB lid due to overflow of COB during transfer (Pool)	Leak into COB with floor drain plugged, leak detector failed	F3	S2	D12	26X
C-2-b	COB-08	Transfer inventory	Release of radioactive and/or hazardous material from COB due to over filling of COB (Pool)	Transfer pipe or riser rupture, backfilling lower part of COB, then filling COB via the floor drain	F3	S2	D12	26X
C-2-b	CRN-11-IC	Contents of facility	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure (Pool)	Human error: improper load assembly, rigging, crane overloaded	F3	S2	E10	26X
C-2-b	I-242A-6-FLW-B	Aerosols and liquid waste from feed tank TK-AW-102 diluted with raw water from the evaporator.	Release of diluted high level tank waste from feed tank TK-AW-102 caused by overfilling TK-AW-102 tank and annulus and aggravated by an uncontrolled evaporator dump when a raw water leak occurs in evaporator condenser room.	Rupture of raw water line in condenser / pump room	F3	S2	D12	26X
C-2-b	I-PUREX-4-FLW-B	High level tank waste diluted with flush water.	Release (ground surface) of high level tank waste diluted with flush water from the receiver tank due to overfilling from sending excess water.	Block valve on flush water inadvertently left opened or leaking.	F3	S2	D06	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	TFS-1	Waste from 102-SY	Release of radioactive or hazardous waste liquid from overflow of 244-S vault to the 244-S pump pit due to syphon effect on 102-SY tank (pump does not overflow)	Human Error: Failure to close isolation valve (or valve malfunction) following waste transfer which allows flow to continue (syphon) when pump is stopped.	F3	S2	E06	26X
C-2-b	W058-FLOW01	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	F3	S2	E06	26X
C-2-b	W058-FLOW05a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	F3	S2	E06	26X
C-2-b	W058-FLOW07	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	F3	S2	E06	26X
C-2-b	W058-FLOW11a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	F3	S2	E06	26X
C-2-b	W058-FLOW13	Portion of supernate or slurry transferred (20,000 to 1,000,000 gallons) even if the primary line failed catastrophically, it would still provide a flow path; hence, the leak via the test riser would be a side stream	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Open path for pool leak from test riser	F3	S2	E06	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	W058-INTEG05b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	S2	D22	26X
C-2-b	W058-INTEG16a	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	S2	D22	26X
C-2-b	W058-INTEG16b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	S2	D22	26X
C-2-b	W058-PRES03	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	F3	S2	D17	26X
B-2-b	XS-01-FLOW06	Saltwell liquor being transferred to DCRT	Release of liquid radioactive waste from saltwell pumping transfer piping in DCRT pump pit to surface due to overflow (Pool)	Open jumper in single shell tank pump pit leads to overflowing of pump pit	F3	S2	E06	26X
C-2-b	XS-03-TEMP04 XS-21-TEMP (244-S-DCRT)	DCRT contents	Release of liquid radioactive waste from 244 TX DCRT due to overflow	Freezing temperatures causing raw water line break-leak with leakage to tank causes overflow	F3	S2	D24	26X
C-2-b	XS-11-LEVE01	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and misrouting causes overflow	F3	S2	E06	26X
C-2-b	XS-11-LEVE02	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and open jumper causes overflow	F3	S2	E06	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	XS-11-LEVE03	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste from diversion box to surface due to overflow	Plugged drain and piping leak causes overflow	F3	S2	D12	26X
C-2-b	XS-12-FLOW05	Liquid radioactive waste transferred out of DCRT	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Backflow from catch tank causes overflow from diversion box	F3	S2	D06	26X
C-2-b	XS-20-FLOW08	Liquid radioactive waste in catch tank and DCRT	Release of radioactive waste from 244-TX DCRT to surface due to overflow	Transfer of excess waste to 244-TX DCRT due to improper valve lineup causes overflow	F3	S2	E06	26X
C-2-b	XS-20-FLOW09	Liquid radioactive waste in catch tank and DCRT	Release of radioactive waste from 244S DCRT to surface due to overflow	Transfer of waste from 244-TX DCRT due to improper valve lineup causes overflow	F3	S2	E06	26X
C-2-b	XS-35-FLOW02	Liquid radioactive waste from cross-site transfer	Release of radioactive waste to surface from 242-S Evaporator sump due to backflow to and overflow	Human error of leaving open flow path after emptying the sump and backflow and subsequent overflow	F3	S2	E06	26X
C-2-b	XS-37-FLOW01	Liquid waste involved in cross-site transfer	Release of radioactive liquid waste from catch tank to surface due to overfilling (Pool)	Leak of transfer piping with drainage to catch tank causes overflow	F3	S2	D12	26X
C-2-b	XS-41A-FLOW01	Liquid radioactive waste from cross-site transfer	Release of radioactive waste from vent station nozzle pit to surface due to overflow	Catastrophic failure of vent piping causes overflow of nozzle pit	F3	S2	D12	26X
C-2-b	XS-41A-FLOW02	Liquid radioactive waste from cross-site transfer	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Vent valve left open or leaking during transfer causes overflow	F3	S2	E06	26X
C-2-b	XS-41B-LEVE03	Liquid radioactive waste in vent station catch tank and waste being transfered	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Failure to empty catch tank, causing overflow of tank and pit due to transfer failure	F3	S2	E06	26X
C-2-b	XS-52-FLOW02	Liquid radioactive waste transfer to DST	Release of radioactive waste from TK-CR-003 to surface due to overflow (Pool)	Mis-valving or valve failure during cross-site transfer causes overflow	F3	S2	E06	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	102AW-01-FLOW10	Liquid radioactive waste involved in transfer	Release of liquid radioactive waste from 102-AW due to overflow	Misrouting of waste from reverse flow caused by the combination of an incorrectly wired pump and a full transfer pipe	F2	S2	E06	26X
C-2-b	102AW-01-TEMP01	Liquid radioactive waste being transferred to DST	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to corrosion caused by transferring high temperature waste	F2	S2	D01	26X
C-2-b	102AW-01-TEMP01A	Liquid radioactive waste being transferred to DST	Release of liquid waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	F2	S2	D01	26X
C-2-b	102AW-01-TEMP02	Liquid radioactive waste being transferred to DST	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	F2	S2	D01	26X
C-2-b	102S-01.a1	Radioactive/hazardous material contained in pumpable liquids from various S Farm Tanks.	Radioactive/hazardous liquid released to soil suface from tank diversion box/access pit to the ground surface due to misrouting a transfer.	Human Error (Jumper/Blank Installation) + Mistransfer to Tank S-102 (450-600 Kgal) overfills tank	F2	S2	E06	26X
C-2-b	102S-01.b2	Radioactive/hazardous material contained in pumpable liquids from S-102.	Radioactive liquid released to soil surface from S-102 "Pump Pit" due to leak in jumpers connecting tank Transfer Lines SL-140, SN-242 during saltwell pumping.	Jumper Failure + Drain Plugged	F2	S2	D12	26X
C-2-b	204AR-09A	Up to 20,000 of liquid rad waste from rail car	Release of airborne and waterborne contamination from the sump pit due to ruptured piping during transfer.	Rupture of transfer piping section above the sump pit	F2	S2	D12	26X
C-2-b	CRN-12-IC	Contents of facility	Release of radioactive and/or toxic materials from facility due to containment top collapse by boom failure (Pool)	Mechanical failure: corrosion, faulty materials	F2	S2	D10	26X
C-3-b	EE-11	Contents of affected tank	Release of radioactive and hazardous materials from tank due to overfilling	Water line breaks and overfills tank	F2	S2	D12	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	I-242S-2-FLW-E	High level waste from tank farms.	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the pump room from 102-SY.	Human Error - Incorrect valve line up	F2	S2	E06	26X
C-2-b	I-242S-4-FLW-C	High level waste from tank farms.	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the condenser room.	Human Error - Incorrect valve line up	F2	S2	E06	26X
B-2-b	OGT-EXT3-01B	DST & SST tank inventory	Release of radioactive or hazardous material from the primary pipe due to leak caused by truck crash into piping system	Human error, line struck by truck	F2	S2	E25	26X
C-2-b	OGT-FLOW1-02	DST & SST Tank inventory	Release of radioactive or hazardous material from pit overflow due to primary pipe leak caused by over-rated pump	Incorrect pump installed creates excessive flow and pressure on OGT system eroding EPDM pipe AND Leak to secondary pipe AND Drain in pit plugged	F2	S2	E13	26X
C-2-b	OGT-FLOW1-06	DST & SST tank inventory	Release of radioactive or hazardous material from the DCRT due to overflow	Exceed volume available in DCRT/insufficient volume available Condition goes unnoticed until overflow occurs	F2	S2	E06	26X
B-2-b	OGT-FLOW2-01B	DST & SST Tank Inventory	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Incorrect pump installed creates excessive flow and isolation valve closed on secondary pipe Erosion of EPDM AND Pressurization of secondary pipe causing leaks from flanges gasket within concrete shield	F2	S2	E13	26X
C-2-b	W058-FLOW03	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-FLOW05b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	F2	S2	D12	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	W058-FLOW05c	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-FLOW09	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-FLOW11b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-FLOW11c	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-INTEG01c	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-INTEG01d	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-INTEG03b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	F2	S2	D05	26X
C-2-b	W058-INTEG05a	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F2	S2	D22	26X
C-2-b	W058-INTEG07b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	S2	D12	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	W058-INTEG13c	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	S2	D06	26X
C-2-b	W058-INTEG13d	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	S2	D12	26X
C-2-b	W058-INTEG14b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	F2	S2	D05	26X
C-2-b	W058-INTEG18b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	S2	D12	26X
B-1-a	XS-01-FLOW05	Liquid radioactive waste being transferred to DCRT	Release of radioactive contaminated liquid from transfer piping to 244-TX-DCRT via the raw water system due to reverse flow of liquid waste (Pool)	Mis-valving causes mixing of waste into raw water system that causes leak in the flush pit cover block	F2	S2	E06	26X
B-2-b	114SX-02.b	Radioactive material contained in pumpable liquid	Radioactive liquid released from Tank Pump Pit to the ground surface due to inadvertent pumping activity (Pool)	Human Error (Not Normal Activity)	F1	S2	E06	26X
C-1-a	244AR-02.a.07	Radioactive material contained in vessel	Release of radioactive aerosols from vessel headspace to building atmosphere with eventual release outside facility due to overfilling of sump causing tank failure	Rain or snow water intrusion	F1	S2	D01	26X
C-2-b	I-242S-2-FLW-A	Contaminated fire water and other liquid waste in 102-SY tank.	Release of tank waste diluted with contaminated fire water to the soil due to flooding the pump room from a fire main break and pumping the water to 102-SY tank which overfills the tank and floods pit through risers.	Break in fire main.	F1	S2	D12	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	I-242S-4-FLW-D	Contaminated fire water and other waste in 102-SY tank.	Release of tank waste diluted with contaminated water to the soil due to flooding the condenser room which is pumped to 102-SY tank and overfills the tank and floods pit through risers.	Break in fire main	F1	S2	D12	26X
C-2-b	I-UPLANT-1-LEK-B	Contaminated rain water from U Plant stack	Release of low level waste to the ground at the rupture of the line.	Inadvertent excavation of line.	F1	S2	D22	26X
B-2-b	OGT-FLOW1-03B	DST & SST tank inventory	Release of radioactive or hazardous material from the primary pipe due to misdirected flow of waste through flush line	JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to water truck, drum, or onto ground	F1	S2	E06	26X
B-2-b	OGT-FLOW1-04	DST & SST Tank Inventory	Release of radioactive or hazardous material from the primary pipe due to valve failure resulting in misdirected flow of waste through flush line to flush water supply truck	JR-1 leak (bleed-by) AND 2 check valves fail AND Flush disconnect fails and pump started causing reverse flow to flush water truck tank	F1	S2	D06	26X
B-2-b	OGT-FLOW2-03B	DST & SST tank inventory	Release of radioactive or hazardous material from the primary pipe due leak caused by incorrect pump installed	Installation of incorrect pump AND Failure of inner pipe AND Isolation valves closed on secondary pipe drains causing leak from failed welds on flange within the concrete shield	F1	S2	E13	26X
C-2-b	OGT-PRES1-01	DST & SST tank inventory	Release of radioactive or hazardous material from overflow of pit due to leak caused by high pressure	Heat up of hydro test by heat tape or high ambient temperature High pressure results from captive fluid heat up AND Inner pipe damaged, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	F1	S2	D05	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
C-2-b	OGT-REAC1-01	DST & SST tank inventory	Release of radioactive or hazardous material from overflow of pit due to primary pipe leak cause by chemical reaction	Pumping from multiple tanks to single OGT Potential for adverse chemical reactions in pipeline damaging inner pipe, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	F1	S2	D01	26X
C-2-b	OGT-TEMP1-03	DST & SST tank inventory	Release of radioactive or hazardous material from overflow of pit due to leak caused by high temperature	High temperature flush water fails inner pipe causing leak to secondary pipe and drain to pit AND Insufficient drainage in pit	F1	S2	E01	26X
C-2-b	W058-INTEG09b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	S2	D24	26X
C-2-b	W058-INTEG11b	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	S2	D18	26X
C-2-b	W058-INTEG20b	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	S2	D24	26X
C-2-b	W058-INTEG24	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	S2	D23	26X
C-2-b	W058-INTEG26	Amount of slurry transferred (20,000 to 1,000,000 gallons)	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	Seismic event plus mitigative features failure	F1	S2	D18	26X
C-2-b	W058-INTEG28	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	S2	D23	26X
C-2-b	W058-INTEG30	Amount of supernate transferred (20,000 to 1,000,000 gallons)	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Seismic event	F1	S2	D18	26X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
ANALYZED ACCIDENT: Unplanned Excavation/Drilling in Pond/Crib/Ditch								
C-2-c	CDP-10	Portion of radioactive material present in crib, ditch, or pond	Release of radioactive contamination to soil surface from excavation or drilling in cribs, ditches, or ponds that disturbs radioactive material	Excavation or drilling	F3	S2	D22	28
HAZARDOUS CONDITIONS								
C-1-a	EE-17	Materials in inactive equipment	Radioactive and hazardous material release from inactive equipment due to excavation error	Excavation into abandoned or inactive equipment	F3	S2	D22	28X
ANALYZED ACCIDENT: Subsurface Leak Remaining Subsurface								
B-3-b	102S-01.b3	Radioactive/hazardous material contained in pumpable liquids from S-102.	Radioactive liquid released to the soil subsurface from leaks in transfer Lines SL-140, SN-242. (Plume)	Line leak during saltwell pumping (corrosion)	F3	S2	D12	29
HAZARDOUS CONDITIONS								
B-3-b	XS-01-FLOW07	Saltwell liquor being transferred to DCRT	Release of liquid radioactive waste to the soil from transfer piping from SST to DCRT due to leakage (Plume)	Pipe failure from various causes	F3	S2	D12	29X
C-3-b	XS-37-FLOW02	Liquid waste involved in cross-site transfer	Release of radioactive liquid waste to soil from transfer piping due to leak of liquid waste from concrete encasement (Subsurface plume)	Leak of transfer piping with encasement leak or blocked drain to catch tank (liquid oozes out concrete encasement)	F3	S2	D12	29X
B-3-b	XS-48-FLOW	Liquid waste transferred from B-Plant to diversion box	Release of liquid waste to soil from transfer piping between B-Plant and 241-ER-152 diversion box due to leak (Plume)	Piping failure from various causes	F3	S2	D12	29X
C-3-b	102AW-04-STRU04	Radioactive waste transfer through DST central pump pit	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to equipment drop	F2	S2	D10	29X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-3-b	XS-02-FLOW04	PFP waste being transferred to DCRT	Release of liquid radioactive waste to soil from transfer pipe (non-pool) subsurface plume	Failure to adjust waste pH prior to transfer causes leak	F2	S2	E01	29X
C-3-b	102AW-04-STRU05	Radioactive waste transfer through DST central pump pit	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to seismic event	F1	S2	D18	29X
C-3-b	CRN-21	Tank inventory	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	Human error: improper load assembly, rigging, positioning error	F3	S0	E10	29X
C-3-b	CRN-21-IA	Contents of facility	Release of radioactive or toxic materials from underground facility bottom due to loss of vertical load control, dropping crane load into facility (subsurface leak)	Human error: improper load assembly, rigging, positioning error	F3	S0	E10	29X
C-3-b	XS-35-FLOW01	Contents of evaporator sump	Release of radioactive liquid waste to soil from 242-S Evaporator due to leak of un-encased direct buried piping (Plume)	Corrosion or other causes	F3	S0	D12	29X
C-3-b	CRN-22	Tank inventory	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	Mechanical failure: corrosion, faulty materials, hydraulics	F2	S0	D10	29X
B-2-b	CRN-22-IA	Contents of facility	Release of radioactive or toxic materials from facility bottom due to loss of vertical load control, dropping crane load into facility	Mechanical failure: corrosion, faulty materials, hydraulics	F2	S0	D10	29X
C-3-b	XS-05-FLOW02	Liquid radioactive waste in DCRT	Release of liquid radioactive waste from DCRT due to flow path to soil	Exceeding structural limit on tank due to replacement of exhaust fan with higher capacity fan and blockage of ventilation inlet concurrent with vault leak	F2	S0	E13	29X
C-3-b	XS-03-TEMP09	Liquid radioactive waste in DCRT	Release of liquid radioactive waste from DCRT due to flow path to soil	Exceeding structural limits on tank due to high temperature caused by transfer of steam from PFP as well as vault leak	F1	S0	D01	29X
ANALYZED ACCIDENT: Sodium Fire								

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	2727W-06	Building inventory	Release of hazardous materials from 2727W due to sodium-water reactions	High wind or tornado destroys building with rain/snow	F2	S2	D20	30
HAZARDOUS CONDITIONS								
A-1-a	2727W-05	Building inventory	Release of hazardous material from 2727W due to sodium fire	Nitrogen tank overpressurizes sodium tank, ignites sodium	F3	S2	B01	30X
A-1-a	2727W-03	Building inventory	Release of hazardous material from 2727W due to sodium fire	Lightning	F2	S2	B21	30X
A-1-a	2727W-02	Building inventory	Release of hazardous material from 2727W due to sodium fire	Vehicle crashes into building and ignites sodium	F1	S2	B25	30X
A-1-a	2727W-04	Building inventory	Release of hazardous material from 2727W due to sodium fire	Overhead power line falls through building	F1	S2	B09	30X
ANALYZED ACCIDENT: Above Ground Structure Failure								
B-1-a	ITK-FR-08	DST & SST tank liquid held in flex receiver	Release of radioactive aerosols/vapors from flex receiver due to structural failure	High winds tear flex receiver bag	F3	S2	D20	31
HAZARDOUS CONDITIONS								
B-1-a	CRN-11-IB	Contents of equipment	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	F3	S2	E10	31X
B-1-a	CRN-18	Contaminates on above ground equipment	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	F3	S2	D10	31X
B-1-a	CRN-18-I	Material in aboveground facility equipment	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	F3	S2	E10	31X
C-2-b	CRN-25-IB	Material in aboveground facility or equipment	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Human error: improper load assembly, rigging, positioning error	F3	S2	E26	31X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	CRN-12-IB	Contents of equipment	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	F2	S2	D10	31X
B-1-a	CRN-13-IB	Contents of equipment	Release of radioactive and/or toxic materials from above ground facility due to equipment damage by boom failure	High wind or seismic event	F2	S2	D05	31X
B-1-a	CRN-19-I	Material in aboveground facility equipment	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials	F2	S2	D10	31X
B-1-a	CRN-20-I	Material in aboveground facility equipment	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	High wind or seismic event	F2	S2	D05	31X
B-1-a	CRN-23-IB	Contents of facility	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility	High wind or seismic event	F2	S2	D05	31X
C-2-b	CRN-26-IB	Material in aboveground facility or equipment	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	F2	S2	D26	31X
C-2-b	CRN-27-IB	Material in aboveground facility or equipment	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	F2	S2	D10	31X
C-1-a	ITK-FR-03	DST & SST tank inventory	Release of radioactive aerosols from tank and/or receiver due to equipment jam in riser	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing breach of tank & receiver containment	F1	S2	E05	31X
C-1-a	ITK-FR-22	DST & SST tank liquid held in flex receiver	Release of radioactive aerosols from flex receiver due to tank gas release	Tank gas release pressurizes bag and causes bag to rupture	F1	S2	D01	31X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
A-1-a	NP-05	Head space inventories, ventilation system inventories, surface contaminates, 209 E inventory, tanker spill at 204-AR	Radioactive and hazardous material release from tanks, nearby ground surfaces, and ventilation systems due to above grade disturbances	High winds	F1	S2	D20	31X
ANALYZED ACCIDENT: Steam Intrusion from Interfacing Systems								
B-1-a	I-242A-6-CMP-A	Aerosols and particulates entrained in steam from feed tank TK-AW-102.	Release (steam) of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Human error - Steam block valve inadvertently left opened.	F3	S3	E01	32
HAZARDOUS CONDITIONS								
B-1-a	I-242A-2-CMP-B	Aerosols and particulates entrained in steam from receiver tank.	Release to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Steam block valves inadvertently opened or left open	F2	S3	E01	32X
B-1-a	I-222S-1-LVL-A	Aerosols and particulates from 244-S entrained in the steam	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Failing to shut off steam after TK-102 is empty	F3	S2	E01	32X
B-1-a	I-222S-2-PRS-A	Aerosols and particulates from 244-S entrained in the steam	Release (steam) of aerosols and particulates to atmosphere through ventilation due to over pressurization of 244-S DCRT caused by sending just steam to tank farm.	Steam reducer valve fails open.	F3	S2	D01	32X
B-1-a	I-PUREX-1-LVL-A	Aerosols from tank 105AW.	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	F3	S2	E01	32X
B-1-a	I-PUREX-3-LVL-A	Aerosols from tank 105AW.	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	F3	S2	E01	32X

Table 3.3-2. Analyzed Accidents and the Represented Hazardous Conditions.

BIN	ID	Material at Risk	Hazardous Condition	Cause	Freq NC	Safety Cons NC	Cause Grp	Rep Acc
B-1-a	I-TPLANT-2-CMP-A	Aerosols and particulates from 244-S entrained in the steam	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Steam block valve inadvertently opened or failure to close valve when tank 15-1 is low	F3	S2	E01	32X
B-1-a	XS-02-FLOW02	DCRT filter inventory	Release of aerosols and particulate from DCRT ventilation filter due to transfer of steam from PFP steam jet into DCRT headspace	Human error (failure to shut off steam jet at completion of transfer) which causes DCRT ventilation filter failure	F3	S2	E01	32X
B-1-a	I-PFP-2-TMP-B	Steam release of aerosols and entrained particulates from 244-TX.	Release (steam) of aerosols and entrained particulate from 244-TX ventilation system due to saturating HEPAs with steam due to failure of steam reducer which sends higher pressure steam to steam jet, gassing it out and sends steam to 244-TX.	Failure of steam reducer	F2	S2	D01	32X
B-1-a	I-PUREX-2-PRS-A	Aerosols and particulates entrained in steam from receiver tank.	Release (steam) of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	F2	S2	D01	32X
B-1-a	I-PUREX-4-PRS-A	Aerosols and particulates entrained in steam from receiver tank.	Release of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	F2	S2	D01	32X

Tables 3.4-1
and 3.4-2

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-01-FLOW 102AW-02-PRES	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by chemical reaction of incompatible wastes	Misrouting to destination other than intended creates chemical incompatibility	F0	E3
102AW-01-FLOW 102AW-04-PRES	Release of radioactive aerosol from transfer pipe which runs from DCRT to 102-AW tank due to spray leak into open underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	F3	E2
102AW-01-FLOW01	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW tank due to spray leak into open underground structure	Piping leak due to corrosion caused by transferring high temperature waste	F2	E2
102AW-01-TEMP	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW due to spray leak of liquid waste from transfer pipe leak	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	F1	E3
102AW-02-PRES01	Release of radioactive aerosols from 102-AW tank due to fire-explosion in waste tank (Dome Collapse)	Flammable concentration of gases in tank vapor space with spark source	F2	E2
102AW-02-PRES03	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Blocked ventilation inlet causes excessive vacuum leading to dome collapse	F0	E3
102AW-02-PRES04	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Condensation of vapors causes excessive vacuum leading to dome collapse	F0	E3
102AW-02-PRES05	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Sub-cooling of vapor during equipment flushing causes excessive vacuum leading to dome collapse	F0	E3
102AW-02-PRES06	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Ventilation imbalance causes excessive vacuum lead ion to dome collapse	F0	E3
102AW-02-PRES07	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Wrong size portable ventilator chosen for support work causes excessive vacuum leading to dome collapse	F0	E3
102AW-03-LEVE03	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by floating the primary tank within the annulus	Misrouting of liquid waste to the annulus causes floating of primary tank and subsequent dome collapse	F1	E3
102AW-03-TEMP01	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by an explosion/fire in the annulus	Fire/ Explosion of flammable liquid spilled into annulus via a riser	F2	E3
102AW-04-STRU01A	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Equipment drop during crane work causes excessive dome loading	F3	E3
102AW-04-STRU02	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Violation of limits on dome loading	F3	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-09-COMP01	Release of combustion product aerosols from 102-AW tank due to fire in separable organic layer in waste tank causing dome collapse	Organic reaching flash point or being aerosolized plus ignition source	F2	E3
102AW-09-COMP02	Release of radioactive waste aerosols from 102-AW tank due to fire in fuel spilled in waste tank causing dome collapse	Spill of fuel from external source plus fuel reaching flash point or being aerosolized plus ignition source	F2	E3
102AW-13-FLOW01	Release of radioactive waste aerosols due to spray leak of waste from flush pit	Backflow of waste to flush pit with valve or pipe leak and cover block off	F1	E3
102S-03.b4	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank causing dome collapse	Vehicle drives into open riser puncturing gas tank + Ignition + flammable organic vapors in tank	F3	E3
102S-04.c	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	F1	E3
102S-04.d1	Release of radioactive aerosols contained in tank S-102 vapor space to the atmosphere due to low pressure causing dome collapse	Misoperation of exhauster during saltwell pumping	F0	E3
102S-04.e3	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to generation of excessive heat leading to dome collapse	Addition of incompatible waste/chemical (misroute)	F0	E3
102S-05.a1a	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Excess Gravel overburden	F3	E3
102S-05.a1aa	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Large Vehicle traffic over tank	F3	E3
102S-05.a2	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Seismic Event (Common Mode Failure)	F1	E3
102S-05.a3	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Past Thermocycling of Tank	F1	E3
102S-05.a3a	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Long Term Aging	F1	E3
106C-01A	Release of radioactive and/or hazardous material from C-106 tank, structural damage, and dome collapse due to tank low pressure	Air inlet plugged due to icing, dust	F0	E3
106C-01B	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Inlet air valve closed	F0	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
106C-01C	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Exhauster damper positioned incorrectly	F0	E3
106C-01D	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Wrong sized portable exhauster	F0	E3
106C-01E	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Subcooling of tank vapor space due to water addition of flushing	F2	E3
106C-01I	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse caused by tank high pressure	Fire in waste tank	F2	E3
106C-01J	Release of radioactive and/or hazardous material from C-106 tank due to high pressure in tank and possible dome collapse	Explosion/ fire in waste tank	F2	E3
106C-01Ma	Release of radioactive and/or hazardous material from C-106 tank due to flammable gas explosion/fire in tank caused by high temperature in the tank (Dome Collapse)	Chemical reaction in tank	F2	E2
106C-01X	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Overweight vehicles over top of tank	F3	E3
106C-01Y	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Flooding over top of tank	F2	E3
106C-02A	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	High waste temperature	F2	E3
106C-02B	Release of radioactive and/or hazardous material from C-106 tank due to ignition of high flammable gas content in tank and possible dome collapse	Ventilation system failure	F2	E3
106C-02C	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	Tank burp, release of trapped gas	F2	E3
106C-04A	Release of radioactive and/or hazardous material from C-106 tank due to tank damage caused by flammable gas explosion/fire because of high flammable gas content in the tank (Dome Collapse)	High flammable gas content due to chemical reaction in sludge layer	F2	E2

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
106C-04B	Release of radioactive and/or hazardous material from C-106 tank due to explosion/fire caused by ignition of flammable gas released from radiolysis in tank sludge	Radiolysis in sludge layer allows release of trapped gas to vapor space	F2	E3
106C-13A	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse, tank damage caused by high temperature	Fire in C-105 propagates into tank C-106	F2	E3
114SX-04.a.2	Radioactive aerosols released from failed tank dome due to vacuum produced by valving error.	Human Error: Valve out Flammable Watch list (SX-109) Butterfly valve	F0	E3
114SX-04.a.3	Radioactive aerosols in tank released from Tank SX-114 to atmosphere due high temperatures causing dome concrete strength loss	No Ventilation Flow High Ambient Temperature Conditions Resulting in tank degradation	F1	E3
114SX-04.b.1.a.2	Release of radioactive material from tank SX-114 to atmosphere due to high temperature in the dome leading to dome collapse (long term closure of butterfly valve)	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum. Resulting in tank degradation	F1	E3
114SX-04.b.1.b.2a	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to bad welds	F1	E3
114SX-04.b.1.b.2b	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to Seismic activity coupled with failure to respond Resulting in tank degradation	F1	E3
114SX-04.b.1.c.2	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to dome collapse	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	F0	E3
114SX-04.b.1.d.2	Release of radioactive aerosols from Tank SX-114 waste to atmosphere due to dome collapse	Filter plugging results in lack of heat removal with high temperatures degrading dome strength	F1	E3
114SX-04.b.3b	Radioactive aerosols released from head space of Tank SX-114 to atmosphere through exhaust HEPA filter due to flammable gas ignition in the headspace (Dome Collapse)	Flammable gas explosion/fire in SX-114. {Note: SX-114 is NOT currently identified as a Flammable Gas Watch list tank} Requires spark to be present	F1	E2

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
114SX-05.b.1	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to flammable gas ignition resulting in dome collapse	Radiolysis creating bubbles of gases in waste	F2	E3
114SX-05.b.3	Radioactive aerosols released from Tank SX-114 waste to atmosphere when dome collapses due to sudden vacuum in tank	Quenching (adding cold liquid to hot tank contents) creating a vacuum	F0	E3
114SX-05.c.2b	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to dome collapse	Chemical reaction caused by addition of chemical/solution. Resulting in tank degradation	F1	E3
114SX-06.a.1a	Radioactive aerosols released from Tank SX-114 waste to atmosphere due to dome collapse	Gravel overburden Large Vehicle	F3	E3
114SX-06.a.1b	Release of radioactive aerosols from Tank SX-114 waste to atmosphere as a result of a dome collapse	Deflagration of H2 (Implies gas generation AND A Spark)	F1	E3
114SX-06.a.3	Release of radioactive aerosols from Tank SX-114 waste to the atmosphere due to dome collapse as a result of loss of strength due to aging	Long term aging Resulting in tank degradation	F1	E3
244AR-02.a.14	Release of radioactive aerosols from waste contained in tanks (4) and building due to earthquake	Earthquake collapses building and four tanks	F1	E3
CCF-17	Release of radioactive and hazardous materials from tank due to dome collapse	Corrosion of rebar in concrete SST domes	F1	E3
CCF-18	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank propagates to connecting tank and both tanks collapse during cooldown from negative tank pressure	F0	E3
CCF-19	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank causes pressure transient that leads to GRE in connecting tank with subsequent fire and tank collapses from negative tank pressure	F0	E3
COB-01	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid removed	F3	E2
CRN-03	Release of radioactive and/or toxic materials from tank due to dome collapse	Human error results in excessive weight on dome	F3	E3
CRN-04	Release of radioactive and/or toxic materials from tank due to dome collapse	Crane or rigging failures drop load resulting in large impact to dome	F3	E3
CRN-11	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Human error: improper load assembly, rigging, crane overloaded	F3	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-12	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Mechanical failure: corrosion, faulty materials	F3	E3
CRN-13-a	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	High wind	F3	E3
CRN-13-b	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	Seismic event	F1	E3
EE-01	Release of radioactive and toxic materials from tanks due to external force and fire	Aircraft crash	F1	E3
EE-04-a	Release of radioactive and hazardous materials from SST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	F2	E3
EE-04-b	Release of radioactive and hazardous materials from DST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	F2	E3
EE-05-a	Release of radioactive or hazardous materials from SST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	E3
EE-05-b	Release of radioactive or hazardous materials from DST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	F3	E3
EE-16	Release of radioactive and hazardous material from transfer line spray leak due to excavation error	Excavation into waste transfer line during a transfer	F3	E2
I-222S-1-CMP-E	Release of radioactive aerosols to the atmosphere from 244-S or receiver tank due to over pressurization of tank caused by organic fire.	Human Error - Upset of 222-S Lab operations	F3	E3
I-242A-1-FLW-A	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Valves fail to regulate (Go closed) which fails pump and creates ignition source AND sufficient hydrogen accumulation for fire/ explosion.	F2	E3
I-242A-1-FLW-B	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Feed pump fails which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	E3
I-242A-1-FLW-C	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Plugged line which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-242A-1-FLW-D	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Pump plugged which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	E3
I-242A-1-FLW-E	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from pump cavitation.	Empty feed tank which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	F2	E3
I-242A-2-CMP-B	Release to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Steam block valves inadvertently opened or left open	F2	E3
I-242A-4-TMP-A	Release of radioactive material from TK-AW-102 caused by ignition of organics in TK-C-100 which pressurizes the drain line and propagates the fire down the line to feed tank TK-AW-102.	Faulty control of vacuum to CA-1 vessel causing pot to boil with organic layer available.	F0	E3
I-242A-6-CMP-A	Release (steam) of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Human error - Steam block valve inadvertently left opened.	F3	E3
I-BPLANT-1-CMP-E	Release of tank waste due to fire in receiver tank from transferring organics from B Plant.	Human error - Tank containing organics in B Plant rupture and spills organics to the drains which eventually end up in tank 24-1 and an inadvertent transfer to tank farms	F1	E3
I-PFP-1-CMP-E	Release of high level waste from receiver tank due to fire from organics transferred from PFP.	Excess organic material added to waste results in fire	F2	E3
ITK-08	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Exothermic reaction of incompatible materials in tank	F3	E2
ITK-09	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Failure to bond components or incorrect bonding	F3	E2
ITK-10-a	Release of radioactive material from in-tank fire or explosion due to intrusive activitiy (Dome Collapse)	Spark from equipment or tools	F3	E2
ITK-10-b	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Spark from equipment or tools	F3	E2
ITK-11	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Lightning, range fire, or seismic event ignites tank vapors	F2	E2

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
ITK-FR-04	Release of radioactive aerosols from tank due to tank collapse	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing loss of structural integrity leading to tank collapse	F1	E3
ITK-FR-19	Release of radioactive aerosols from tank due to dome collapse	Hydraulic jacks on assembly stand are operated while assembly is bolted to flange tearing out riser and destroying tank integrity leading to dome collapse	F1	E3
NP-07	Radioactive and hazardous material releases from tanks and ventilation systems due to seismic event	Earthquake collapses domes	F1	E3
NP-08	Radioactive and hazardous material releases from transfer pipes due to seismic event (Possible Spray Leak)	Earthquake shears pipes and encasements during transfer	F2	E2
NP-11	Radioactive and hazardous material releases from tank farms due to lava flow	Eruption of molten lava from fissures	F0	E3
NP-13	Radioactive and hazardous material releases from tanks due to excessive weight on dome	Accumulations of heavy snow followed by heavy rain	F2	E3
OGT-EXT3-01A	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by truck crash into piping system	Human error, line struck by truck	F3	E3
OGT-FLOW1-03A	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by misdirected flow	Spray leak caused by: JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to external flush fixture and release to the environment	F1	E3
OGT-FLOW2-02	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused by over-rated pump	Installation of incorrect pump and failure of inner pipe AND Failure of weld on flange of outer pipe AND Isolation valves closed on secondary pipe drains AND No concrete shield in place	F2	E2
OGT-NP3-01	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused to earthquake	Failure of line and concrete shielding during earthquake	F1	E2
OGT-NP3-02	Release of radioactive or hazardous aerosols from the primary pipe due to leak caused by high wind	Pipe is blown off supports AND No concrete shielding in place	F1	E2
W058-FLOW15	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	F2	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
W058-FLOW16	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit	F2	E3
W058-FLOW17a	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	F2	E3
W058-FLOW17b	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	F2	E3
W058-FLOW17c	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	F2	E3
W058-FLOW18	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	F2	E3
W058-FLOW19	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit plus mitigative features failure	F2	E3
W058-FLOW20a	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	F2	E3
W058-FLOW20b	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	F2	E3
W058-FLOW20c	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	F2	E3
W058-INTEG32	Release of radioactive supernate or slurry aerosols to the atmosphere due to a spray leak from test risers located near SY-A and SY-B valve pits	Failure of primary piping and path for spray leak from test riser plus mitigative features failure	F2	E3
W058-INTEG34	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	E3
W058-INTEG35	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Seismic event	F1	E3

Table 3.4-1. Hazardous Conditions With Potential Significant Offsite Consequences (S3)

ID	Hazardous Condition	Cause	Freq NC	Env Cons
W058-INTEG36	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	E3
W058-INTEG37	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Seismic event	F1	E3
XS-01-FLOW02	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse caused by flammable gas burn	Loss of pump prime results in overheated pump that ignites flammable gas	F2	E3
XS-01-FLOW03	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse and DCRT pressurization caused by flammable gas explosion/fire propagating from DCRT to single shell tank	Pipeline connecting single shell tank and DCRT fills with flammable gas; loss of ventilation flow in DCRT so that a flammable gas atmosphere is ignited by the ventilation outlet heater	F2	E3
XS-06-FLOW02	Release of liquid radioactive waste from DCRT transfer piping to 102-SY due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	F2	E3
XS-06-FLOW03	Release of liquid radioactive waste from transfer piping from PFP to DCRT due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	F2	E3
XS-13-PRES02	Release of radioactive aerosols from 241-U-301B catch tank due to fire-explosion of flammable gas	Buildup of flammable gas in catch tank and spark source	F2	E2
XS-26-PRES02	Release of radioactive aerosols from 102-SY tank due to flammable gas fire-explosion (Dome Collapse)	Accumulation of flammable gases in vapor space and spark source	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-01-FLOW02	Release of radioactive waste to soil from transfer piping which runs to 102-AW due to leak from primary pipe and encasement	Excavation accident fails primary pipe and encasement	F3	E2
102AW-01-FLOW03	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Corrosion of inner and outer pipe cause failure of primary pipe and encasement	F3	E2
102AW-01-FLOW04	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	High structural loading from traffic or cranes fails primary pipe and encasement	F3	E2
102AW-01-FLOW05	Release of radioactive waste to soil from transfer piping to 102-AW due to leak from primary pipe and encasement	Seismic event fails primary pipe and encasement	F2	E2
102AW-01-FLOW06	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	F3	E2
102AW-01-FLOW07	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Water hammer cause failure of primary pipe and encasement	F3	E2
102AW-01-FLOW10	Release of liquid radioactive waste from 102-AW due to overflow	Misrouting of waste from reverse flow caused by the combination of an incorrectly wired pump and a full transfer pipe	F2	E2
102AW-01-FLOW11	Release of liquid radioactive waste to the ground surface from 102-AW due to overflow of 102-AW tank or underground structure	Misrouting to destination other than intended causes overflow	F3	E2
102AW-01-TEMP01	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to corrosion caused by transferring high temperature waste	F2	E2
102AW-01-TEMP01A	Release of liquid waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	F2	E2
102AW-01-TEMP02	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	F2	E2
102AW-02-LEVE01	Release of toxic gases from 102-AW tank due to accumulations of gases	Slurry growth	F1	E1
102AW-02-LEVE03	Release of radioactive liquid from 102-AW tank due to overfilling	Failure to stop transfer causes overfilling of tank	F3	E2
102AW-02-LEVE04	Release of radioactive liquid from 102-AW tank due to overfilling	Misrouting causes overfilling of tank	F3	E2
102AW-02-LEVE05	Release of radioactive liquid from 102-AW to the soil column due to gross overfilling of tank (Pool)	Misrouting causes overfilling of tank	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-02-PRES 102AW-02-TEMP	Release of radioactive aerosols from 102-AW due to pressurization	Evaporator dump when intrusive activity is occurring which causes pressurization	F3	E2
102AW-02-PRES02	Release of toxic gases from 102-AW due to chemical reaction in waste	Transfer of incompatible waste to 102-AW causes tank gas accumulation	F3	E2
102AW-02-PRES08	Release of radioactive aerosols from 102-AW due to positive pressure	Evaporator dump of hot liquid generate aerosols and pressurizes the tank	F3	E1
102AW-02-PRES09	Release of radioactive aerosols from head space of TK-102-AW due to positive pressure (Lower energy than tank bump)	Loss of fan with airlift circulators running, generating aerosols and pressurizing the tank	F3	E1
102AW-02-TEMP 102AW-08-TEMP	Release of radioactive aerosols from TK-102-AW due to positive pressure	Chemical reaction heating up and-or agitating tank causes positive pressure in tank	F2	E1
102AW-02-TEMP01	Release of radioactive aerosols from 102-AW tank due to boiling waste	High heat waste causing boiling	F2	E2
102AW-02-TEMP02	Release of radioactive aerosols from tank 102-AW due to tank bump	High heat waste combined with loss of ventilation contributes to tank bump	F2	E2
102AW-03-LEVE01	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste leak into annulus and spark source	F2	E2
102AW-03-LEVE02	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste mis-transfer into annulus and spark source	F2	E2
102AW-03-TEMP02	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus damaging primary tank	Flammable concentration of gases in annulus vapor space due to spill of fuel into annulus and spark source	F2	E2
102AW-04-STRU03	Release of radioactive particulate from 102-AW central pump pit due to re-suspension	Equipment drop during crane work	F2	E1
102AW-04-STRU04	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to equipment drop	F2	E2
102AW-04-STRU05	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to seismic event	F1	E2
102AW-04-TEMP	Release of radioactive particulate from 102-AW central pump pit due to fire	Pump motor electrical fire	F1	E1

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-08-COMP02	Release of fission product gases and aerosols from 102-AW due to criticality	Misrouting of waste creates critical mass	F1	E2
102AW-08-COMP02A	Release of fission product gases and aerosols from 102-AW due to criticality	Human error - addition of excess fissile material to TK-102AW creates critical mass	F1	E2
102AW-08-COMP03	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (horizontally) creates critical mass	F1	E2
102AW-08-COMP04	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (vertically) due to addition of "rich" layer --K basin sludge creates critical mass	F1	E2
102AW-08-COMP05	Release of fission product gases and aerosols from 102-AW due to criticality	Over concentration of waste creates critical mass	F0	E2
102AW-09-TEMP	Release of aerosols from 102-AW tank vapor space due to pressurization	Transfer of hot solution from facility, generate aerosols and pressurizes the tank	F3	E1
102AW-09-TEMP01	Release of radioactive aerosols from tank 102-AW atmosphere due to tank bump	High heat waste plus loss of cooling and-or mixing pump (not yet installed) operation	F2	E2
102AW-13-FLOW02	Release of radioactive liquid from transfer piping out of 102-AW due to backflow of radioactive material into flush pit and subsequent overflow (Pool)	Multiple valving errors and failure of backflow prevention devices dumps to pit as designed	F3	E1
102S-01.a1	Radioactive/hazardous liquid released to soil suface from tank diversion box/access pit to the ground surface due to misrouting a transfer.	Human Error (Jumper/Blank Installation) + Mistransfer to Tank S-102 (450-600 Kgal) overfills tank	F2	E2
102S-01.b2	Radioactive liquid released to soil surface from S-102 "Pump Pit" due to leak in jumpers connecting tank Transfer Lines SL-140, SN-242 during saltwell pumping.	Jumper Failure + Drain Plugged	F2	E2
102S-01.b3	Radioactive liquid released to the soil subsurface from leaks in transfer Lines SL-140, SN-242. (Plume)	Line leak during saltwell pumping (corrosion)	F3	E2
102S-02.b1	Release of radioactive aerosols to atmosphere from Tank S-102 pump pit due to flammable gas generated in pump pit igniting and burning paint off pump pit walls	Jumper Leak + H2 evolution (or ammonia) + Spark	F2	E1
102S-02.b2	Release of radioactive aerosols to atmosphere from Tank S-102 due to flammable gas from tank igniting in pump pit and burning paint off pump pit	H2 /Ammonia production migrates into pump pit + Spark (pumps not operating)	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102S-02.d2	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into pit ignited from ruptured gas tank.	Vehicle drives into pit cover puncturing gas tank + Ignition	F3	E0
102S-03.b3	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank due to ignition of fuel from ruptured gas tank.	Vehicle drives into open riser puncturing gas tank + Ignition	F2	E2
102S-04.a3	Release of radioactive aerosols trapped in gases throughout the tank S-102 waste to the atmosphere due to periodic release of toxic gases (Lower energy than tank bump)	Waste growth (bump) due to chemistry within the waste coupled with crust movement	F3	E1
102S-04.e1b	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	F2	E2
102S-04.e4	Release of radioactive gases and aerosols from tank S-102 vapor space to atmosphere due to criticality	Criticality (misrouting)	F1	E1
106C-01F	Release of radioactive and/or hazardous material from C106 tank, blown out HEPA filters and/or discharge out cover blocks due to high tank pressure	Blockage of inlet, outlet, and cascade lines	F2	E2
106C-01G	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction causing local discharge of contamination through blown HEPAs or out cover blocks	Addition of acid to tank	F2	E1
106C-01H	Release of radioactive and/or hazardous material from tank C-106, through blown HEPAs or out cover blocks due to tank boiling with vent path blocked or failed	Tank boiling with lack of vent path	F2	E1
106C-01M	Release of radioactive and/or hazardous material from C106 tank, due to high temperature in the waste tank	Exothermic, chemical reaction in tank due to inadvertent addition to tank	F2	E1
106C-01N	Release of radioactive and/or hazardous material from C-106 tank due to high temperature in tank	Criticality in waste tank	F1	E2
106C-04Aa	Release of radioactive and/or hazardous material from C106 tank, due to flammable gas content of the waste causing an exothermic reaction in waste tank	High flammable gas content in tank sludge layer due to chemical reaction	F2	E1
106C-06D	Release of contamination from C-106 pump pit and potential worker injury due to fire	Fire in or near pump pit due to vehicle fuel spill and burn	F2	E1
106C-06L	Release of contamination from C-106 pump pit due to explosion/fire affecting the structural integrity	Explosion/fire in pump pit	F2	E1
106C-10J	Release of radioactive and/or hazardous material from C-106 tank due to tank structural damage, HEPA damage caused by high temperature	Fire in or around ventilation system	F2	E3

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
106C-11E	Release of unfiltered tank atmosphere from C-106 tank, due to damaged ductwork	Damage to ventilation ductwork upstream of filters	F3	E2
106C-11J	Release of radioactive and/or hazardous material from tank C-106, due to HEPA damage, beyond 200 F design	Exhauster heater overheat	F3	E1
106C-11K	Release of radioactive and/or hazardous material from C-106 tank due to HEPA filter damage, spread of contamination caused by high temperature in ventilation system	Fire in exhauster ductwork	F2	E1
106C-11L	Release of radioactive and/or hazardous material from tank C-106, through HEPA filter path due to human error in installation of filter	Improper installation of HEPAs	F3	E1
106C-11M	Release of radioactive and/or hazardous material from tank C-106, due to damaged HEPA filters	Event that damages HEPAs	F3	E1
106C-11O	Release of radioactive and/or hazardous material from C106 tank, due to loss of filtration	HEPA filter blowout	F2	E1
106C-12F	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction in tank	Added chemicals to tank instead of normal water addition	F2	E2
107AN-01-LEVE01	Release of caustic material from truck tank due to leak (aerosol spray)	Open valve on truck with pressurized tank transfer.	F3	E2
107AN-01-LEVE02	Release of caustic material from truck tank due to leak (aerosol spray)	Truck tank leak	F2	E2
107AN-01-TEMP02	Spray release of caustic material from truck tank due to high temperature	Fire in gas tank	F1	E2
107AN-02-FLOW01	Release of radioactive aerosols from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	F3	E2
107AN-02-FLOW02	Release of toxic vapors from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	F3	E2
107AN-02-PRES	Release of caustic aerosol from caustic truck transfer piping due to spray leak	Piping/hose leak initiated by various causes	F3	E2
107AN-02-PRES02	Release of caustic material from transfer piping due to high pressure (aerosol spray)	Hose disconnect	F3	E1
114SX-02.b	Radioactive liquid released from Tank Pump Pit to the ground surface due to inadvertent pumping activity (Pool)	Human Error (Not Normal Activity)	F1	E2
114SX-04.b.1.b.1b	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to failure of exhaust ducting from seismic event (Mechanical disruption)	Ducting failure from Seismic activity	F1	E1

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
114SX-04.c.1	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to mechanical failure of exhauster HEPA filter	Plenum structure failure pierces filter	F2	E2
114SX-04.c.2.a	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter seal failure	HEPA filter seal failure	F3	E2
114SX-04.c.2.b	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster defective HEPA filter	Defective HEPA filter	F3	E2
114SX-04.c.2.c	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter deterioration	Deteriorated HEPA filter	F3	E2
114SX-04.c.2.d	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter installation errors	Improper Installation (Human error)	F2	E2
114SX-05.b.2	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to sudden flashing of water added to tank for cooling	Flashing (adding cold liquid to hot tank contents)	F0	E2
114SX-05.c.2c	Radioactive gases and aerosols as well as direct radiation released from Tank SX-114 due to criticality	Criticality (difficult to achieve concentration needed and difficult to obtain configuration required)	F1	E1
114SX-05.d	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to localized explosion/fire of flammable gas	Core Sampling through a pocket of gas large enough to exceed local LFL AND A Spark = local explosion/fire	F3	E1
204AR-01H	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to spilling rail car contents	Rail car rupture due to collision with other or a derailment	F2	E2
204AR-01I	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to leak	Rail car leak due to tanker corrosion or other degradation	F2	E2
204AR-02A	Release of liquid radioactive material and toxic chemicals outside and inside the 204AR building from the trailer due to collision which causes a spill	Tank trailer damage due to running into the building and causing the tank contents to spill	F2	E1
204AR-02B	Release of radioactive material and toxic chemicals from trailer due to structural degradation of trailer	Tank trailer damaged due to corrosion or other degradation	F2	E1
204AR-07A	Release of liquid rad waste and high airborne in unloading room from the TK-102-AY due to reverse pumping of TK-102-AY contents back to 204AR	Pump in pit 02D starts and pumps back to the 204AR building through the transfer piping and leaks	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
204AR-09A	Release of airborne and waterborne contamination from the sump pit due to ruptured piping during transfer.	Rupture of transfer piping section above the sump pit	F2	E2
204AR-09B	Release of airborne and radiation contamination in the unloader room from trailer or rail car leak due to high level in sump pit	Catastrophic leak from a large liquid source such as a trailer or rail car	F2	E2
204AR-09C	Release of airborne and radiation contamination in the unloader room from rail car due to gross overfilling of catch tank	Gross overfilling of catch tank either from large source such as the trailers or rail cars or continual pumping of transfer water through a leaky pipe	F2	E2
204AR-09D	Release of radioactive liquid waste in the unloader room from the rail car or trailer due to failed rail car or trailer	Failed tank car or rail car (initially full of liquid waste) overflowing the catch tank and sump pit	F2	E1
204AR-11F	Release of airborne radiological contamination through the ventilation stack from the unloader room atmosphere due to fire in ventilation ducting	Fire in ventilation ducting resulting in damage to the HEPA filters and release to the atmosphere	F2	E1
244AR-01.b.04	Release of radioactive aerosols from the facility exhaust stack due to filter failure	HEPA filter fails	F3	E1
244AR-01.c.09	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to flammable gas ignition	Ignition of flammable gas that has collected in piping and tank dome	F2	E2
244AR-02.a.03	Release of radioactive liquid in the form of aerosols contained in a cell to the exterior of the 244-AR facility due to ignition of flammable gas	Explosion/fire from Hydrogen buildup	F1	E2
244AR-02.a.07	Release of radioactive aerosols from vessel headspace to building atmosphere with eventual release outside facility due to overfilling of sump causing tank failure	Rain or snow water intrusion	F1	E2
244AR-03.a.04	Release of radioactive aerosols into cell due to ignition of flammable gas in 244-AR Vault tank headspace	Explosion/fire due to ignition of accumulated flammable gas	F2	E2
244AR-03.a.05	Release of radioactive aerosols from tanks headspace due to ventilation system blockage	Ventilation and risers blocked while jetting occurring	F2	E2
244AR-03.a.08	Release of radioactive aerosols created by boiling waste to the cell atmosphere	Steam being supplied to tank heating/cooling coils	F3	E2
244AR-03.a.09	Release of radioactive aerosols created by criticality to the cell atmosphere	Criticality in waste	F1	E2
244AR-05.a.02	Release of radioactive material from facility due to seismic event which causes building collapse without cell collapse	Seismic event damages facility structure	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
2727W-02	Release of hazardous material from 2727W due to sodium fire	Vehicle crashes into building and ignites sodium	F1	E1
2727W-03	Release of hazardous material from 2727W due to sodium fire	Lightning	F2	E1
2727W-04	Release of hazardous material from 2727W due to sodium fire	Overhead power line falls through building	F1	E1
2727W-05	Release of hazardous material from 2727W due to sodium fire	Nitrogen tank overpressurizes sodium tank, ignites sodium	F3	E1
2727W-06	Release of hazardous materials from 2727W due to sodium-water reactions	High wind or tornado destroys building with rain/snow	F2	E1
BND-02	Release of radioactive aerosols from tank due to ignition of combustibles during preparation for bonding	Drilling holes for bonding attachments causes sparks when flammable gases or materials are present	F2	E1
CCF-01	Radioactive and hazardous release from tanks due to extended loss of ventilation (over 6 months)	Sustained loss of offsite power	F1	E2
CCF-07	Release of radioactive and hazardous materials from tank due to overfill	Disabled or unavailable staff to terminate transfer	F3	E2
CCF-20	Release of radioactive and hazardous aerosols/vapors from tanks due to chemical reactions between waste and added materials	Reactive chemical additions to two tanks	F2	E1
CDP-10	Release of radioactive contamination to soil surface from excavation or drilling in cribs, ditches, or ponds that disturbs radioactive material	Excavation or drilling	F3	E2
COB-04	Release of radioactive and/or hazardous material from COB lid due to overflow of COB during transfer (Pool)	Leak into COB with floor drain plugged, leak detector failed	F3	E2
COB-08	Release of radioactive and/or hazardous material from COB due to over filling of COB (Pool)	Transfer pipe or riser rupture, backfilling lower part of COB, then filling COB via the floor drain	F3	E2
CRN-03-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse	Human error results in excessive weight on top of containment	F3	E1
CRN-03-IB	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Human error results in excessive weight on top of containment	F3	E2
CRN-04-IA	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	F2	E1
CRN-04-IB	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-05	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Human error in positioning crane load	F3	E2
CRN-06	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Mechanical failure in positioning crane load	F3	E2
CRN-07	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Crane hits electrical lines/supplies	F3	E2
CRN-08	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Lightning	F3	E2
CRN-09	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Human error in positioning crane load	F3	E2
CRN-09-I	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Human error in positioning crane load	F3	E1
CRN-10	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Mechanical failure in positioning crane load	F3	E2
CRN-10-I	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Mechanical failure in positioning crane load	F2	E1
CRN-11-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	F3	E1
CRN-11-IB	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	F3	E1
CRN-11-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure (Pool)	Human error: improper load assembly, rigging, crane overloaded	F3	E2
CRN-12-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	F2	E1
CRN-12-IB	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	F2	E1
CRN-12-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse by boom failure (Pool)	Mechanical failure: corrosion, faulty materials	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-13-IA	Release of radioactive and/or toxic materials from below ground facility due to containment top collapse or equipment damage by boom failure	High wind or seismic event	F2	E1
CRN-13-IB	Release of radioactive and/or toxic materials from above ground facility due to equipment damage by boom failure	High wind or seismic event	F2	E1
CRN-13-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure	High wind or seismic event	F2	E2
CRN-18	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	F3	E1
CRN-18-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	F3	E1
CRN-19	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials (filter crush)	F3	E1
CRN-19-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials	F2	E1
CRN-20	Radioactive or toxic material release from pit or riser due to dropping crane load onto above ground tank equipment	High wind or seismic event (Filter Crush)	F3	E1
CRN-20-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	High wind or seismic event	F2	E1
CRN-21-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Human error: improper load assembly, rigging, positioning error	F3	E2
CRN-22-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Mechanical failure: corrosion, faulty materials, hydraulics	F2	E2
CRN-23	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	High wind or seismic event	F3	E3
CRN-23-IA	Release of radioactive or toxic materials from underground facility bottom due to loss of vertical load control, dropping crane load into facility (subsurface leak)	High wind or seismic event	F2	E1
CRN-23-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility	High wind or seismic event	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-25-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Human error: improper load assembly, rigging, positioning error	F3	E1
CRN-26-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	F2	E1
CRN-27-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	F2	E1
CVR-05	Release of radioactive or hazardous material through combustion or explosion/fire of materials in pit due to human error	Failure to sniff or improper sniffing	F3	E1
CVR-15-I	Release of radioactive or hazardous material from pit upon dropping or falling coverblocks or pieces of coverblocks	Coverblock hooks fail or pieces of degraded coverblock fall into pit	F3	E1
EE-11	Release of radioactive and hazardous materials from tank due to overfilling	Water line breaks and overfills tank	F2	E2
EE-17	Radioactive and hazardous material release from inactive equipment due to excavation error	Excavation into abandoned or inactive equipment	F3	E1
I-222S-1-CMP-C	Release (potential spray leak) of 222-S lab waste to atmosphere in diversion box or 244-S Pump Pit due to increased corrosion from failure to add NaOH.	Human Error - Failure to add NaOH	F3	E2
I-222S-1-LVL-A	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Failing to shut off steam after TK-102 is empty	F3	E2
I-222S-1-RXN-A	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Transfer of incompatible waste	F3	E2
I-222S-2-FLW-C	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Human Error - Incorrect valve line up	F2	E2
I-222S-2-LEK-B	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	E2
I-222S-2-LEK-C	Release of 222-S lab waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	F2	E2
I-222S-2-LEK-E	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from a seismic event.	Earthquake	F2	E2
I-222S-2-PRS-A	Release (steam) of aerosols and particulates to atmosphere through ventilation due to over pressurization of 244-S DCRT caused by sending just steam to tank farm.	Steam reducer valve fails open.	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-242A-1-LEK-B	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	E2
I-242A-1-LEK-C	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	F2	E2
I-242A-1-LEK-E	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	F2	E2
I-242A-2-FLW-A	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	F3	E2
I-242A-2-FLW-B	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	F3	E2
I-242A-2-LEK-B	Release of slurry tank waste to the atmosphere due to spray leak at the diversion boxes or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	F1	E2
I-242A-2-LEK-C	Release of slurry tank waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	F2	E2
I-242A-2-LEK-E	Release of slurry tank waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes leak.	F2	E2
I-242A-2-VSC-A	Release of aerosols in receiver tank due to tank burp from over concentration. Potential to generate conditions similar to SY101, "Tank Burp" due to hydrogen being trapped in thick solution. (Lower energy than tank bump)	Human Error - Over concentration of slurry at evaporator.	F2	E2
I-242A-3-FLW-A	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	F3	E2
I-242A-3-FLW-B	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	F3	E2
I-242A-6-FLW-B	Release of diluted high level tank waste from feed tank TK-AW-102 caused by overfilling TK-AW-102 tank and annulus and aggravated by an uncontrolled evaporator dump when a raw water leak occurs in evaporator condenser room.	Rupture of raw water line in condenser / pump room	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-242A-7-FLW-A	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Compressor fails AND AW tank farm air supplied from 242-A	F1	E2
I-242A-7-FLW-B	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Valve inadvertently closed AND AW tank farm air supplied from 242-A	F1	E2
I-242A-7-FLW-C	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Filter plugged AND AW tank farm air supplied from 242-A	F1	E2
I-242S-2-FLW-A	Release of tank waste diluted with contaminated fire water to the soil due to flooding the pump room from a fire main break and pumping the water to 102-SY tank which overfills the tank and floods pit through risers.	Break in fire main.	F1	E2
I-242S-2-FLW-E	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the pump room from 102-SY.	Human Error - Incorrect valve line up	F2	E2
I-242S-2-LEK-B	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-242S-2-LEK-C	Release of contaminated water to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	E2
I-242S-2-LEK-E	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake	F2	E2
I-242S-4-FLW-C	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the condenser room.	Human Error - Incorrect valve line up	F2	E2
I-242S-4-FLW-D	Release of tank waste diluted with contaminated water to the soil due to flooding the condenser room which is pumped to 102-SY tank and overfills the tank and floods pit through risers.	Break in fire main	F1	E2
I-242S-4-LEK-E	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	E2
I-BPLANT-1-CMP-B	Release (spray leak) of low level waste at diversion box from transfer of low pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH leads to corrosion and leak in pipe.	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-BPLANT-2-FLW-D	Release of aerosols and/or toxic vapors from receiver tank due to transfer of incompatible waste from B Plant.	Human Error -Communication error between B Plant and TWRS causes transfer of incompatible waste.	F3	E2
I-BPLANT-2-LEK-B	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-BPLANT-2-LEK-C	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	E2
I-BPLANT-2-LEK-E	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, cuased by rupture at pipe connections from an earthquake.	Earthquake causes spray leak	F2	E2
I-PFP-1-AGT-A	Release of fission product gasses and aerosols from receiver tank due to: Potential for solids to collect in D-5 If mixed later, potential for composition of next batch to exceed Criticality Prevention Specifications (CPS). Potential "Criticality Issue".	Human Error or Agitator fails results in criticality	F3	E2
I-PFP-1-CMP-B	Release of fission product gasses and aerosols from receiver tank due to: Potential for localized concentration of fissile materials in receiver tank from failure to add ferric nitrates. Potential "Criticality Issue".	Failure to add ferric nitrates, results in criticality	F3	E2
I-PFP-1-CMP-D	Release of fission product gasses and aerosols from receiver tank due to excess fissile material in waste. Potential to exceed criticality prevention specification requirements for shipment. Potential "Criticality Issue".	Excess fissile content added to waste results in criticality	F3	E2
I-PFP-2-LEK-B	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-PFP-2-LEK-C	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line	F2	E2
I-PFP-2-LEK-E	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	F2	E2
I-PFP-2-TMP-B	Release (steam) of aerosols and entrained particulate from 244-TX ventilation system due to saturating HEPAs with steam due to failure of steam reducer which sends higher pressure steam to steam jet, gassing it out and sends steam to 244-TX.	Failure of steam reducer	F2	E2
I-PFP-3-LEK-B	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-PFP-3-LEK-C	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-PFP-3-LEK-E	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake	F2	E2
I-PUREX-1-AGT-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error or Mechanical Failure - Agitator fails or is not turned on	F3	E2
I-PUREX-1-CMP-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in corrosion and causes spray leak.	F3	E2
I-PUREX-1-LVL-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	F3	E2
I-PUREX-2-LEK-B	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-PUREX-2-LEK-C	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from inadvertent excavation.	Inadvertent excavation of line causes spray leak.	F2	E2
I-PUREX-2-LEK-E	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by an earthquake.	Earthquake causes spray leak.	F2	E2
I-PUREX-2-PRS-A	Release (steam) of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	F2	E2
I-PUREX-3-AGT-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Agitator fails or is not turned on results in corrosion and causes spray leak.	F3	E2
I-PUREX-3-CMP-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in spray leak.	F3	E2
I-PUREX-3-CMP-E	Release of fission product gasses and aerosols from receiver tank due to criticality caused by exceeding Criticality Prevention Specifications for shipment from PUREX.	Transfer of L cell sump water to tank F-18 and eventually to the tank farm.	F3	E2
I-PUREX-3-LVL-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	F3	E2
I-PUREX-4-FLW-B	Release (ground surface) of high level tank waste diluted with flush water from the receiver tank due to overfilling from sending excess water.	Block valve on flush water inadvertently left opened or leaking.	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-PUREX-4-LEK-B	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-PUREX-4-LEK-C	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	E2
I-PUREX-4-LEK-E	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	E2
I-PUREX-4-PRS-A	Release of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	F2	E2
I-TPLANT-1-CMP-B	Release (spray) of low level waste at diversion box from transfer of lower pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH causes corrosion and associated spray leak.	F3	E2
I-TPLANT-2-CMP-A	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Steam block valve inadvertently opened or failure to close valve when tank 15-1 is low	F3	E2
I-TPLANT-2-LEK-B	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	F1	E2
I-TPLANT-2-LEK-C	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	E2
I-TPLANT-2-LEK-E	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	F2	E2
I-UPLANT-1-LEK-B	Release of low level waste to the ground at the rupture of the line.	Inadvertent excavation of line.	F1	E2
ITK-05	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Tank burps from intrusive activity	F2	E1
ITK-05-I	Release of radioactive and/or hazardous material from point of in-facility access due to gas release from in-facility waste during intrusive activity (non-fire, non-explosion)	Gas release from in-facility waste during intrusive activity	F2	E1
ITK-06	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to criticality	Intrusive activity causes critical mass	F1	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
ITK-06-I	Release of radioactive and/or hazardous material from point of in-facility access due to criticality within the in-facility waste during intrusive activity (non-fire, non-explosion)	Criticality from intrusive activity	F1	E2
ITK-08-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Exothermic reaction of incompatible materials in facility	F2	E2
ITK-09-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Failure to bond components or incorrect bonding	F2	E2
ITK-10-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Spark from equipment or tools provide an ignition source	F3	E2
ITK-11-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Lightning, range fire, or seismic event ignites facility vapors	F1	E2
ITK-FR-03	Release of radioactive aerosols from tank and/or receiver due to equipment jam in riser	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing breach of tank & receiver containment	F1	E2
ITK-FR-08	Release of radioactive aerosols/vapors from flex receiver due to structural failure	High winds tear flex receiver bag	F3	E2
ITK-FR-13	Release of radioactive aerosols/vapors from flex receiver due to buildup and ignition of flammable gas in receiver	Hydrogen gas buildup in tank/riser that travels into receiver + Ignition source (spark from herculite or equipment)	F1	E2
ITK-FR-22	Release of radioactive aerosols from flex receiver due to tank gas release	Tank gas release pressurizes bag and causes bag to rupture	F1	E2
NP-02	Radioactive and hazardous material releases from tanks and ventilation systems due to fire	Lightning strikes ventilation system	F2	E1
NP-03	Radioactive and hazardous material releases from tanks due to fire in tanks	Lightning strikes riser in tank farm	F2	E2
NP-05	Radioactive and hazardous material release from tanks, nearby ground surfaces, and ventilation systems due to above grade disturbances	High winds	F1	E2
NP-15	Radioactive and hazardous material release from isolated or abandoned equipment due to fire	Hydrogen producing chemical reactions in isolated or abandoned equipment	F3	E1
OGT-EXT3-01B	Release of radioactive or hazardous material from the primary pipe due to leak caused by truck crash into piping system	Human error, line struck by truck	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
OGT-FLOW1-02	Release of radioactive or hazardous material from pit overflow due to primary pipe leak caused by over-rated pump	Incorrect pump installed creates excessive flow and pressure on OGT system eroding EPDM pipe AND Leak to secondary pipe AND Drain in pit plugged	F2	E2
OGT-FLOW1-03B	Release of radioactive or hazardous material from the primary pipe due to misdirected flow of waste through flush line	JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to water truck, drum, or onto ground	F1	E2
OGT-FLOW1-04	Release of radioactive or hazardous material from the primary pipe due to valve failure resulting in misdirected flow of waste through flush line to flush water supply truck	JR-1 leak (bleed-by) AND 2 check valves fail AND Flush disconnect fails and pump started causing reverse flow to flush water truck tank	F1	E2
OGT-FLOW1-06	Release of radioactive or hazardous material from the DCRT due to overflow	Exceed volume available in DCRT/insufficient volume available Condition goes unnoticed until overflow occurs	F2	E2
OGT-FLOW2-01B	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Incorrect pump installed creates excessive flow and isolation valve closed on secondary pipe Erosion of EPDM AND Pressurization of secondary pipe causing leaks from flanges gasket within concrete shield	F2	E2
OGT-FLOW2-03B	Release of radioactive or hazardous material from the primary pipe due leak caused by incorrect pump installed	Installation of incorrect pump AND Failure of inner pipe AND Isolation valves closed on secondary pipe drains causing leak from failed welds on flange within the concrete shield	F1	E2
OGT-PRES1-01	Release of radioactive or hazardous material from overflow of pit due to leak caused by high pressure	Heat up of hydro test by heat tape or high ambient temperature High pressure results from captive fluid heat up AND Inner pipe damaged, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	F1	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
OGT-REAC1-01	Release of radioactive or hazardous material from overflow of pit due to primary pipe leak cause by chemical reaction	Pumping from multiple tanks to single OGT Potential for adverse chemical reactions in pipeline damaging inner pipe, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	F1	E2
OGT-TEMP1-02	Release of radioactive or hazardous vapors/aerosols from the primary pipe due to spray leak caused by high temperatures	Vehicle accident above ground start fire Melt the EPDM hose causing a leak to secondary pipe; Pumping occurring, fire fails gasket and facilitates a release to atmosphere	F1	E2
OGT-TEMP1-03	Release of radioactive or hazardous material from overflow of pit due to leak caused by high temperature	High temperature flush water fails inner pipe causing leak to secondary pipe and drain to pit AND Insufficient drainage in pit	F1	E2
RSR-06-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Failure to bond components or incorrect bonding allows electrostatic spark	F2	E2
RSR-07-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Spark from failure to use non-sparking tools or sparks from welding, cutting, grinding, etc.	F3	E2
TFS-1	Release of radioactive or hazardous waste liquid from overflow of 244-S vault to the 244-S pump pit due to syphon effect on 102-SY tank (pump does not overflow)	Human Error: Failure to close isolation valve (or valve malfunction) following waste transfer which allows flow to continue (syphon) when pump is stopped.	F3	E2
VEH-01	Release of radioactive or toxic materials from cask due to fire caused by vehicle operation	Vehicle catches on fire	F3	E2
VEH-01-I	Release of radioactive or toxic materials from vehicle carrying MISF samples or contaminated equipment due to vehicle fire	Vehicle catches on fire	F2	E2
VEH-02	Release of radioactive or toxic material from cask due to damage to transport casks during an earthquake	Seismic event	F1	E1
VEH-02-I	Release of radioactive or toxic material from MISF samples in transport casks due to seismic damage	Seismic event	F1	E1
VEH-03	Release of radioactive or toxic material from cask due to damage to transport casks during a high wind/tornado	High wind/tornado	F2	E2
VEH-03-I	Release of radioactive or toxic material from MISF samples in transport casks due to high wind/tornado damage	High wind/tornado	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
VEH-07-I	Release of radioactive or toxic material from MISF due to riser being sheared off and possibly vehicle gas tank ruptured and fire	Vehicle moving near facility risers	F3	E1
W058-FLOW01	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	F3	E2
W058-FLOW03	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	F2	E2
W058-FLOW05a	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	F3	E2
W058-FLOW05b	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	F2	E2
W058-FLOW05c	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	F2	E2
W058-FLOW07	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	F3	E2
W058-FLOW09	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	F2	E2
W058-FLOW11a	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	F3	E2
W058-FLOW11b	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	F2	E2
W058-FLOW11c	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	F2	E2
W058-FLOW13	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Open path for pool leak from test riser	F3	E2
W058-INTEG01a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
W058-INTEG01b	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	E2
W058-INTEG01c	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	E2
W058-INTEG01d	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	E2
W058-INTEG03a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	F2	E2
W058-INTEG03b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	F2	E2
W058-INTEG05a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F2	E2
W058-INTEG05b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	E2
W058-INTEG07a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F3	E2
W058-INTEG07b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	E2
W058-INTEG09a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
W058-INTEG09b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	E2
W058-INTEG11a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	E2
W058-INTEG11b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	E2
W058-INTEG13a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	E2
W058-INTEG13b	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	E2
W058-INTEG13c	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	F2	E2
W058-INTEG13d	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	F2	E2
W058-INTEG14a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	F2	E2
W058-INTEG14b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	F2	E2
W058-INTEG16a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	E2
W058-INTEG16b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
W058-INTEG18a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	E2
W058-INTEG18b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	F2	E2
W058-INTEG20a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	E2
W058-INTEG20b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	F1	E2
W058-INTEG22	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	F1	E2
W058-INTEG24	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	E2
W058-INTEG26	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	Seismic event plus mitigative features failure	F1	E2
W058-INTEG28	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	F1	E2
W058-INTEG30	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Seismic event	F1	E2
W058-PRES01	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	F3	E2
W058-PRES03	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	F3	E2
XS-01-FLOW01	Release of radioactive aerosols from 244-TX DCRT due to ignition of flammable gas atmosphere	Pressure drop in transfer line releases flammable gas into DCRT atmosphere and ignition source causes deflagration	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-01-FLOW05	Release of radioactive contaminated liquid from transfer piping to 244-TX-DCRT via the raw water system due to reverse flow of liquid waste (Pool)	Mis-valving causes mixing of waste into raw water system that causes leak in the flush pit cover block	F2	E2
XS-01-FLOW06	Release of liquid radioactive waste from saltwell pumping transfer piping in DCRT pump pit to surface due to overflow (Pool)	Open jumper in single shell tank pump pit leads to overflowing of pump pit	F3	E2
XS-01-FLOW07	Release of liquid radioactive waste to the soil from transfer piping from SST to DCRT due to leakage (Plume)	Pipe failure from various causes	F3	E2
XS-01-PRES01	Release of liquid radioactive waste from damaged transfer piping to 244-TX DCRT due to over pressure (Pool)	Use of wrong size pump and closed valve causes over pressure and subsequent pipe failure	F2	E2
XS-01-TEMP01	Release of steam-aerosol from transfer piping in pump pit due to steam hammer and resulting pipe damage	Extended recirculation and consequential heating of saltwell liquid with sudden opening of valve when cover block is open	F3	E2
XS-02-FLOW02	Release of aerosols and particulate from DCRT ventilation filter due to transfer of steam from PFP steam jet into DCRT headspace	Human error (failure to shut off steam jet at completion of transfer) which causes DCRT ventilation filter failure	F3	E1
XS-02-FLOW03	Release of toxic gases (oxides of nitrogen) from DCRT due to chemical reaction	Chemical reaction between sodium nitrite (DCRT) and nitric acid (PFP transfer) due to failure to adjust waste pH prior to transfer	F2	E1
XS-02-FLOW04	Release of liquid radioactive waste to soil from transfer pipe (non-pool) subsurface plume	Failure to adjust waste pH prior to transfer causes leak	F2	E2
XS-02-FLOW05	Release of liquid radioactive waste to the soil from PFP transfer piping due to pipe break	Pipe break from various causes	F3	E2
XS-03-LEVE01 XS-21-LEVE (244-S DCRT)	Release of combustion products from 244-TX DCRT due to flammable gas burn in tank atmosphere	Evaporation of DCRT contents causing decreased ability of waste to retain flammable gases and spark source	F2	E2
XS-03-LEVE02 XS-21-LEVE (244-S DCRT)	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Evaporation of DCRT contents with increased solids settling on DCRT bottom creates critical mass	F3	E2
XS-03-PRES01 XS-21-PRES (244-S DCRT)	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn in tank atmosphere	Loss of ventilation flow with accumulation of flammable gas and spark source	F2	E2
XS-03-PRES02 XS-21-PRES (244-S-DCRT)	Release of toxic vapors from 244-TX DCRT due to decreased ability to keep vapors in solution (fan on)	Heating of DCRT or chemical adjustment	F3	E1

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-03-PRES05	Release of toxic vapors from DCRT due to increased concentrations in DCRT atmosphere	Transfer of steam from PFP causing evolution of toxic gases due to heating tank	F2	E2
XS-03-TEMP01	Release of radioactive aerosols from 244-TX DCRT headspace due to positive pressure	Chemical reaction in DCRT causes positive pressure	F2	E1
XS-03-TEMP02	Release of toxic vapor from DCRT due to chemical reaction	Chemical reaction in DCRT toxic vapor	F2	E1
XS-03-TEMP02 XS-21-TEMP (244-S-DCRT)	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of material into tank that violates criticality specification	F3	E2
XS-03-TEMP03 XS-21-TEMP (244-S-DCRT)	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn-explosion/fire in tank atmosphere	Buildup of gases, loss of ventilation, and spark source	F2	E2
XS-03-TEMP04 XS-21-TEMP (244-S-DCRT)	Release of liquid radioactive waste from 244 TX DCRT due to overflow	Freezing temperatures causing raw water line break-leak with leakage to tank causes overflow	F3	E2
XS-05-FLOW01	Release of aerosols and filter media from DCRT ventilation system due to HEPA filter damage	Replacement of exhaust fan with larger capacity fan causes HEPA filter damage	F2	E1
XS-05-TEMP01	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to failure of ventilation heater controls	F3	E2
XS-05-TEMP02	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to flammable gas buildup and ignition	F3	E2
XS-06-FLOW01	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of inadequately recirculated waste from tank due to failure to appropriately balance flow between recirculation and transfer line causing buildup of solids creating critical mass	F3	E2
XS-06-FLOW04	Release of liquid radioactive waste from transfer piping from an SST to a DCRT due to spray leak (SPUTTER) of saltwell liquor from DCRT pump pit	Pipe failure	F2	E3
XS-06-FLOW05	Release of waste from transfer pipe out of 244-TX-DCRT to the soil due to flow path to soil	Concurrent failure of transfer piping and encasement	F2	E2
XS-07-FLOW01	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Excavation accident fails primary pipe and encasement	F3	E2
XS-07-FLOW02	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Corrosion of inner and outer pipe	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-07-FLOW03	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	High structural loading from traffic or cranes cause failure of primary pipe and encasement	F3	E2
XS-07-FLOW04	Release of radioactive waste to soil from transfer piping of 244-TX-DCRT due to leak in primary pipe and encasement	Seismic event fails primary pipe and encasement	F2	E2
XS-07-FLOW05	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	F3	E2
XS-07-FLOW06	Release of radioactive waste to soil from transfer pipe out of 244-TX-DCRT due to leak in primary pipe and encasement	Water hammer causes failure of primary pipe and encasement	F3	E2
XS-11-LEVE01	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and misrouting causes overflow	F3	E2
XS-11-LEVE02	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and open jumper causes overflow	F3	E2
XS-11-LEVE03	Release of radioactive waste from diversion box to surface due to overflow	Plugged drain and piping leak causes overflow	F3	E2
XS-12-FLOW02	Release of aerosols from diversion box 241-U-152 due to flammable gas deflagration	Chemical reaction of catch tank material with backflow of vapors via diversion box drain line	F1	E1
XS-12-FLOW03	Release of aerosols from diversion box 241-U-152 due to hydrogen deflagration	Radiolysis of catch tank material with backflow of vapors via diversion box drain line and ignition source	F1	E1
XS-12-FLOW05	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Backflow from catch tank causes overflow from diversion box	F3	E2
XS-13-PRES01	Release of radioactive aerosols from 241-U-301B catch tank due to chemical reaction	Draining of incompatible chemicals to catch tank	F3	E2
XS-13-PRES03	Release of toxic vapors due to chemical reaction from 241-U-301B	Draining of incompatible chemicals to catch tank	F2	E1
XS-13-PRES04	Release of fission product gases and aerosols from catch tank 241-U-301B due to criticality	Transfer of excess fissile material to catch tank creates critical mass	F1	E2
XS-20-FLOW01	Release of radioactive aerosols from 244-TX DCRT due to chemical reaction	Transfer of incompatible waste to 244-TX DCRT due to improper valve lineup	F3	E2
XS-20-FLOW03	Release of radioactive aerosols from 244-TX DCRT due to positive pressure caused by chemical reaction	Chemical reaction of 244-S material with contents of 244-TX caused by misrouting	F2	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-20-FLOW04	Release of toxic vapors from 244-TX DCRT due to chemical reaction with incompatible material in 244-S DCRT	Mixing contents of 244-TX and 244-S due to misrouting causes chemical reaction	F2	E2
XS-20-FLOW05	Release of fission product gases and aerosols from 244-S DCRT (not designated solids receiver) due to criticality	Transfer of waste from 244-TX DCRT due to improper valve lineup creates critical mass	F1	E2
XS-20-FLOW08	Release of radioactive waste from 244-TX DCRT to surface due to overflow	Transfer of excess waste to 244-TX DCRT due to improper valve lineup causes overflow	F3	E2
XS-20-FLOW09	Release of radioactive waste from 244S DCRT to surface due to overflow	Transfer of waste from 244-TX DCRT due to improper valve lineup causes overflow	F3	E2
XS-26-PRES XS-26-TEMP	Release of toxic vapors from 102-SY due to chemical reaction	Mistransfer of incompatible waste causes chemical reaction	F3	E2
XS-26-PRES XS-26-TEMP 102-AW-TEMP (FOR TK-102-AW)	Release of fission product gases and aerosols from 102-SY due to criticality	Transfer of critical mass of fissile material and achievement of critical geometry	F1	E2
XS-26-PRES01	Release of radioactive aerosols from 102-SY tank due to chemical reaction	Mis-transfer of incompatible waste causes chemical reaction	F3	E2
XS-26-TEMP01	Release of radioactive aerosols from 102-AW due to tank bump	High heat waste plus loss of cooling contributes to tank bump	F2	E2
XS-35-FLOW02	Release of radioactive waste to surface from 242-S Evaporator sump due to backflow to and overflow	Human error of leaving open flow path after emptying the sump and backflow and subsequent overflow	F3	E2
XS-37-FLOW01	Release of radioactive liquid waste from catch tank to surface due to overfilling (Pool)	Leak of transfer piping with drainage to catch tank causes overflow	F3	E2
XS-37-FLOW02	Release of radioactive liquid waste to soil from transfer piping due to leak of liquid waste from concrete encasement (Subsurface plume)	Leak of transfer piping with encasement leak or blocked drain to catch tank (liquid oozes out concrete encasement)	F3	E2
XS-41A-FLOW01	Release of radioactive waste from vent station nozzle pit to surface due to overflow	Catastrophic failure of vent piping causes overflow of nozzle pit	F3	E2
XS-41A-FLOW02	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Vent valve left open or leaking during transfer causes overflow	F3	E2

Table 3.4-2. Hazardous Conditions With Potential Significant Onsite Consequences (S2).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-41B-LEVE01	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in nozzle pit	Failure to empty catch tank with buildup of flammable gas in nozzle pit plus ignition source	F2	E2
XS-41B-LEVE03	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Failure to empty catch tank, causing overflow of tank and pit due to transfer failure	F3	E2
XS-41C-LEVE01	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in catch tank pit	Leak of catch tank with buildup of flammable gas in catch tank pit plus ignition source	F2	E2
XS-48-FLOW	Release of liquid waste to soil from transfer piping between B-Plant and 241-ER-152 diversion box due to leak (Plume)	Piping failure from various causes	F3	E2
XS-52-FLOW01	Release of radioactive waste to surface from transfer piping to TK-CR-003 due to leak (Pool)	Failure of pipe from various causes	F2	E2
XS-52-FLOW02	Release of radioactive waste from TK-CR-003 to surface due to overflow (Pool)	Mis-valving or valve failure during cross-site transfer causes overflow	F3	E2

Table 3.4-3

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-02-LEVE	Release of radioactive aerosols from TK-102-AW annulus due to the presence of radioactive liquid waste in TK-102-AW annulus	Primary tank leakage from various causes	F3	E1
102AW-02-LEVE02	Release of liquid radioactive waste from 102-AW due to leak of primary and secondary tank	Structural failure of primary tank when annulus leaks	F1	E3
102AW-02-LEVE02A	Release of radioactive aerosols from TK-102-AW annulus ventilation system due to the presence of radioactive liquid waste in the annulus	Mis-routing of transfer to annulus instead of primary tank	F3	E1
102AW-02-LEVE06	Release of radioactive liquid to soil column from 102-AW annulus due to leakage	Primary tank leakage from various causes combined with annulus leakage	F1	E3
102AW-03-PRES01 102AW-03-LEVE	Release of radioactive aerosols from TK-102-AW annulus due to the presence of radioactive liquid waste in TK-102-AW annulus	Leak of primary tank to annulus combined with annulus ventilation fan failure	F2	E1
102AW-03-PRES02 102AW-03-LEVE	Release of radioactive aerosols from TK-102-AW annulus due to the presence of radioactive liquid waste in TK-102-AW annulus	Leak of primary tank to annulus combined with loss of power to annulus ventilation	F2	E1
102AW-04-LEVE01	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Leak of primary piping	F3	E1
102AW-04-LEVE02	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Misrouting through an open jumper plus clogged drain	F3	E1
102AW-04-LEVE03	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Dissolution of residual contamination in central pump pit caused by erroneous use of raw water	F3	E1
102AW-04-LEVE04	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Dissolution of residual contamination in central pump pit caused by pit cleaning plus clogged drain	F3	E1
102AW-04-PRES01	Release of radioactive particulate from 102-AW central pump pit due to pressurization	Loss of primary tank ventilation causes pressurization of pump pit.	F3	E1
102AW-04-PRES02	Release of radioactive particulate from 102-AW central pump pit due to its being open to atmosphere	Removal of cover block	F3	E1
102AW-04-STRU.02	Release of radioactive particulate from 102-AW central pump pit due to confinement inadequacies	Structural degradation with time	F2	E1
102AW-04-STRU01B	Release of radioactive particulate from 102-AW central pump pit due pump pit structural failure	Seismic-induced failure of central pump pit	F1	E1
102AW-08-COMP01	Release of radioactive aerosols from tank vapor space due to production of aerosols from sludge and migration	Chemical reactions causing agitation	F2	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
102AW-08-COMP06	Release of toxic gases from 102- AW tank vapor space due to production and migration of toxic gases from sludge	Chemical reactions in waste causes production of toxic gases	F3	E1
102AW-09-COMP03	Release of toxic vapors from a of separable organic layer in TK-102-AW due to fuel spill into tank	External event (fuel spill)	F3	E1
102AW-09-COMP04	Release of toxic vapors from a separable organic layer in TK-102-AW	Core sampling (NPH) releases trapped vapors	F3	E1
102AW-09-COMP05	Release of toxic vapors from a separable organic layer in TK-102-AW due to error in transfer	Generator erroneous transfer of insoluble organic material	F3	E1
102AW-09-TEMP02	Release of aerosols from annulus due to leak of liquid waste into the annulus	Tank leak due to thermal stress caused by transfer of hot solution to an almost empty tank	F1	E1
102S-02.d3	Release of radioactive aerosols to atmosphere from Tank S-102 pit due to burning fuel on top of pit caused by ignition of gas from ruptured gas tank.	Vehicle drives into pit cover puncturing gas tank + Ignition	F3	E1
102S-04.e2	Release of radioactive aerosols contained in tank vapor space to atmosphere due to generation of excessive heat	Chemical Reaction in waste Addition of incompatible waste/chemical (misroute)	F2	E1
102S-06.a	Release of radioactive aerosols from tank S-102 vapor space to atmosphere due to ventilation system failure	Filter plugged	F3	E1
106C-01K	Release of radioactive and/or hazardous material from C106 tank due to high temperature	Water evaporation	F3	E1
106C-01S	Release of radioactive and/or hazardous material from C106 tank caused by low level in waste tank due to high temperature	Water evaporation	F3	E1
106C-01Sa	Release of radioactive and/or hazardous material from tank C-106, due to low tank level because of tank leak	Waste tank leak	F3	E3
106C-01T	Release of radioactive and/or hazardous material from tank C-106, due to low level in waste tank	Failure to add water to tank	F3	E1
106C-01W	Release of radioactive and/or hazardous material from tank C-106, due to high level in waste tank	Level change due to barometric changes	F1	E1
106C-06A	Release of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit being opened to atmosphere	Cover blocks removed	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
106C-06F	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain while adding water	F3	E1
106C-06G	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain with rain or snow melt intrusion	F3	E1
106C-06H	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain during pit cleaning, cover blocks are off	F3	E1
106C-06K	Release of radioactive and/or hazardous material from C-106 tank pump pit, due to decreased pump pit structural integrity caused by drop	Equipment drop during crane work	F3	E1
106C-10F	Release of radioactive and/or hazardous material from tank C-106, potential spread of contamination, due to reverse air flow if intake HEPAs damaged	Loss of tank active ventilation	F3	E1
106C-10H	Release of radioactive and/or hazardous material from tank C-106, due to HEPA filter damage	Low ambient air temperature results in ico on filter and filter damage	F1	E1
106C-10K	Release of radioactive and/or hazardous material from tank C-106, spread of contamination, due to ventilation air intake open to atmosphere	HEPA filter breach	F3	E1
106C-10L	Release of radioactive and/or hazardous material from tank C-106, spread of contamination, due to ventilation air intake open to atmosphere	Air intake ductwork damaged	F3	E1
106C-11A	Release of radioactive and/or hazardous material from tank C-106, due to HEPA filter damage	HEPA filters plugged	F3	E1
106C-11G	Release of tank atmosphere through exhauster drain from C-106 tank, due to leak or failure to add water routinely	Loss of exhauster seal pot water due to leak or failure to add water routinely	F3	E1
106C-11H	Release of radioactive and/or hazardous material from tank C-106, due to condensate backing up into filters, de-entrainer or heater	Exhauster seal pot water freezing due to loss of heat trace	F3	E1
106C-11I	Release of radioactive and/or hazardous material from tank C-106, due to moisture carryover into HEPAs causing loss of efficiency	Exhauster heater failure	F3	E1
106C-11N	Release of radioactive and/or hazardous material from tank C-106, through HEPA filter path due to filter degradation over time	HEPA filter degradation	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
106C-12A	Release of radioactive and/or hazardous material from tank C-106, due to tank falling below level limit, because of excessive tank evaporation from high temperature	Pit drain plug, water addition fails	F3	E1
106C-12B	Release of radioactive and/or hazardous material from tank C-106, due to low tank level	Water addition tank truck breakdown	F3	E1
106C-12C	Release of radioactive and/or hazardous material from tank C-106, due to low tank level because of increased evaporation	Water addition tank truck leak	F3	E1
106C-12D	Release of radioactive and/or hazardous material from C106 tank, due to excessive tank evaporation from high temperature which causes tank to fall below level limit	Tank level instrumentation fails, does not prompt water addition	F3	E1
107AN-01-LEVE03	Release of caustic material from truck tank due to leak	Failure to secure truck	F3	E2
107AN-02-FLOW03	Release of concentrated caustic solution to surface from transfer piping due to leak	Caustic solution transfer line leak	F2	E2
107AN-02-TEMP01	Release of caustic material from transfer piping due to low temperature during transfer	Low temperature from truck	F2	E1
107AN-03-FLOW	Release of concentrated caustic solution to surface from transfer piping due to backflow of caustic	Low temperature causes backflow	F3	E1
114SX-04.a.1a	Radioactive aerosols released from Tank SX-114 head space via Tank Ventilation (requires failure of outlet filter) to the atmosphere when exhauster fails	Exhauster Failure Mechanical Low Temperature (Thermocouple in exhaust duct not insulated picks up radiated temperature from ductwork.)	F3	E0
114SX-04.a.1b	Radioactive aerosols released from Tank SX-114 head space via Tank Ventilation (requires failure of outlet filter) to the atmosphere when exhauster fails	Filter Plugged	F3	E0
114SX-04.a.4	Radioactive aerosols from Tank SX-114 headspace released to atmosphere due to inlet HEPA filter failure coupled with exhauster failure	Filter Failure	F3	E1
114SX-04.b.1.a.1	Radioactive aerosols from Tank SX-114 headspace released to atmosphere due to inlet HEPA filter failure coupled with exhaust butterfly valve closure	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum.	F3	E1
114SX-04.b.1.b.1a	Radioactive aerosols released from Tank SX-114 head space to the atmosphere due to ventilation system ducting failure (with failed inlet filter)	Ducting failure from bad welds	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
114SX-04.b.1.c.1	Release of radioactive aerosols from Tank SX-114 head space to atmosphere due to exhauster failure and multiple filter failure	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	F3	E1
114SX-04.b.1.d.1	Release of radioactive aerosols from Tank SX-114 head space to atmosphere due to exhauster filter plugging (requires failure of inlet filter)	Exhaust filter plugging plus inlet filter failure	F3	E1
114SX-04.b.5	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to failure of exhauster HEPA filters	No Ventilation Flow High Ambient Temperature Conditions Leading to filter failure	F3	E1
204AR-01A	Release and spread of airborne radiological contamination from the rail car due to over pressurization	Over pressure in the rail car due to chemical reaction, rupture disk fails	F3	E1
204AR-01B	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to high ambient temperature	Over pressure in the rail car due to high ambient temperature, rupture disk fails	F3	E1
204AR-01C	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to chemical reaction causing over pressurization	High temperature in the rail car due to chemical reaction of the rail car contents, rupture disk fails	F3	E1
204AR-01D	Release and spread of airborne contamination and toxic chemical exposure to worker from the rail car due to leaking rail car caused by high ambient temperature and over pressurization of car tank	High ambient temperature causing pressurization of rail car and possible leakage, failed rupture disk	F3	E1
204AR-01E	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to damaged rupture disk	Chemical reaction or internal fire resulting in an over pressure condition on rail car	F2	E1
204AR-01F	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to an over pressurization which results from a diesel fuel fire under the car	Fire from diesel fuel of the locomotive that results in an over pressure condition on the rail car, rupture disk fails	F1	E1
204AR-01G	Release of airborne and liquid contamination from overflowing catch tank due to siphoning of rail car contents	Vacuum condition on rail car results in siphoning of rail car contents to the catch tank	F2	E1
204AR-01J	Release of airborne contamination from overflowing catch tank due to overfilling through priming line	Priming line inadvertently fills up rail car and overflows rail car through its vent line to the catch tank	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
204AR-01K	Release of airborne contamination from unloader room due to overflowing catch tank	During sluicing operations, fill up rail car and overflow through its vent line to the catch tank	F3	E1
204AR-02C	Release of airborne and toxic chemical exposure to worker, from the rail car due to over pressurization on trailer	Chemical reaction in trailer resulting in an over pressure condition, rupture disk fails	F2	E1
204AR-02D	Release of airborne and toxic chemical exposure to worker, from the rail car due to diesel fuel fire causing over pressurization on the trailer	Diesel fuel fire from the truck causing an over pressure condition in the tank trailer, rupture disk fails	F2	E1
204AR-02E	Release of radioactive material and toxic chemicals from trailer due to damage caused by trailer jack failure	Leak from tank trailer due to trailer jack failure	F3	E1
204AR-02F	Release of airborne contamination from unloader room due to overflowing catch tank	Priming line inadvertently fills up trailer and overflows trailer through its vent line to the catch tank	F3	E1
204AR-03A	Release of contamination and airborne release around the catch tank area, and chemical exposure in mechanical equipment room from catch tank or Sodium Nitrate tank due to failed tank	Sodium Nitrite tank #2 either fails or has a drain valve open and empties its contents to the floor drains in the mechanical equipment room	F3	E1
204AR-03B	Release of airborne around the catch tank area and chemical exposure in mechanical equipment room from the Na Nitrite tank due to overfilling and spilling to catch tank.	Sodium Nitrite Tank #2 overfilled and contents spilled into floor drains	F3	E1
204AR-03C	Release of airborne contamination in unloader room and chemical exposure to worker from overfilled catch tank due to tank failure.	Na Nitrite tank #2 tank failure (leak at bottom) filling the catch tank with potential for airborne	F2	E1
204AR-04A	Release of airborne and waterborne contamination from high level in the catch tank due to NaOH tank failure	Sodium Hydroxide Tank #3 failure or drain valve open which empties contents into the floor drains	F3	E1
204AR-04B	Release of airborne contamination around the catch tank area, and chemical exposure in mechanical equipment room from the NaOH and catch tanks due to overfilling of the NaOH tank	Sodium Hydroxide Tank #3 overfilled and contents spilled into the floor drains	F3	E1
204AR-04C	Release of chemicals to the mechanical equipment room environment from the Sodium Nitrite tank due to adding chemicals too quickly	Adding caustic chemicals too quickly to the tank - human error	F3	E1
204AR-04D	Release of NaOH particulates from the NaOH tank due to thermal stress to piping and eventual valve leakage of NaOH tank piping	Adding too much NaOH resulting in high temperatures	F3	E1
204AR-04E	Release of NaOH particulates from the NaOH tank due to damage to the chemical addition pump diaphragm	Adding steam heat to the coils resulting in high temperatures	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
204AR-04F	Release of airborne and waterborne contamination from high level in the catch tank due to NaOH tank failure	NaOH tank #3 failure (leak at bottom) filling the catch tank with potential for airborne	F2	E1
204AR-05A	Release of toxic chemicals to mechanical equipment room from chemical addition piping due to large leak in chemical addition piping	Large leak in the chemical addition piping during the transfer process	F2	E1
204AR-05B	Release of toxic chemicals and worker exposure from chemical addition piping due to over pressure of piping and subsequent damage	Over pressure while running chemical addition pump due to dead heading the pump	F3	E1
204AR-05C	Release of TK-102-AY liquid rad waste to the mechanical equipment room from TK-102-AY due to pumping and reversing flow fromTK-102-AY to the 204AR facility	Reverse flow of transfer piping fluid through the chemical addition piping in the mechanical equipment room	F2	E1
204AR-06A	Release of liquid radioactive waste to the unloader room or caustic chemicals to the mechanical equipment room from the priming water piping or transfer piping due to over pressurization of piping	Raw water supply pressure higher than normal	F3	E1
204AR-06B	Release of liquid radioactive waste to the unloader room or caustic chemicals to the mechanical equipment room from the priming water piping or transfer piping due to over pressurization of piping	Water hammer in priming piping from raw water supply	F3	E1
204AR-06C	Release of airborne contamination from unloader room due to overflowing catch tank	High flow through the priming line and transfer piping due to misalignment which fills up the rail car or trailer and overflows it to the catch tank	F3	E1
204AR-07B	Release of contaminated water to encasement outside of 204AR building and floor drains inside building from the transfer piping due to over pressure and leakage from raw water flush	Over pressure of raw water through transfer piping during post transfer flush	F3	E1
204AR-07C	Release of airborne and spread of contamination from the transfer piping due to leak from improper valve lineup	Leaking transfer piping due to transfer pump being dead headed (e.g., a valve in the transfer line is closed)	F2	E1
204AR-09E	Release of airborne contamination and increased radiation levels from catch tank due to blocked catch tank ventilation and over pressure of catch tank	A heat source is in the catch tank and the overflow and vent of the catch tank are blocked off or obstructed, resulting in a catch tank over pressure	F2	E1
204AR-09F	Release of airborne contamination and increased radiation levels from catch tank due to blocked catch tank ventilation and over pressure of catch tank	Ventilation to the catch tank is blocked off with heaters on, resulting in a catch tank high pressure	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
204AR-09H	Release of airborne and waterborne contamination in the unloader room from transfer piping and sump pit due to floating the catch tank and damaging piping	Rupture of raw water line piping above sump pit, causing sump pit to fill before catch tank	F2	E1
204AR-11A	Release of airborne radioactivity from unloader room due to loss of confinement caused by power failure	Loss of confinement due to power failure and total loss of ventilation fan	F3	E1
204AR-11B	Release of airborne radioactivity from unloader room due to loss of confinement caused by low ventilation flow	Loss of confinement due to low ventilation flow	F3	E1
204AR-11C	Release of airborne contamination from the unloader room due to failure of ventilation fan	Failure of EF-1 fan resulting in loss of confinement	F3	E1
204AR-11D	Release of airborne contamination from the unloader room due to blocked ventilation flow	No ventilation flow because of damper closed	F3	E1
204AR-11E	Release of airborne contamination from the unloader room due to plugged ventilation flow	No ventilation flow because of plugged HEPA filter	F3	E1
213 W-01	Release of radioactive and/or hazardous materials in 213 W work room due to error in repackaging or instrument repair	Handling error (forklift, spills, etc)	F3	E1
213 W-02	Release of radioactive and/or hazardous materials in 213 W work room due to error in repackaging or instrument repair	Failure of tools	F3	E1
213 W-03	Release of radioactive and/or toxic materials from 213 W due to fire in ventilation system	Electrical fault in ventilation or monitoring system	F2	E1
213 W-04	Release of radioactive and/or hazardous materials in 213 W work room due to fire	Human error (handling, smoking, hot tools)	F2	E1
213 W-05	Release of radioactive and/or hazardous materials in 213 W work room due to fire	Electrical or mechanical fault in tools, heating system, or hydraulics	F2	E1
213 W-06	Release of radioactive and/or toxic materials from 213 W due to fire in ventilation system	Lightning	F2	E1
213 W-07	Release of radioactive and/or toxic materials from 213 W due to structural failure of building	Earthquake	F1	E1
213 W-08	Release of radioactive and/or toxic materials from 213 W due to structural failure of building	High winds or tornado	F2	E1
213 W-09	Release of radioactive and/or toxic materials from 213 W due to structural failure of building	Loss of control of vehicle in vicinity of building	F3	E1
244AR-01.a.03	Radioactive aerosols released from tank headspace exit building through the inlet side of the canyon ventilation system due to mechanical failure	Failure of vessel venting with open vents to cell atmosphere and jetting operations occurring plus failure of exhaust fans	F3	E1
244AR-01.b.01	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to mechanical failure	Fan Failure with jetting occurring	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
244AR-01.b.02	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to mechanical failure	HEPA filter plugged with jetting occurring	F3	E1
244AR-01.b.03	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to human error	Damper closed with jetting occurring	F3	E1
244AR-01.c.01	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to vessel ventilation failure	Plugged vessel ventilation system filters	F3	E0
244AR-01.c.02	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to ventilation system failure	Vessel ventilation system fan shutdown or failure	F3	E0
244AR-01.c.03	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to human error	Valve closed in exhaust flow path	F3	E0
244AR-01.c.07	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to human error	All inlets to tank sealed with pumping of tank occurring	F2	E0
244AR-01.c.08	Release of radioactive aerosols from vessel headspace into canyon atmosphere due tank rupture	Plugged tank vents with gas evolution in tank contents	F3	E0
244AR-01.c.10	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to plugged ventilation system	Air purge operating with ventilation system plugged	F3	E0
244AR-01.c.11	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to ventilation system filter plugging	Air heaters off (steam supplied)	F3	E0
244AR-01.c.13	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to ventilation system filter plugging	Air heater off with significant heat generating waste in tanks	F2	E0
244AR-02.a.08	Release of radioactive liquid into cells due to jumper leak causing release of aerosols through cracks.	Jumper Leak (general)	F3	E0
244AR-02.a.09	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper Leak (general)	F3	E2
244AR-02.a.10	Release of radioactive liquid into cells due to jumper leak	Jumper (B plant to AY farm through cell) leak	F3	E0
244AR-02.a.11	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper (B plant to AY farm through cell) leak	F3	E2
244AR-02.a.12	Release of radioactive liquid into cells due to tank leak	Tank leak	F3	E0

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
244AR-03.a.03	Release of radioactive aerosols into cell due to collapse of tank	Complete sealing of all risers with vessel ventilation system piping blocked and pumping of tank occurring	F1	E1
244AR-03.a.06	Release of radioactive aerosols from tanks headspace due to steam pressure control failure for jetting system	Jetting operation with failure of jetting steam pressure regulation	F3	E1
244AR-03.a.07	Release of radioactive aerosols from tanks headspace due to air purge pressure control failure	Air purge with blocked ventilation and risers and failure of air pressure control	F2	E1
244AR-03.a.13	Release of radioactive aerosol being jetted from tank or sump due to overflow into sump	Jetting activities moving material from sump or another tank	F3	E0
244AR-03.a.14	Release of radioactive liquid being jetted from tank or sump due to overflow of tank	Inter-facility tank transfers	F3	E0
244AR-03.a.18	Release of radioactive aerosols from tank due to seismic event	Seismic event	F2	E0
244AR-04.a.01	Release of radioactive aerosols in sump due to disturbance of radioactive material by falling crane	Seismic event	F2	E0
244AR-07.a.01	Radioactive contamination contained in cells moved out of cell area into canyon area due to steam pressure control failure	Failure of PRV during jetting activities coupled with failure of ventilation systems	F2	E1
244AR-07.a.02	Radioactive contamination back flow into steam system due to steam supply failure	Steam supply failure	F3	E1
244AR-07.a.03	Radioactive contamination back flow into steam system due to compressed air failure	Steam supply failure and Air blow failure	F3	E1
244AR-07.a.04	Exposure to low concentrations of radioactive material	Excess water used in steam jet flush	F3	
2727W-01	Release of hazardous materials from 2727W due to sodium reactions with limited water	Water enters through roof vents when tanks not sealed	F2	E1
90D-01	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from internal chemical, thermal or radiolysis reactions; corrosion, freeze-thaw cycles	F3	E1
90D-02	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from external impact from handling error, forklift, handling equipment airborne missile from wind, seismic	F3	E1
90D-03	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from airborne missile from wind, or from a seismic event	F3	E1
90D-04	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to fire or explosion	Waste ignition from spontaneous combustion, incompatible wastes, heat from sun, waste handling or other human activities	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
90D-05	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to fire or explosion	External events cause waste ignition (range fires, lightning, seismic event, airplane crash)	F1	E1
90D-06	Release of radioactive and toxic aerosols/vapors from Intmediate Holding Area due to container breach	Container breach from internal chemical, thermal or radiolysis reactions; corrosion, freeze-thaw cycles	F3	E1
90D-07	Release of radioactive and toxic aerosols/vapors from Intermediate Holding Area due to container breach	Container breach from external impact from handling error, forklift, handling equipment airborne missile from wind, seismic	F3	E1
90D-08	Release of radioactive and toxic aerosols/vapors from Intermediate Holding Area due to container breach	Container breach from airborne missile from wind, or from a seismic event	F3	E1
90D-09	Release of radioactive and toxic aerosols/vapors from Intermediate Holding area due to fire or explosion	Waste ignition from spontaneous combustion, incompatible wastes, heat from sun, waste handling or other human activities	F2	E1
90D-10	Release of radioactive and toxic aerosols/vapors from Intermediate Holding Area due to fire or explosion	Natural Phenomena cause waste ignition (range fires, lightning, seismic event)	F1	E1
90D-11	Release of radioactive and toxic aerosols/vapors from waste transport vehicle due to loss of waste confinement	Failure to secure waste, vehicle accident, improper packaging, waste reactions	F3	E1
BND-01-I	Injury of worker from (lifting, bending, tool accidents; creates tripping hazard) due to bonding activities	Failure to follow safe work practices, equipment failures	NA	E1
BND-02-I	Injury of worker from ignition of combustibles due to preparation for bonding	Drilling holes for bonding attachments causes sparks which is a hazard	F2	E1
CCF-02	Radioactive and hazardous release from tanks due to short term loss of ventilation	Loss of offsite power	F3	E1
CCF-03	Degraded ventilation performance at 702 A due to condensed water vapors on HEPAs	Sustained loss of water supply (month)	F3	E0
CCF-04	Degraded ventilation performance at 702 A due to condensed water vapors on HEPAs	Sustained loss of steam supply	F3	E0
CCF-16	Subsurface releases of radioactive or hazardous material due to leaks in multiple tanks	Tanks, tank penetrations and tank components deteriorate due to corrosion	F3	E3
CDP-01	Release of radioactive contamination to soil surface from crib or ditch due to animal intrusion	Animal intrusion into crib or ditch	F3	E1
CDP-03	Release of radioactive contamination to soil surface from inactive pond due flooding in crib or ditch	Flooding	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CDP-05	Release of radioactive contamination to atmosphere from inactive pond due to high wind/tornado disturbing radioactive contamination in crib or ditch	High winds/tornados	F2	E1
CDP-06	Release of radioactive contamination to atmosphere from inactive pond due to high wind/tornado disturbing inactive pond	High winds/tornadoes	F3	E0
CDP-08	Release of airborne radioactive contamination from contaminated vegitation due to fire in weed growth on top of cribs or ditches	Range fire	F3	E1
COB-02	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid in place	F3	E2
COB-03	Release of radioactive and/or hazardous material from COB due to spray leak	Piping leak into COB due to chemical reaction degrading pipe, lid in place	F3	E2
COB-05a	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and lid removed	Inspection of COB	F3	E1
COB-05b	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and lid off during high wind	High wind with COB cover off	F3	E1
COB-05c	Release of radioactive and/or hazardous material from COB due to flooding	Flooding of COB due to rain/snow melt	F3	E1
COB-05d	Release of radioactive and/or hazardous material release from COB due to vehicle accident	Vehicle accident involving COB	F3	E1
COB-05e	Release of radioactive and/or hazardous material from COB due to seismic event	Seismic event	F3	E1
COB-05f	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and COB lid off	Human error leaving COB lid off	F3	E1
COB-06a	Release of radioactive and/or hazardous material from COB due to COB caisson pressurized	Weather heatup with HEPA filter plugged	F3	E1
COB-06b	Release of radioactive and/or hazardous material from COB due to COB caisson pressurized	Leak into COB with HEPA filter plugged	F3	E1
COB-07	Release of radioactive and/or hazardous material from COB due to reverse flow through COB from adjacent transfer line	COB setup is such that a transfer through the adjacent transfer line backflows through the 1" COB drain line into the primary transfer line that the COB is attached to	F2	E1
CRN-01	Release of radioactive and/or toxic materials from riser due to breach by crane movement	Human errors or failure to follow safe work practices	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-01-I	Release of radioactive and/or toxic materials from riser breach due to crane movement	Human errors or failure to follow safe work practices	F3	E1
CRN-02	Release of radioactive and/or toxic materials from riser due to breach by crane movement	Mechanical failures of crane (brakes, throttle)	F3	E1
CRN-02-I	Release of radioactive and/or toxic materials from riser breach due to crane movement	Mechanical failures of crane (brakes, throttle)	F2	E1
CRN-05-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Human error in positioning crane load	F3	E1
CRN-06-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Mechanical failure in positioning crane load causes crane fuel tank rupture and fire	F3	E1
CRN-07-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Crane hits electrical lines/supplies	F2	E1
CRN-08-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Lightning	F1	E1
CRN-14-I	Injury of worker from boom failure due to human error	Human error: improper load assembly, rigging, crane overloaded	NA	E1
CRN-15-I	Injury of worker from boom failure due to mechanical failure	Mechanical failure: corrosion, faulty materials	NA	E1
CRN-16-I	Injury of worker from boom failure due to high wind or seismic	High wind or seismic event	NA	E1
CRN-17	Release of radioactive or toxic material from tanks due to power failure from crane hitting power lines/supplies	Human error: improper load assembly, rigging, crane positioning	F3	E1
CRN-17-I	Injury of worker from electricity due to crane hitting powerlines/supplies	Human error: improper load assembly, rigging, crane positioning	NA	E1
CRN-24-I	Injury of worker from carbon monoxide accumulation in pits or temporary confinement (greenhouse, etc) due to crane motor exhaust	Failure to provide adequate ventilation,!Failure to sniff or improper sniffing	NA	E1
CRN-25-IA	Injury of worker from swinging load into personnel due to loss of lateral load control	Human error: improper load assembly, rigging, positioning error	NA	E1
CRN-26-IA	Injury of worker from swinging load into personnel due to loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	NA	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CRN-27-IA	Injury of worker from swinging load into personnel due to loss of lateral load control	High wind or seismic event	NA	E1
CVR-01	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Failure to monitor or improper monitoring	F3	E1
CVR-01-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to monitoring failure	Failure to monitor or improper monitoring	F3	E1
CVR-02	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Mechanical failure of equipment in pit (corrosion, leaks, etc)	F3	E1
CVR-02-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to mechanical failures	Mechanical failure of equipment in pit (corrosion, leaks, etc)	F3	E1
CVR-03	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Wind or dust devil	F3	E1
CVR-03-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to windy conditions	Wind or dust devil	F3	E1
CVR-04	Release (greater than expected) of radioactive or hazardous material from pit due to earthquake lifting cover blocks	Seismic event	F1	E1
CVR-04-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to seismic event	Seismic event	F2	E1
CVR-05-I	Release of radioactive or hazardous material from pit due to combustion or explosion of materials in pit	Failure to sniff or improper sniffing	F1	E1
CVR-06-I	Injury of worker from falling into pit due to missing or improperly installed fence possibly resulting in personnel exposure	Failure to erect fence or failure to erect securely	NA	E1
CVR-07-I	Injury of worker from falling into pit due to human error possibly resulting in personnel exposure	Person leans over fence too far	NA	E1
CVR-08-I	Injury of worker from falling into pit due to fence failure possibly resulting in personnel exposure	Fence failure	NA	E1
CVR-09-I	Injury of worker from falling into pit due to seismic event or high winds possibly resulting in personnel exposure	Seismic event or high wind/tornado	NA	E1
CVR-10-I	Injury of worker from asphyxiation due to pit atmosphere	Failure to sniff or improper sniffing	NA	E1
CVR-11-I	Injury of worker from asphyxiation due to fresh air supply faults	Fresh air supply faults	NA	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
CVR-12-I	Release of radioactive or hazardous material from pit upon lifting coverblocks due to incorrect spraying of fixative	Spraying of fixative (Soil Cement) causes spray of material out of pit	F3	E1
CVR-13-I	Release of radioactive or hazardous material from pit upon lifting coverblocks due to open nozzles or risers in pit	Open nozzles or risers in pit with radioactive or hazardous material inside	F3	E1
CVR-14-I	Injury of worker from biological hazards (spiders, snakes, etc.) due to open nozzles or risers in pit	Open nozzles or risers in pit with biological hazards (spiders, snakes, etc.) inside	F3	E1
DCN-01-I	Injury of worker from contamination or exposure of decon personnel due to failed PPE	Failure of PPE	NA	E1
DCN-02	Release of radioactive or toxic material outside immediate area from equipment removed from tank due to decontamination of equipment	Miss direction of cleaning spray (human error)	F3	E1
DCN-02-IA	Release of radioactive or toxic material outside immediate area from equipment being decontaminated due to spray misdirection	Miss direction of cleaning spray (mechanical failure of spray ring)	F2	E1
DCN-02-IB	Release of radioactive or toxic material outside immediate area from equipment being decontaminated due to spray misdirection	Miss direction of cleaning spray (mechanical failure of spray ring)	F2	E1
DCN-03	Decon personnel are contaminated, aerosol release outside immediate area	Seismic event	F1	E1
DCN-03-I	Decon personnel are contaminated, release of aerosol outside immediate area from equipment being decontaminated due to seismic event	Seismic event	F2	E1
DCN-04	Decon personnel are contaminated, aerosol release outside immediate area	Wind/Tornado	F2	E1
DCN-04-I	Decon personnel are contaminated, release of aerosol outside immediate area from equipment being decontaminated due to wind	Wind/Tornado	F2	E2
DCN-05-I	Injury of worker from contact with tools due to human error during decontamination activities	Human error	NA	E1
DCN-06-I	Injury of worker from higher than expected exposure due to unknown contamination	More contamination than expected	NA	E1
DCN-07-I	Injury of worker from exposure to asphyxiant due to PPE failure	PPE failure or absence in confined space	NA	E1
EE-02	Release of radioactive contaminants from tank farms due to external fires	Range fire	F3	E1
EE-03	Release of radioactive and hazardous materials from tanks due to loss of active ventilation	Dam collapse	F2	E1
EE-06	Release of radioactive and hazardous materials from tank farm due to external fires	On-site rail accident involving flammable materials	F2	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
EE-09	Surface flooding at tank farm	Water line breaks and causes flooding at tank farm	F3	E0
EE-10	Release of radioactive and hazardous materials from tanks due to loss of tank integrity	Water line breaks, saturates subsurface, and hydrostatic head causes tank to float	F0	E3
GRN-01-I	Injury of worker from (lifting, bending, tool accidents; creates tripping hazard) due to temporary confinement activities	Human errors	NA	E1
GRN-02-I	Injury of worker from (lifting, bending, trips and falls, tool operations) due to mechanical failures	Mechanical failure of equipment, tools	NA	E1
GRN-03-I	Injury of worker from asphyxiants in greenhouse due to collection of asphyxiants before removal	Human error	NA	E1
I-222S-1-CMP-A	Release of 222-S lab waste from transfer line due to leak from rapid corrosion caused by transfer of pH 1 solution.	Human Error - Failure to add NaOH	F3	E1
I-222S-2-FLW-A	Release (steam) of aerosols and particulates to the atmosphere due to reverse flowing steam into TK-102 which saturates the HEPAs.	Block valve inadvertently closed at tank farms AND Transfer via this line	F3	E1
I-242A-2-CMP-A	Release (potential for leak) to tank annulus (secondary confinement) caused by damage to feed tank due to overfilling of tank.	Valve failure or inadvertently opened valve	F3	E1
I-242A-4-FLW-A	Release of diluted high level waste to the ground through risers after unmitigated over filling of TK-AW-102 tank and annulus with condensate.	Tube rupture of raw water in condenser	F3	E1
I-242A-6-FLW-A	Release of diluted high level waste to the ground through risers after unmitigated over filling of TK-AW-102 tank and annulus with raw water.	Rupture of raw water line in condenser / pump room	F3	E1
I-242A-6-FLW-C	Release of contaminated aerosols to the 242-A evaporator building through the drain lines. Potential worker hazard.	Higher vacuum at evaporator than at tank farms	F3	E0
I-242A-7-CMP-A	Release of aerosols through the risers due to: Potential to get glycol into instrument air and pressure monitoring system. Potential for pressure gages to fail and inability for operators to detect tank pressurization.	Compressor head leaks AND AW tank farm air supplied from 242-A AND A tank pressurization event for a release	F1	E1
I-242A-7-PRS-A	Personnel hazard from ruptured compressed air line	Failure of compressor unloading switch due mechanical failure or incorrect setting during maintenance.	F2	E0

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-242S-1-PRS-A	Release of airborne contaminates through cracks due to over pressurization of 242-S building and contamination of control room where tank farm controls are located.	Exhaust fan failure.	F3	E1
I-242S-1-TMP-A	Release of contaminated water to the ground outside of the 242-S Evaporator due to unmitigated leak in the pump room from the fire protection system's frozen and ruptured line.	Low ambient temperature freezes and breaks pipe.	F3	E1
I-242S-2-FLW-B	Release of contaminated water to condenser room increasing contamination in the condenser room due to overfilling TK C-100.	Human Error - Incorrect valve line up	F2	E0
I-242S-4-FLW-B	Release of high level waste to the 242-S condenser room due to reverse flow from 102-SY tank caused by improper valve line up.	Human Error - Incorrect valve line up	F2	E0
I-242S-4-LEK-B	Release of contaminated water to the atmosphere due to spray leak at the condenser room, caused by corrosion in the pipe.	Corrosion in pipe line.	F3	E0
I-242S-4-LEK-C	Release of contaminated water to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	F2	E0
I-242S-5-CMP-A	Release of aerosols through the risers from various tanks due to loss pressure monitoring system caused by glycol in the instrument air and results in failure of pressure gages and inability of operators to detect tank pressurization.	Compressor head leaks AND A tank pressurization event to get a release	F2	E1
I-242S-5-CMP-B	Release of aerosols through the risers from various tanks due to loss of instrument air to SY pressure monitoring system caused by glycol damage desiccant which plugs the filter. If pressure gages fail, inability for operator to detect tank pressurization	Compressor head leaks AND A tank pressurization event to get a release	F2	E1
I-242S-5-CMP-C	Release of aerosols through the risers from various tanks due to desiccant plugging filter resulting in loss of instrument air to SY pressure monitoring system causing pressure gages to fail & inability for operators to detect tank pressurization.	Clogged filter cutting off air supply AND A tank pressurization event to get a release	F2	E1
I-242S-5-CMP-D	Release of aerosols through the risers from various tanks due to release of desiccant into instrument air which damages the pressures gages and causes the inability of operators to detect tank pressurization.	Blow out Filter damaging Instrument Air AND A tank pressurization event to get a release	F2	E1
I-242S-5-FLW-A	Release of aerosols through the risers from various tanks due to loss of instrument air to SY pressure monitoring system which causes the pressure gages to fail and the inability for operators to detect tank pressurization.	Compressor fails AND A tank pressurization event to get a release	F2	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-242S-5-FLW-B	Release of aerosols through the risers from various tanks due to loss of instrument air to SY pressure monitoring system which causes pressure gages to fail and the inability for operators to detect tank pressurization.	Block valve inadvertently closed AND A tank pressurization event to get a release	F2	E1
I-242S-5-FLW-C	Release of aerosols through the risers from various tanks due to loss of instrument air to SY pressure monitoring system which causes pressure gages to fail and the inability for operators to detect tank pressurization.	Filter plugged AND A tank pressurization event to get a release	F2	E1
I-242S-5-PRS-A	Personnel hazard due to rupture of compressed air line.	Human Error - Failure of compressor unloading switch due to incorrect setting during maintenance.	F2	E0
I-242T-3-FLW-A	Release of high level waste to the ground surface by overflowing the "new" diversion box caused by opened or leaking valve.	Block valve inadvertently opened or leaking	F3	E1
I-242T-4-FLW-A	Release of high level waste to the ground surface from overflowing the "new" diversion box due to failure of 242-T building and rupture of tanks in 242-T.	Catastrophic failure of the building due to aging effects	F3	E1
I-BPLANT-1-TMP-A	Release of aerosols from pressurizing receiver tank due to transfer of hot material from tank 24-1 to receiver tank.	Human Error - Sending steam to tank 24-1 AND Inadvertently transferring to tank farms	F2	E1
I-BPLANT-2-FLW-C	Release (ground surface) of low level waste from overflow of receiver tank to pits due to transfer of excessive low level waste from B Plant.	Human Error - Filling Tank 24-1 while transferring to tank farms AND Receiver tank at maximum administrative level.	F1	E1
I-PFP-1-LVL-A	Release (underground) of TRU mixed waste at DCRT pit due to: Potential to send steam vapor to 244-TX-DCRT. Potential for thermal expansion to damage transfer pipe. Potential for leak to encasement pipe which drains to DCRT pit.	Human Error - Failing to stop transfer to 244-TX when tank D-5 is empty.	F3	E1
I-PFP-2-TMP-A	Release of TRU mixed waste at DCRT pit due to: Potential to send steam vapor to 244-TX-DCRT due to failure of steam reducer which sends higher pressure steam to steam jet and gasses it out. Potential for thermal expansion to damage transfer pipe. Potentia	Failure of steam reducer causes spray leak	F2	E1
I-PFP-3-FLW-C	Release of TRU mixed waste from 244-TX overfilling due to transferring waste from PFP tanks D-7 or D-8 to D-5 while transferring from D-5 to 244-TX.	Transferring from D-7 or D-8 to D-5 while transferring from D-5 to 244-TX	F3	E1
I-PUREX-1-TMP-A	Release from 105AW through cracks in the cover block due to pressurizing 105AW from addition of hot waste to the tank.	Human Error - Adding caustic (NaOH) to waste or transferring to U-3 via a steam jet AND Transferring from U-3 to 105AW before the waste cools	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
I-PUREX-2-PRS-B	Release of aerosols through cracks in the cover block due to pressurizing the receiver tank from an extended air purge of the transfer line.	Extended air purge after transfer (Mechanical Failure)	F3	E1
I-PUREX-2-PRS-C	Personnel exposure due to vacuum pulling radioactive material back to operating gallery . Worker hazard at PUREX (Dose concern).	Failure to air purge line after transfer (Mechanical Failure)	F2	E0
I-PUREX-3-TMP-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from addition of hot waste to the tank.	Human Error - Adding caustic (NaOH) to waste or transferring to U-3 via a steam jet AND Transferring from U-3 to 105AW before the waste cools	F3	E1
I-PUREX-4-PRS-B	Release of aerosols through cracks in the cover block due to pressurizing the receiver tank from an extended air purge of the transfer line.	Extended air purge after transfer (Mechanical Failure)	F3	E1
I-PUREX-4-PRS-C	Personnel exposure due to vacuum to pulling radioactive material back to operating gallery. Worker hazard at Purex (Dose concern).	Failure to air purge line after transfer (Mechanical Failure)	F2	E0
I-PUREX-5-FLW-A	Release of aerosols through cracks in cover block due to pressurizing receiver tank caused by transferring waste with steam which heats the waste.	Multiple deactivation locks removed and valves opened or multiple valves leaking.	F3	E1
I-PUREX-5-FLW-B	Release of aerosols from receiver tank due to fire caused by transfer of organic from PUREX.	Organic material present in R-8	F2	E1
I-PUREX-6-FLW-B	Release (ground surface) of liquid waste in catch tank 302A diluted with flush water due to overfilling 302A and the pump pit and/or the diversion box due to improper valve line up of flush water.	Multiple flush water block valves inadvertently opened or leaking	F2	E1
I-PUREX-6-FLW-C	Release of high level tank waste due to overfilling tank caused by overfilling catch tank 302A which backs up into the diversion box and flows into an open nozzle which directs the flow to other tanks in the tank farm.	Multiple flush water block valves inadvertently opened or leaking	F2	E1
I-TPLANT-1-TMP-A	Release of aerosols from pressurizing receiver tank due to transfer of hot material from tank 15-1 to receiver tank.	Human Error - Sending steam to tank 15-1 AND Inadvertently transferring to tank farms	F2	E1
I-TPLANT-2-FLW-B	Release of low level waste from overflow of receiver tank to pits due to transfer of excessive low level waste from T Plant.	Human Error - Filling Tank 15-1 while transferring to tank farms AND Receiver tank at maximum administrative level.	F1	E1
I-UPLANT-1-RAN-A	Release of contaminated rain water to the ground surface from overfilling catch tank and diversion box due to severe rain.	Severe Rain	F2	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
ITK-01	Radioactive and/or hazardous material release from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Chemical/thermal reaction of materials in equipment/waste	F2	E1
ITK-01-I	Release of radioactive and/or hazardous material from point of in-facility access due to chemical/thermal reaction (non-fire, non-explosion)	Chemical/thermal reaction of materials in equipment/waste	F3	E1
ITK-02	Radioactive and/or hazardous material release from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Pressurized equipment fails in tank and increases tank pressure	F2	E1
ITK-02-I	Release of radioactive and/or hazardous material from point of in-facility access due to equipment pressurization release event (non-fire, non-explosion)	Pressurized equipment fails in facility and increases facility pressure	F1	E1
ITK-03	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Contaminated equipment removed or reused	F3	E1
ITK-03-I	Release of radioactive and/or hazardous material from point of in-facility access due to equipment removal (non-fire, non-explosion)	Contaminated equipment removed or reused	F3	E1
ITK-04	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to earthquake or high wind with open access	Seismic event or high wind when access open	F3	E1
ITK-04-I	Release of radioactive and/or hazardous material from point of in-facility access due to seismic event or high wind (non-fire, non-explosion)	Seismic event or high wind when access open	F2	E1
ITK-07	Radioactive and/or hazardous material release from tank below grade (non-fire, non-explosion) due to intrusive activity	Dropped equipment in tank from human error or equipment failures (also see crane operations) Penetration of tank with linear-force, high pressure, or rotational equipment from human error or equipment failure	F3	E3
ITK-07-IA	Release of radioactive and/or hazardous material from facility below grade due to breach of facility confinement (non-fire, non-explosion)	Dropped equipment in facility from human error or equipment failures (also see crane operations)!Penetration of facility confinement with linear-force, high pressure, or rotational equipment from human error or equipment failure	F2	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
ITK-07-IB	Release of radioactive and/or hazardous material from facility at surface due to breach of facility confinement (non-fire, non-explosion)	Dropped equipment in facility from human error or equipment failures (also see crane operations)!Penetration of facility confinement with linear-force, high pressure, or rotational equipment from human error or equipment failure	F2	E2
ITK-FR-01	Release of radioactive or hazardous material from flex receiver due to flushing with insufficient drainage	Riser not drained correctly or drain clogged causing plugging of riser	F3	E1
ITK-FR-02	Release of radioactive or hazardous material from flex receiver due to equipment jam in riser and non-procedural efforts to dislodge	Equipment becomes lodged in riser upon retrieval and non-procedural efforts to remove provide release path for tank material and/or flush water	F3	E1
ITK-FR-05	Release of radioactive or hazardous material from flex receiver due to structural failure	Human error tears flex receiver bag	F3	E1
ITK-FR-06	Release of radioactive or hazardous material from flex receiver due to structural failure	Equipment failure/misalignment tears flex receiver bag (crane operation, hydraulic jack stand)	F3	E1
ITK-FR-07	Release of radioactive or hazardous material from flex receiver due to structural failure	Structural degradation	F3	E1
ITK-FR-09	Release of radioactive or hazardous material from flex receiver due to mechanical equipment failure	Failure of automatic cinch or inappropriate tightening of cables + Condition goes unnoticed and receiver is sheared	F2	E1
ITK-FR-10	Release of radioactive or hazardous material from flex receiver due to mechanical equipment failure	Failure of cinching cables causing loss of containment after receiver is sheared	F2	E1
ITK-FR-11	Release or radioactive or hazardous material from flex receiver due to loss of hydraulics	Hydraulic power is lost while bag is being sealed resulting in failure of seal and leak path from bag	F1	E1
ITK-FR-12	Release or radioactive or hazardous material from flex receiver due to loss of hydraulics	Mechanical failure or inadequate operating pressure of hydraulics while bag is being sealed resulting in failure of seal and leak path from bag	F1	E1
ITK-FR-14	Release of radioactive or hazardous material from flex receiver due to leak from flanges	Non-acceptable torque on bolts connecting bellows - torque too low not enough pressure for adequate seal, to high destroys seal material	F3	E1
ITK-FR-15	Release of radioactive or hazardous material from flex receiver due to errors in installation	Incorrect installation of receiver provides release path (misalignment of bellows)	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
ITK-FR-16	Release of radioactive or hazardous material from flex receiver due to containment failure during transfer	Failure of cinched end/receiver material and secondary containment bag during transfer of equipment to trailer	F2	E1
ITK-FR-17	Release of radioactive or hazardous material from flex receiver due to leak from bag	Flaw in bag construction provides leak path for material	F2	E1
ITK-FR-18	Release of radioactive or hazardous material from flex receiver due to damage from operation of hydraulic jacks	Hydraulic jacks on assembly stand are operated while assembly is bolted to flange damaging flex receiver or riser creating release path	F3	E1
ITK-FR-20	Release of radioactive or hazardous material from flex receiver due to wrong bag being used	Containment bag is too short to hold equipment being withdrawn from tank, condition goes unnoticed until containment is lost	F3	E1
ITK-FR-21	Release of radioactive or hazardous material from flex receiver due to operation in extreme weather	Operation in cold weather compromises strength of flex receiver, equipment breaks providing release path	F3	E1
ITK-FR-23	Release of radioactive or hazardous material from flex receiver due to equipment failure	Plexiglass window on receiver breaks causing release path	F3	E1
ITK-FR-24	Release of radioactive aerosols from flex receiver due to cutter misoperation damaging metal housing	Cutter cuts through containment (metal housing), venturi effect spread aerolized waste outside of containment (Cutter not turned off in time, water pressure/flow too high, or cutting spread increased because of abrasive characteristics)	F2	E0
ITK-FR-25	Release of radioactive or hazardous vapors due to pump or water supply failure	Loss of cutting water due to pump or water supply failure provides open pathway from tank through silica hopper	F2	E0
ITK-FR-26	Release of radioactive or hazardous material from flex receiver due to leak from bag	Equipment mispositioned in receiver bag creating inappropriate seal and leak	F3	E1
ITK-FR-27	Release of radioactive or hazardous material from flex receiver due to containment breach during transfer	Unable to lock lifting ring onto skid + Equipment falls off skid ripping bag and creating a release path	F2	E1
ITK-FR-28	Release of radioactive or hazardous material from flex receiver due to containment breach during transfer	Receiver trailer falls over with bagged equipment attached ripping bag and creating release path	F3	E1
NP-01	Radioactive and hazardous material release from tanks and ventilation system due to loss of electric power	Lightning strikes power distribution system	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
NP-06	Radioactive and hazardous material releases from tanks, nearby ground surfaces, and ventilation systems due to above ground disturbances	High wind	F3	E1
NP-09	Radioactive and hazardous material releases from tanks due to seismic event	Earthquake results in tank leaks or below grade tank ruptures	F1	E3
NP-10	Radioactive and hazardous material releases from tanks due to loss of power to ventilation systems	Ash fall from volcanic activity	F2	E1
NP-12	Radioactive and hazardous material releases from tanks due to ventilation system failures	Dust storms/dust devils	F3	E1
NP-14	Radioactive and hazardous material releases from tanks due to loss of power to ventilation systems	Severe Hail	F3	E1
OGT-FLOW1-01	Personnel exposure to radioactive or hazardous material in the primary pipe due to pump failure	Pump failure AND Material settles in line (crystallization) AND Plugged line prohibiting transfer/waste is sitting in line and creates increased exposure to personnel	F3	E0
OGT-FLOW2-01A	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Incorrect pump installed creates excessive flow and isolation valve closed on secondary pipe Erosion of EPDM AND Pressurization of secondary pipe causing leaks from flanges gasket within concrete shield	F2	E2
OGT-FLOW2-03A	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Installation of incorrect pump AND Failure of inner pipe AND Isolation valves closed on secondary pipe drains causing leak from failed welds on flange within the concrete shield	F1	E2
OGT-INTEG3-01	Release of radioactive or hazardous material from overflow of pit due to leak caused by loss of primary pipe integrity from aging	Primary pipe failure due to radiation/chemical age related damage Leak of primary pipe and flow to pit from secondary pipe drains when pipe drains are in open position with pipe drains open AND Insufficient drainage from pit	F1	E1
OGT-OPS1-01	Release of radioactive or hazardous material from the primary pipe due to line crushing from equipment drop	Drop shield blocks on transfer line during disassembly after pumping complete Potential to break primary and secondary line	F3	E1
OGT-SPEC1-01	Personnel exposure to radioactive or hazardous material in the primary pipe due to loss of electrical supply	Loss of flow leading to line plug and the need to remove/replace, unclog line	F3	E0

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
OGT-TEMP1-01	Personnel exposure to radioactive or hazardous material from the primary pipe due leak caused by low ambient temperature	Plugging of pipe due to crystallization or due to freezing for very low temperature	F1	E0
RAD-01-I	Injury of worker from exposure to radioactive materials due to failure to monitor radiation	Failure to monitor	NA	E1
RAD-02-I	Injury of worker from exposure to radioactive materials due to radiation monitoring failure	Failure of monitoring instrument	NA	E1
RAD-03-I	Injury of worker from exposure to radioactive materials due to radiation monitoring failure	Improper calibration of monitoring instrument	NA	E1
RSR-01	Release of radioactive and/or toxic material upon opening of riser due to human error	Human error: improper contamination control, failure to monitor (rad or sniff), improper monitoring	F3	E1
RSR-01-I	Release of radioactive and/or toxic material from the vapor space due to opening of riser	Human error: improper contamination control, failure to monitor (rad or sniff), improper monitoring	F3	E1
RSR-02-I	Injury of worker from exposure to asbestos from gasket materials during access to riser due to failure to follow procedures	Failure to follow asbestos procedures	NA	E1
RSR-03-I	Injury of worker from exposure to asbestos from gasket materials during access to riser due to failure of PPE or fresh air supply	Failure of mask or fresh air (if appropriate)	NA	E1
RSR-04-I	Injury of worker from exposure to direct radiation exposure from open riser due to failure to follow procedures	Failure to follow procedures, failure to monitor or improper monitoring	NA	E1
RSR-05-IA	Facility confinement breach from dropped equipment (tools, mirrors) into facility	Failure to attach lanyard or other position limiting device!Failure of lanyard or device	F2	E1
RSR-05-IB	Facility confinement breach from dropped equipment (tools, mirrors) into facility	Failure to attach lanyard or other position limiting device!Failure of lanyard or device	F2	E2
RSR-08-I	Injury of worker from falling into facility due to large access opening and human error	Human error	NA	E1
SFF-01	Release of radioactive and/or toxic materials during sniff sampling due to human error or instrument failure	Improper sniffing technique or instrument failure, failure to perform radiation monitoring, improper monitoring, or instrument failure	F3	E1
SFF-01-I	Injury of worker from exposure to toxic materials due to sniff sampling failure	Improper sniffing technique or instrument failure	NA	E1
VEH-04-I	Injury of worker from radiation exposure from casks during transport due to inappropriate ALARA practices	Driver receives unexpected exposure or personnel work near the cask transport vehicle	NA	E1
VEH-05-I	Injury of worker from impact with electrical power pole due to vehicle accident	Loss of control of vehicle or lack of attention to driving	NA	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
VEH-06-I	Injury of worker from being pinched or crushed between vehicle and solid structure due to inattention to situation	Vehicle exerts pressure on personnel located between the vehicle and solid structure	NA	E1
VSU-01	Release of residual contamination and/or hazardous material from VSU due to VSU lid being left off	VSU lid is left off due to human error, wind blows	F3	E1
VSU-02	Release of residual contamination and/or hazardous material from VSU due to VSU lid being left off	VSU lid is left off due to human error, rain/snow melt seeps out bottom of VSU	F3	E1
VSU-03	Release of residual contamination and/or hazardous material from VSU due to VSU wall degradation	VSU wall degradation over time	F3	E1
VSU-04	Release of residual contamination and/or hazardous material from VSU due to internal VSU pressurization	Covered VSU pressurizes due to ambient temperature heat-up	F3	E1
XS-01-FLOW04	Release of liquid radioactive waste due to overflow from 244-TX DCRT to annulus	Human error (leaving water on after extended flush) causes overflow to annulus	F2	E1
XS-01-PRES02	Release of liquid radioactive waste from transfer pipe due to damaged saltwell pump	Leak from pump or seal from various causes	F3	E2
XS-01-TEMP02	Release of steam-aerosol from transfer piping in pump pit due to steam hammer and resulting pipe damage	Extended recirculation and consequential heating of saltwell liquid with sudden opening of valve when cover block is in place	F3	E1
XS-02-FLOW01	Release of headspace aerosols from 244-TX DCRT into PFP due to jumper misalignment	Jumper misalignment allowing PFP steam jet or ventilation system to pull vapors DCRT	F2	E1
XS-02-FLOW06	Release of liquid radioactive waste from DCRT due to overflowing of PFP sending tank (in facility)	Reverse flow caused by jumper misalignment	F3	E1
XS-03-LEVE	Release of radioactive liquids from DCRT "annulus" (Vault) due to DCRT leak	Corrosion or structural failure of DCRT or associated piping	F3	E2
XS-03-PRES01	Release of toxic vapors from DCRT due to increased concentrations in DCRT atmosphere	Tank isolated from forced ventilation with gas evolution	F3	E1
XS-03-PRES01A	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow due to failure of ventilation fans causes positive pressure in tank	F3	E1
XS-03-PRES02	Release of radioactive aerosols from DCRT headspace due to positive pressure	Dampers inadvertently closed causing positive pressure in tank	F3	E1
XS-03-PRES03	Release of radioactive aerosols from DCRT headspace due to positive pressure in DCRT	Ductwork damage due to external event causes positive pressure in DCRT	F3	E1
XS-03-PRES04	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of power causes positive pressure in tank	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-03-TEMP04	Release of radioactive aerosols from 244-TX DCRT due to fire	Burning of flammable gas in DCRT	F1	E1
XS-03-TEMP05	Release of radioactive aerosols from DCRT headspace due to positive pressure	Excessive agitation-pumping causes positive pressure and generates aerosols	F3	E1
XS-03-TEMP06	Release of toxic vapors from DCRT headspace due to positive pressure in DCRT	Excessive agitation-pumping causes positive pressure	F3	E1
XS-03-TEMP07	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow due to HEPA filter blockage in cold weather causes positive pressure in tank	F3	E1
XS-03-TEMP08	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow plus high heat waste causes positive pressure in tank	F3	E1
XS-06-FLOW06	Release of radioactive aerosols from DCRT annulus due to a spill of radioactive liquid	Overfilling DCRT due to a misrouting causes spill into DCRT annulus	F3	E1
XS-12-FLOW01	Release of toxic gas from diversion box due to accumulation of toxic vapors from catch tank	Chemical reaction of catch tank material with backflow of vapors via diversion box drain line	F3	E1
XS-12-FLOW04	Release of toxic gas from diversion box due to accumulation of toxic vapors from catch tank	Radiolysis of catch tank material with backflow of vapors via diversion box drain line	F3	E1
XS-12-FLOW06	Release of radioactive waste to the soil from diversion box drain due to a spill of radioactive liquid into 241-U-152 diversion box	Leak of diversion box drain line upstream of catch tank	F3	E2
XS-20-FLOW02	Release of radioactive aerosols from T-Plant tank due to chemical reaction	Transfer of incompatible waste to T-Plant due to improper valve lineup	F2	E2
XS-20-FLOW06	Release of radioactive aerosols from T-Plant tank due to positive pressure	Chemical reaction of 244-s material with contents of T-Plant Tank due to misrouting causes positive pressure in tank	F2	E2
XS-20-FLOW07	Release of toxic vapors from T-Plant due to chemical reaction with incompatible material in 244-S DCRT	Mixing contents of 244-S with contents of T-Plant tank due to misrouting causes chemical reaction	F2	E2
XS-26-PRES01A 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Blockage of exhaust path causes pressure in tank	F3	E1
XS-26-PRES02A 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Failure of ventilation fans causes pressure in tank	F3	E1
XS-26-PRES03	Release of radioactive aerosols from TK-102-SY due to positive pressure	Use of hot water to decontaminate equipment in tank atmosphere--generate aerosols and pressurizes the tank	F3	E1
XS-26-PRES03 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Loss of power to ventilation system causes positive pressure in tank	F3	E1

Table 3.4-3. Hazardous Conditions With Potential Significant Worker Consequences (S1).

ID	Hazardous Condition	Cause	Freq NC	Env Cons
XS-26-TEMP 102AW-08-TEMP	Release of radioactive aerosols from 102-SY annulus due to leak of tank contents to annulus	Exceeding design temperature of tank due to high heat waste and loss of primary ventilation system	F1	E1
XS-26-TEMP02	Release of radioactive aerosols from 102-SY annulus due to leak of tank contents to annulus	Exceeding design temperature of tank due to failure of annulus ventilation	F1	E1
XS-41B-LEVE02	Release of toxic gas from vent station access pit via valve operator seals due to liquid accumulation in vent station nozzle pit	Overflow of vent station catch tank into nozzle pit causes tank gas accumulation	F3	E1
XS-41B-LEVE04	Release of radioactive liquid from vent station access pit via valve operator seals due to liquid accumulation in vent station nozzle pit	Overflow of vent station catch tank into nozzle pit	F3	E1
XS-41C-LEVE02	Release of radioactive aerosols from catch tank pit due to presence of liquid from collapse of catch tank	Intrusion plus plugged drain creating external load on catch tank	F1	E1
XS-41C-LEVE03	Release of toxic gas from vent station catch tank pit due to presence of liquid waste in pit	Backflow from cross-site piping encasement leak causes tank gas accumulation	F3	E1

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Tables 3.4-4 and 3.4-5

Table 3.4-4. Hazardous Conditions With Potential Occupational Safety Consequences (OCC).

ID	Hazardous Condition	Cause
102AW-02-PRES.01 XS-26-PRES.01	Personnel injured by projectile debris from catastrophic fan failure	Loss of fan due to high pressure causing fan to walk into another object and become airborne
102AW-04-STRU.01	Personnel injured by falling equipment	Equipment drop during crane work
107AN-01-TEMP.01	Thermal hazard to personnel	Caustic in tank heated too hot at source
244AR-05.a.01	Weak roof structure permits person to fall through roof	Aging (roof)
244AR-PH01	Water hammer during setup for jetting	Condensate in the lines coming into contact with steam
244AR-PH02	Asphyxiation due to entry into confined space	Lack of oxygen due to corrosion, decomposition or fire/explosion
244AR-PH04	Person falls from elevated surface	Roof weakness (more than 2 stories high)
244AR-PH05	Person falls from elevated surface	Crane maintenance activities
244AR-PH06	Person falls from elevated surface	Walking over weak filter vault roof
244AR-PH07	Person falls from elevated surface	Ladder climbing
244AR-PH08	Person comes in contact with rotating equipment	Maintenance work on rotating equipment
244AR-PH09	Person comes in contact with rotating equipment	Process operations activities
244AR-PH10	Person injured by failure of equipment during over speed event	Equipment malfunction
244AR-PH11	Personnel injury from contact with energized circuits or faulted equipment	Insulation failure
244AR-PH12	Personnel injury from contact with energized circuits or faulted equipment	Maintenance activities
244AR-PH13	Personnel injury from contact with energized circuits or faulted equipment	Mechanical damage to insulation
244AR-PH14	Electrical fire	Insulation failure
244AR-PH15	Electrical fire	Overload conditions, breaker failure, sparking in flammable atmosphere
244AR-PH16	Personnel exposure to insulation or construction materials containing asbestos	Disturbance from: Fire, maintenance, wind, aging, water intrusion
244AR-PH17	Personnel exposed to toxic or corrosive materials	Maintenance and operations activities combined with leakage such as pipe failure, pump failure, or valve packing leaks
244AR-PH18	Personnel injured by high pressure gas bottles becoming projectiles	Malfunction of bottle regulator
244AR-PH19	Personnel injured by high pressure gas bottles becoming projectiles	Improper storage and transport
BND-01	Industrial hazards (lifting, bending, tool accidents; creates tripping hazard)	Failure to follow safe work practices, Equipment failures

Table 3.4-4. Hazardous Conditions With Potential Occupational Safety Consequences (OCC).

ID	Hazardous Condition	Cause
BND-01-I	Injury of worker from (lifting, bending, tool accidents; creates tripping hazard) due to bonding activities	Failure to follow safe work practices, equipment failures
BND-02-I	Injury of worker from ignition of combustibles due to preparation for bonding	Drilling holes for bonding attachments causes sparks which is a hazard
CCF-14	Personnel illness or asphyxiation due to air supply faults	SCBA air supply of poor quality
CCF-15	Degraded operations, increased down time, possible personnel injury due to supply of inferior parts	Faulty parts or equipment supplied (e.g. o-rings, seals, electronics, HEPAs, pressure regulators, etc)
CDP-09	Driver error during drive-by causes injury to personnel	Driver error
CRN-14-I	Injury of worker from boom failure due to human error	Human error: improper load assembly, rigging, crane overloaded
CRN-15-I	Injury of worker from boom failure due to mechanical failure	Mechanical failure: corrosion, faulty materials
CRN-16-I	Injury of worker from boom failure due to high wind or seismic	High wind or seismic event
CRN-17-I	Injury of worker from electricity due to crane hitting powerlines/supplies	Human error: improper load assembly, rigging, crane positioning
CRN-24	Carbon monoxide from crane accumulates in pits or temporary confinement (greenhouse, etc)	Oxygen deficient atmosphere and failure to provide adequate ventilation, Failure to sniff or improper sniffing
CRN-24-I	Injury of worker from carbon monoxide accumulation in pits or temporary confinement (greenhouse, etc) due to crane motor exhaust	Failure to provide adequate ventilation,!Failure to sniff or improper sniffing
CRN-25	Loss of lateral load control, swinging load into personnel or equipment	Human error: improper load assembly, rigging, positioning error
CRN-25-IA	Injury of worker from swinging load into personnel due to loss of lateral load control	Human error: improper load assembly, rigging, positioning error
CRN-26	Loss of lateral load control, swinging load into personnel or equipment	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil
CRN-26-IA	Injury of worker from swinging load into personnel due to loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil
CRN-27	Loss of lateral load control, swinging load into personnel or equipment	High wind or seismic event
CVR-10	Person(s) asphyxiated	Oxygen deficient atmosphere and failure to sniff or improper sniffing
CVR-10-I	Injury of worker from asphyxiation due to pit atmosphere	Failure to sniff or improper sniffing
CVR-11	Person(s) asphyxiated	Oxygen deficient atmosphere and fresh air supply faults

Table 3.4-4. Hazardous Conditions With Potential Occupational Safety Consequences (OCC).

ID	Hazardous Condition	Cause
CVR-11-I	Injury of worker from asphyxiation due to fresh air supply faults	Fresh air supply faults
CVR-14-I	Injury of worker from biological hazards (spiders, snakes, etc.) due to open nozzles or risers in pit	Open nozzles or risers in pit with biological hazards (spiders, snakes, etc.) inside
DCN-05	Personnel hurt by contact with tools	Human error
DCN-05-I	Injury of worker from contact with tools due to human error during decontamination activities	Human error
DCN-07	Personnel exposed to asphyxiant	Oxygen deficient atmosphere and PPE failure or absence in confined space
DCN-07-I	Injury of worker from exposure to asphyxiant due to PPE failure	PPE failure or absence in confined space
EE-12	Washout of soils surrounding a transfer pipe	Water main to evaporator or steam plant breaks
EE-13	Steam jet impinges on equipment supporting multiple tanks	Steam line break
EE-14	Electrocution	Excavation into power source
EE-15	Washout of soils resulting in sink hole due to excavation error	Excavation into water line
GRN-01	Industrial hazards (lifting, bending, trips and falls, tool operations)	Human errors
GRN-01-I	Injury of worker from (lifting, bending, tool accidents; creates tripping hazard) due to temporary confinement activities	Human errors
GRN-02	Industrial hazards (lifting, bending, trips and falls, tool operations)	Mechanical failure of equipment, tools
GRN-02-I	Injury of worker from (lifting, bending, trips and falls, tool operations) due to mechanical failures	Mechanical failure of equipment, tools
GRN-03-I	Injury of worker from asphyxiants in greenhouse due to collection of asphyxiants before removal	Human error
I-242A-2-CMP-A	Release (potential for leak) to tank annulus (secondary confinement) caused by damage to feed tank due to overfilling of tank.	Valve failure or inadvertently opened valve
I-242A-7-PRS-A	Personnel hazard from ruptured compressed air line	Failure of compressor unloading switch due mechanical failure or incorrect setting during maintenance.
I-242S-5-PRS-A	Personnel hazard due to rupture of compressed air line.	Human Error - Failure of compressor unloading switch due to incorrect setting during maintenance.
RAD-02-I	Injury of worker from exposure to radioactive materials due to radiation monitoring failure	Failure of monitoring instrument
RAD-03-I	Injury of worker from exposure to radioactive materials due to radiation monitoring failure	Improper calibration of monitoring instrument

Table 3.4-4. Hazardous Conditions With Potential Occupational Safety Consequences (OCC).

ID	Hazardous Condition	Cause
RSR-02	Asbestos hazard from gasket materials during access to riser	Failure to follow asbestos procedures
RSR-03	Asbestos hazard from gasket materials during access to riser	Failure of mask or fresh air (if appropriate)
RSR-08-I	Injury of worker from falling into facility due to large access opening and human error	Human error
SFF-01-I	Injury of worker from exposure to toxic materials due to sniff sampling failure	Improper sniffing technique or instrument failure
VEH-05	Vehicle impact with electrical power pole	Loss of control of vehicle or lack of attention to driving
VEH-05-I	Injury of worker from impact with electrical power pole due to vehicle accident	Loss of control of vehicle or lack of attention to driving
VEH-06	Personnel are pinched or crushed between vehicle and solid structure	Vehicle is about to move exerting pressure on personnel to solid structure
VEH-06-I	Injury of worker from being pinched or crushed between vehicle and solid structure due to inattention to situation	Vehicle exerts pressure on personnel located between the vehicle and solid structure
VSU-05	Tripping hazard	Exposure above ground level
VSU-06	Falling hazard	VSU without a lid and not capped

Table 3.4-5. Hazardous Conditions With Potential Radiation Exposure Consequences (RP).

ID	Hazardous Condition	Cause
102AW-04-PRES.01	Personnel exposure higher than expected	Removal of cover block and pressure release due to loss of fan.
102AW-13-FLOW.01	Personnel exposure due to radiation doses from contaminated pipes	Multiple valving errors and failure of backflow prevention causing reverse flow from valve pit to flush pit
114SX-06.b	Personnel exposed to ionizing radiation due to lack of shielding	Inadvertent removal of tank overburden (gravel)
244AR-06.a.02	High activity radioactive material exposes person to ionizing radiation	Tank ventilation heater coil failure
244AR-07.a.04	Exposure to low concentrations of radioactive material	Excess water used in steam jet flush
244AR-PH03	Contamination of personnel with radioactive material	Radioactive contamination in canyon or sample gallery being disturbed by personnel entry
CRN-14	Boom failure leads to worker injury or exposure	Human error: improper load assembly, rigging, crane overloaded
CRN-15	Boom failure leads to worker injury or exposure	Mechanical failure: corrosion, faulty materials
CRN-16	Boom failure leads to worker injury or exposure	High wind or seismic event
CVR-06	Person falls in pit sustaining injury or exposed to surface radiation in pit..	Failure to erect fence or failure to erect securely
CVR-07	Person falls in pit sustaining injury or exposed to surface radiation in pit..	Person leans over fence too far
CVR-08	Person falls in pit sustaining injury or exposed to surface radiation in pit..	Fence failure
CVR-09	Person falls in pit sustaining injury or exposed to radiation.	Seismic event or high wind/tornado
DCN-01	Decon personnel are contaminated or exposed	Failure of PPE
DCN-01-I	Injury of worker from contamination or exposure of decon personnel due to failed PPE	Failure of PPE
DCN-06	Personnel exposure higher than expected	More contamination than expected
DCN-06-I	Injury of worker from higher than expected exposure due to unknown contamination	More contamination than expected
I-PUREX-2-PRS-C	Personnel exposure due to vacuum pulling radioactive material back to operating gallery . Worker hazard at PUREX (Dose concern).	Failure to air purge line after transfer (Mechanical Failure)
I-PUREX-4-PRS-C	Personnel exposure due to vacuum to pulling radioactive material back to operating gallery. Worker hazard at Purex (Dose concern).	Failure to air purge line after transfer (Mechanical Failure)

Table 3.4-5. Hazardous Conditions With Potential Radiation Exposure Consequences (RP).

ID	Hazardous Condition	Cause
OGT-FLOW1-01	Personnel exposure to radioactive or hazardous material in the primary pipe due to pump failure	Pump failure AND Material settles in line (crystallization) AND Plugged line prohibiting transfer/waste is sitting in line and creates increased exposure to personnel
OGT-SPEC1-01	Personnel exposure to radioactive or hazardous material in the primary pipe due to loss of electrical supply	Loss of flow leading to line plug and the need to remove/replace, unclog line
OGT-TEMP1-01	Personnel exposure to radioactive or hazardous material from the primary pipe due leak caused by low ambient temperature	Plugging of pipe due to crystallization or due to freezing for very low temperature
RAD-01	Exposure to radioactive and/or toxic materials from pits or risers due to radiation monitoring failure	Failure to monitor
RAD-01-I	Injury of worker from exposure to radioactive materials due to failure to monitor radiation	Failure to monitor
RAD-02	Exposure to radioactive and/or toxic materials from pits or risers due to radiation monitoring failure	Failure of monitoring instrument
RAD-03	Exposure to radioactive and/or toxic materials from pits or risers due to radiation monitoring failure	Improper calibration of monitoring instrument
RSR-02-I	Injury of worker from exposure to asbestos from gasket materials during access to riser due to failure to follow procedures	Failure to follow asbestos procedures
RSR-03-I	Injury of worker from exposure to asbestos from gasket materials during access to riser due to failure of PPE or fresh air supply	Failure of mask or fresh air (if appropriate)
RSR-04	Direct radiation exposure from open riser due to human error	Failure to follow procedures, failure to monitor or improper monitoring
RSR-04-I	Injury of worker from exposure to direct radiation exposure from open riser due to failure to follow procedures	Failure to follow procedures, failure to monitor or improper monitoring
VEH-04	Personnel receive radiation exposure from casks during transport due to human error	Personnel drive the vehicles or work near the cask transport vehicle
VEH-04-I	Injury of worker from radiation exposure from casks during transport due to inappropriate ALARA practices	Driver receives unexpected exposure or personnel work near the cask transport vehicle

Table 3.5-1

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
ABBREVIATION LIST : Admin - Administrative; Cntrls - Controls; Detect - Detection; Ign - Ignition; Mon - Monitoring Prep - Preparedness; Sys - System; Syss - Systems; Trans - Transfer [E] Control Applicable to Envrionmental Consequencs Only; [W] Control Applicable to Worker Safety Consequences Only [E & W] Control Applicable to both Environmental and Worker Safety Consequences								
102AW-01-FLOW 102AW-02-PRES	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by chemical reaction of incompatible wastes	Misrouting to destination other than intended creates chemical incompatibility	None required	None required	None required	None required	No controls required based on low accident frequency	S3
102AW-01-FLOW 102AW-04-PRES	Release of radioactive aerosol from transfer pipe which runs from DCRT to 102-AW tank due to spray leak into open underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
102AW-01-FLOW01	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW tank due to spray leak into open underground structure	Piping leak due to corrosion caused by transferring high temperature waste	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
102AW-01-TEMP	Release of liquid radioactive waste aerosols from transfer pipe to 102-AW due to spray leak of liquid waste from transfer pipe leak	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-02-PRES01	Release of radioactive aerosols from 102-AW tank due to fire-explosion in waste tank (Dome Collapse)	Flammable concentration of gases in tank vapor space with spark source	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Ign Cntrls (Lightning) **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO LA-UR-92-3196 and accident analysis (Natural Phenomena - Lightning), with additional controls on primary tank leak Detect Syss	S3
102AW-02-PRES03	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Blocked ventilation inlet causes excessive vacuum leading to dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102AW-02-PRES04	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Condensation of vapors causes excessive vacuum leading to dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102AW-02-PRES05	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Sub-cooling of vapor during equipment flushing causes excessive vacuum leading to dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-02-PRES06	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Ventilation imbalance causes excessive vacuum leading to dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102AW-02-PRES07	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive vacuum	Wrong size portable ventilator chosen for support work causes excessive vacuum leading to dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102AW-03-LEVE03	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by floating the primary tank within the annulus	Misrouting of liquid waste to the annulus causes floating of primary tank and subsequent dome collapse	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102AW-03-TEMP01	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by an explosion/fire in the annulus	Fire/ Explosion of flammable liquid spilled into annulus via a riser	None required	**AC:** Ign Cntrls (Vehicles)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-04-STRU01A	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Equipment drop during crane work causes excessive dome loading	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
102AW-04-STRU02	Release of liquids, solids, and-or vapors from 102-AW tank due to dome collapse caused by excessive dome loading	Violation of limits on dome loading	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
102AW-09-COMP01	Release of combustion product aerosols from 102-AW tank due to fire in separable organic layer in waste tank causing dome collapse	Organic reaching flash point or being aerosolized plus ignition source	None required	**AC:** Ign Cntrls (Organic Solvent) **AC:** Trans Cntrls (Organic Solvent)	None required	**AC:** HEPA Filter Cntrl (Source Term) **AC:** Emergency Prep Program (Organic Solvent)	Controls based on accident analysis (Organic Solvent Fire)	S3
102AW-09-COMP02	Release of radioactive waste aerosols from 102-AW tank due to fire in fuel spilled in waste tank causing dome collapse	Spill of fuel from external source plus fuel reaching flash point or being aerosolized plus ignition source	None required	**AC:** Ign Cntrls (Vehicles)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-13-FLOW01	Release of radioactive waste aerosols due to spray leak of waste from flush pit	Backflow of waste to flush pit with valve or pipe leak and cover block off	**SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Backflow Prevention Devices	**LCO:** Service Water Pressure Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines) with additional controls to address backflow	S3
102S-03.b4	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank causing dome collapse	Vehicle drives into open riser puncturing gas tank + Ignition + flammable organic vapors in tank	None required	**AC:** Ign Cntrls (Vehicles)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3
102S-04.c	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls (Salt Well Pumping) **AC:** HEPA Filter Cntrls (Filter Efficiency) **AC:** Ign Cntrls (Lightning)	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on Flammable Gas JCO; and accident analyses (Natural Phenomena - Lightning; and HEPA Filter Failure - Exposure to High Temperature or Pressure)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102S-04.d1	Release of radioactive aerosols contained in tank S-102 vapor space to the atmosphere due to low pressure causing dome collapse	Misoperation of exhauster during saltwell pumping	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102S-04.e3	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to generation of excessive heat leading to dome collapse	Addition of incompatible waste/chemical (misroute)	None required	None required	None required	None required	No controls required based on low accident frequency	S3
102S-05.a1a	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Excess Gravel overburden	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
102S-05.a1aa	Release of radioactive aerosols from Tank S-102 to atmosphere due to dome collapse	Large Vehicle traffic over tank	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
102S-05.a2	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Seismic Event (Common Mode Failure)	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102S-05.a3	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Past Thermocycling of Tank	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
102S-05.a3a	Release of radioactive aerosols from tank S-102 to atmosphere due to dome collapse	Long Term Aging	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
106C-01A	Release of radioactive and/or hazardous material from C-106 tank, structural damage, and dome collapse due to tank low pressure	Air inlet plugged due to icing, dust	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
106C-01B	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Inlet air valve closed	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-01C	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Exhauster damper positioned incorrectly	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
106C-01D	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Wrong sized portable exhauster	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
106C-01E	Release of radioactive and/or hazardous material from C-106 tank, tank structural damage, and dome collapse due to tank low pressure	Subcooling of tank vapor space due to water addition of flushing	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
106C-01I	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse caused by tank high pressure	Fire in waste tank	**SC:** SST Ventilation	**LCO:** SST Waste Temperature Cntrl **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-01J	Release of radioactive and/or hazardous material from C-106 tank due to high pressure in tank and possible dome collapse	Explosion/ fire in waste tank	**SC:** SST Ventilation	**LCO:** SST Waste Temperature Cntrl **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
106C-01Ma	Release of radioactive and/or hazardous material from C-106 tank due to flammable gas explosion/fire in tank caused by high temperature in the tank (Dome Collapse)	Chemical reaction in tank	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls **AC:** HEPA Filter Cntrls **AC:** Moisture Cntrls	None required	None required	Controls based on Flammable Gas JCO. Auto-ignition temperature of H2 at LFL is 400 C.	S3
106C-01X	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Overweight vehicles over top of tank	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-01Y	Release of radioactive and/or hazardous material from C-106 tank, dome structural damage, and/or personnel injury due to overload of tank dome	Flooding over top of tank	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	None required	None required	Controls based on accident analyses (Tank Failure Due to Excessive Loads; and Surface Leak Resulting in Pool)	S3
106C-02A	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	High waste temperature	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Waste Temperature Cntrl **LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls(Open path)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Organic Salt-Nitrate Reaction). Auto-ignition temperature of H2 at LFL is 400 C.	S3
106C-02B	Release of radioactive and/or hazardous material from C-106 tank due to ignition of high flammable gas content in tank and possible dome collapse	Ventilation system failure	**SC:** SST Ventilation	**LCO:** SST Waste Temperature Cntrl **LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-02C	Release of radioactive and/or hazardous material from C-106 tank due to dome collapse caused by ignition of high flammable gas content in tank	Tank burp, release of trapped gas	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
106C-04A	Release of radioactive and/or hazardous material from C-106 tank due to tank damage caused by flammable gas explosion/fire because of high flammable gas content in the tank (Dome Collapse)	High flammable gas content due to chemical reaction in sludge layer	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
106C-04B	Release of radioactive and/or hazardous material from C-106 tank due to explosion/fire caused by ignition of flammable gas released from radiolysis in tank sludge	Radiolysis in sludge layer allows release of trapped gas to vapor space	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-13A	Release of radioactive and/or hazardous material from C-106 tank due to possible dome collapse, tank damage caused by high temperature	Fire in C-105 propagates into tank C-106	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
114SX-04.a.2	Radioactive aerosols released from failed tank dome due to vacuum produced by valving error.	Human Error: Valve out Flammable Watch list (SX-109) Butterfly valve	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-04.a.3	Radioactive aerosols in tank released from Tank SX-114 to atmosphere due high temperatures causing dome concrete strength loss	No Ventilation Flow High Ambient Temperature Conditions Resulting in tank degradation	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-04.b.1.a.2	Release of radioactive material from tank SX-114 to atmosphere due to high temperature in the dome leading to dome collapse (long term closure of butterfly valve)	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum. Resulting in tank degradation	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-04.b.1.b.2a	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to bad welds	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-04.b.1.b.2b	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to heat induced tank dome collapse	Ducting failure due to Seismic activity coupled with failure to respond Resulting in tank degradation	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-04.b.1.c.2	Release of radioactive aerosols to atmosphere from Tank SX-114 waste due to dome collapse	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-04.b.1.d.2	Release of radioactive aerosols from Tank SX-114 waste to atmosphere due to dome collapse	Filter plugging results in lack of heat removal with high temperatures degrading dome strength	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-04.b.3b	Radioactive aerosols released from head space of Tank SX-114 to atmosphere through exhaust HEPA filter due to flammable gas ignition in the headspace (Dome Collapse)	Flammable gas explosion/fire in SX-114. {Note: SX-114 is NOT currently identified as a Flammable Gas Watch list tank} Requires spark to be present	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-05.b.1	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to flammable gas ignition resulting in dome collapse	Radiolysis creating bubbles of gases in waste	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
114SX-05.b.3	Radioactive aerosols released from Tank SX-114 waste to atmosphere when dome collapses due to sudden vacuum in tank	Quenching (adding cold liquid to hot tank contents) creating a vacuum	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-05.c.2b	Radioactive aerosols from Tank SX-114 waste released to atmosphere due to dome collapse	Chemical reaction caused by addition of chemical/solution. Resulting in tank degradation	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
114SX-06.a.1a	Radioactive aerosols released from Tank SX-114 waste to atmosphere due to dome collapse	Gravel overburden Large Vehicle	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-06.a.1b	Release of radioactive aerosols from Tank SX-114 waste to atmosphere as a result of a dome collapse	Deflagration of H2 (Implies gas generation AND A Spark)	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S3
114SX-06.a.3	Release of radioactive aerosols from Tank SX-114 waste to the atmosphere due to dome collapse as a result of loss of strength due to aging	Long term aging Resulting in tank degradation	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3
244AR-02.a.14	Release of radioactive aerosols from waste contained in tanks (4) and building due to earthquake	Earthquake collapses building and four tanks	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3
CCF-17	Release of radioactive and hazardous materials from tank due to dome collapse	Corrosion of rebar in concrete SST domes	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Vacuum or Degradation)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CCF-18	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank propagates to connecting tank and both tanks collapse during cooldown from negative tank pressure	None required	None required	None required	None required	No controls required based on accident analysis (Organic Solvent Fire/Organic Salt-Nitrate Reaction) which shows that tank will not collapse	S3
CCF-19	Release of radioactive and hazardous materials from tanks due to dome collapses	Fire in tank causes pressure transient that leads to GRE in connecting tank with subsequent fire and tank collapses from negative tank pressure	None required	None required	None required	None required	No controls required based on extremely low accident frequency	S3
COB-01	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid removed	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
CRN-03	Release of radioactive and/or toxic materials from tank due to dome collapse	Human error results in excessive weight on dome	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-04	Release of radioactive and/or toxic materials from tank due to dome collapse	Crane or rigging failures drop load resulting in large impact to dome	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
CRN-11	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Human error: improper load assembly, rigging, crane overloaded	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
CRN-12	Radioactive or toxic material release from tank due to boom failure and tank/equipment damage and dome collapse	Mechanical failure: corrosion, faulty materials	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
CRN-13-a	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	High wind	None required	**AC:** Dome Loading Cntrls (High Wind)	None required	None required	Controls base on accident analysis (Natural Phenomena - High Wind)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-13-b	Release of radioactive or toxic material from tank/equipment damage and dome collapse due to boom failure	Seismic event	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3
EE-01	Release of radioactive and toxic materials from tanks due to external force and fire	Aircraft crash	None required	None required	None required	None required	No controls required based on low accident frequency	S3
EE-04-a	Release of radioactive and hazardous materials from SST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	None required	**AC:** Ign Cntrls (Speed Limits)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3
EE-04-b	Release of radioactive and hazardous materials from DST tank due to external fires	Vehicle accident involving propane, diesel or gasoline delivery	None required	**AC:** Ign Cntrls (Speed Limits)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3
EE-05-a	Release of radioactive or hazardous materials from SST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
EE-05-b	Release of radioactive or hazardous materials from DST tank due to external fires	Run-away vehicle or truck shears off one or more risers, ruptures gasoline tank	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S3
EE-16	Release of radioactive and hazardous material from transfer line spray leak due to excavation error	Excavation into waste transfer line during a transfer	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S3
I-222S-1-CMP-E	Release of radioactive aerosols to the atmosphere from 244-S or receiver tank due to over pressurization of tank caused by organic fire.	Human Error - Upset of 222-S Lab operations	None required	**AC:** Ign Cntrls (Organic Solvent) **AC:** Trans Cntrls (Organic Solvent)	None required	**AC:** HEPA Filter Cntrl (Source Term) **AC:** Emergency Prep Program (Organic Solvent)	Controls based on accident analysis (Organic Solvent Fire)	S3
I-242A-1-FLW-A	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Valves fail to regulate (Go closed) which fails pump and creates ignition source AND sufficient hydrogen accumulation for fire/ explosion.	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO, with additional controls on primary tank leak Detect Syss	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-1-FLW-B	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Feed pump fails which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO, with additional controls on primary tank leak Detect Syss	S3
I-242A-1-FLW-C	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from dead heading.	Plugged line which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO, with additional controls on primary tank leak Detect Syss	S3
I-242A-1-FLW-D	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source.	Pump plugged which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO, with additional controls on primary tank leak Detect Syss	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-1-FLW-E	Release of radioactive material from feed tank TK-AW-102 due to fire/explosion caused by igniting hydrogen gas when pump is damaged and possibly becomes an ignition source from pump cavitation.	Empty feed tank which fails pump and causes ignition source AND sufficient hydrogen accumulation for fire/explosion.	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO, with additional controls on primary tank leak Detect Syss	S3
I-242A-2-CMP-B	Release to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Steam block valves inadvertently opened or left open	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S3
I-242A-4-TMP-A	Release of radioactive material from TK-AW-102 caused by ignition of organics in TK-C-100 which pressurizes the drain line and propagates the fire down the line to feed tank TK-AW-102.	Faulty control of vacuum to CA-1 vessel causing pot to boil with organic layer available.	None required	None required	None required	None required	No controls required based on low accident frequency	S3
I-242A-6-CMP-A	Release (steam) of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank.	Human error - Steam block valve inadvertently left opened.	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-BPLANT-1-CMP-E	Release of tank waste due to fire in receiver tank from transferring organics from B Plant.	Human error - Tank containing organics in B Plant rupture and spills organics to the drains which eventually end up in tank 24-1 and an inadvertent transfer to tank farms	None required	**AC:** Ign Cntrls (Organic Solvent) **AC:** Trans Cntrls (Organic Solvent)	None required	**AC:** HEPA Filter Cntrl (Source Term) **AC:** Emergency Prep Program (Organic Solvent)	Controls based on accident analysis (Organic Solvent Fire)	S3
I-PFP-1-CMP-E	Release of high level waste from receiver tank due to fire from organics transferred from PFP.	Excess organic material added to waste results in fire	None required	**AC:** Ign Cntrls (Organic Solvent) **AC:** Trans Cntrls (Organic Solvent)	None required	**AC:** HEPA Filter Cntrl (Source Term) **AC:** Emergency Prep Program (Organic Solvent)	Controls based on accident analysis (Organic Solvent Fire)	S3
ITK-08	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Exothermic reaction of incompatible materials in tank	**SC:** SST Ventilation **SC:** 244-BX DCRT Level (Ventilation) **SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** SST Ventilation Syss **LCO:** DCRT Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO. Auto-Ign temperature of H2 at LFL is 400 C.	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
ITK-09	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Failure to bond components or incorrect bonding	**SC:** SST Ventilation **SC:** 244-BX DCRT Level (Ventilation) **SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** SST Ventilation Syss **LCO:** DCRT Ventilation Syss **LCO:** 244-AR TK-002 Ventil Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO	S3
ITK-10-a	Release of radioactive material from in-tank fire or explosion due to intrusive activitiy (Dome Collapse)	Spark from equipment or tools	**SC:** SST Ventilation **SC:** 244-BX DCRT Level (Ventilation) **SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** SST Ventilation Syss **LCO:** DCRT Ventilation Syss **LCO:** 244-AR TK-002 Ventil Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO	S3
ITK-10-b	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Spark from equipment or tools	**SC:** SY-101 Mixer Pump Cntrls **SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO and LA-UR-92-3196, with additional controls on primary tank leak Detect Syss	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
ITK-11	Release of radioactive material from in-tank fire or explosion due to intrusive activity (Dome Collapse)	Lightning, range fire, or seismic event ignites tank vapors	**SC:** SY-101 Mixer Pump Cntrls **SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	**AC:** Emergency Prep (Seismic)	Controls based on Flammable Gas JCO; LA-UR-92-3196; and accident analyses (Natural Phenomena - Lightning; and Natural Phenomena - Seismic), with additional controls on primary tank leak Detect Syss	S3
ITK-FR-04	Release of radioactive aerosols from tank due to tank collapse	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing loss of structural integrity leading to tank collapse	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S3
ITK-FR-19	Release of radioactive aerosols from tank due to dome collapse	Hydraulic jacks on assembly stand are operated while assembly is bolted to flange tearing out riser and destroying tank integrity leading to dome collapse	None required	None required	None required	None required	No controls required based on low accident frequency	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
NP-07	Radioactive and hazardous material releases from tanks and ventilation systems due to seismic event	Earthquake collapses domes	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3
NP-08	Radioactive and hazardous material releases from transfer pipes due to seismic event (Possible Spray Leak)	Earthquake shears pipes and encasements during transfer	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S3
NP-11	Radioactive and hazardous material releases from tank farms due to lava flow	Eruption of molten lava from fissures	None required	None required	None required	None required	No controls required based on low accident frequency	S3
NP-13	Radioactive and hazardous material releases from tanks due to excessive weight on dome	Accumulations of heavy snow followed by heavy rain	None required	None required	None required	None required	No controls required based on accident analysis (Tank Failure Due to Excessive Loads)	S3
OGT-EXT3-01A	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by truck crash into piping system	Human error, line struck by truck	**SC:** OGT Concrete Shielding Sys	**AC:** Trans Cntrls (OGT protection) **AC:** Trans Pump Admin Lock Program **AC:** Ign Cntrls (Speed Limit)	None required	None required	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Trans Lines; and In-Tank Fuel Fire/Deflagration) with additional controls to address overground transfers	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-FLOW1-03A	Release of radioactive or hazardous aerosols from the primary pipe due to spray leak caused by misdirected flow	Spray leak caused by: JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to external flush fixture and release to the environment	**SC:** Pressure Switch Interlocks or Alarms (Water Service Lines)	**LCO:** Service Water Pressure Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	None required	None required	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines) with additional controls to address backflow	S3
OGT-FLOW2-02	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused by over-rated pump	Installation of incorrect pump and failure of inner pipe AND Failure of weld on flange of outer pipe AND Isolation valves closed on secondary pipe drains AND No concrete shield in place	**SC:** OGT Concrete Shielding Sys	**AC:** Encasement Seal Loops **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (OGT protection) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SC:** OGT Encasement and Connections	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines) with additional controls to address overground transfers	S3
OGT-NP3-01	Release of radioactive or hazardous aerosols from the primary pipe due spray leak caused to earthquake	Failure of line and concrete shielding during earthquake	None required	None required	**SC:** OGT Encasement and Connections	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic) and seismic qualification of OGT Encasement and Connections	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-NP3-02	Release of radioactive or hazardous aerosols from the primary pipe due to leak caused by high wind	Pipe is blown off supports AND No concrete shielding in place	None required	None required	**SC:** OGT Encasement and Connections	None required	Controls based on qualification of OGT Encasement and Connections for high winds	S3
W058-FLOW15	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW16	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW17a	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW17b	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW17c	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW18	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Computer failure or human error causing misrouting of material when flow path is not completely connected	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW19	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External leak of valve or valves to the valve pit plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW20a	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to misalignment (human error) plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW20b	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to gasket failure plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-FLOW20c	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Failure of jumper due to corrosion plus mitigative features failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
W058-INTEG32	Release of radioactive supernate or slurry aerosols to the atmosphere due to a spray leak from test risers located near SY-A and SY-B valve pits	Failure of primary piping and path for spray leak from test riser plus mitigative features failure	None required	**AC:** Encasement Seal Loops **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	None required	None required	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG34	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	None required	None required	None required	None required	No controls required based on low accident frequency	S3
W058-INTEG35	Release of radioactive slurry aerosols to the atmosphere caused by spray leak of slurry from the SY-A or SY-B valve pit due to piping system leak	Seismic event	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S3
W058-INTEG36	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	None required	None required	None required	None required	No controls required based on low accident frequency	S3
W058-INTEG37	Release of radioactive supernate aerosols to the atmosphere caused by spray leak of supernate from the SY-A or SY-B valve pit due to piping system leak	Seismic event	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-01-FLOW02	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse caused by flammable gas burn	Loss of pump prime results in overheated pump that ignites flammable gas	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO	S3
XS-01-FLOW03	Release of liquids, solids, and-or vapors from single shell tank due to dome collapse and DCRT pressurization caused by flammable gas explosion/fire propagating from DCRT to single shell tank	Pipeline connecting single shell tank and DCRT fills with flammable gas; loss of ventilation flow in DCRT so that a flammable gas atmosphere is ignited by the ventilation outlet heater	**SC:** SST Ventilation **SC:** 244-BX DCRT Level (Ventilation)	**LCO:** SST Ventilation Syss **LCO:** DCRT Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path)	None required	None required	Controls based on Flammable Gas JCO	S3
XS-06-FLOW02	Release of liquid radioactive waste from DCRT transfer piping to 102-SY due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-06-FLOW03	Release of liquid radioactive waste from transfer piping from PFP to DCRT due to spray leak in DCRT pump pit	Pipe failure in DCRT pump pit causing spray leak	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S3
XS-13-PRES02	Release of radioactive aerosols from 241-U-301B catch tank due to fire-explosion of flammable gas	Buildup of flammable gas in catch tank and spark source	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S3
XS-26-PRES02	Release of radioactive aerosols from 102-SY tank due to flammable gas fire-explosion (Dome Collapse)	Accumulation of flammable gases in vapor space and spark source	**SC:** Primary Tank Leak Detect Syss **SC:** DST/AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Flammability Cntrls **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning), with additional controls on primary tank leak Detect Syss	S3
102AW-01-FLOW02	Release of radioactive waste to soil from transfer piping which runs to 102-AW due to leak from primary pipe and encasement	Excavation accident fails primary pipe and encasement	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-01-FLOW03	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Corrosion of inner and outer pipe cause failure of primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
102AW-01-FLOW04	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	High structural loading from traffic or cranes fails primary pipe and encasement	None required	None required	None required	None required	No controls required based on low accident frequency	S2
102AW-01-FLOW05	Release of radioactive waste to soil from transfer piping to 102-AW due to leak from primary pipe and encasement	Seismic event fails primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
102AW-01-FLOW06	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
102AW-01-FLOW07	Release of radioactive waste to soil from transfer pipe to 102AW due to leak of radioactive waste from primary pipe and encasement	Water hammer cause failure of primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-01-FLOW10	Release of liquid radioactive waste from 102-AW due to overflow	Misrouting of waste from reverse flow caused by the combination of an incorrectly wired pump and a full transfer pipe	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102AW-01-FLOW11	Release of liquid radioactive waste to the ground surface from 102-AW due to overflow of 102-AW tank or underground structure	Misrouting to destination other than intended causes overflow	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Service Water Pressure Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-01-TEMP01	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to corrosion caused by transferring high temperature waste	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102AW-01-TEMP01A	Release of liquid waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to thermal stress of transferring hot solution in cold pipe	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-01-TEMP02	Release of liquid radioactive waste from transfer pipe to 102-AW due to leaks overflowing from underground structure	Piping leak due to exceeding the design temperature of the pipe by transferring high temperature waste	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102AW-02-LEVE01	Release of toxic gases from 102-AW tank due to accumulations of gases	Slurry growth	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
102AW-02-LEVE03	Release of radioactive liquid from 102-AW tank due to overfilling	Failure to stop transfer causes overfilling of tank	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-02-LEVE04	Release of radioactive liquid from 102-AW tank due to overfilling	Misrouting causes overfilling of tank	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Service Water Pressure Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102AW-02-LEVE05	Release of radioactive liquid from 102-AW to the soil column due to gross overfilling of tank (Pool)	Misrouting causes overfilling of tank	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Service Water Pressure Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-02-PRES 102AW-02-TEMP	Release of radioactive aerosols from 102-AW due to pressurization	Evaporator dump when intrusive activity is occurring which causes pressurization	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
102AW-02-PRES02	Release of toxic gases from 102-AW due to chemical reaction in waste	Transfer of incompatible waste to 102-AW causes tank gas accumulation	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
102AW-02-PRES08	Release of radioactive aerosols from 102-AW due to positive pressure	Evaporator dump of hot liquid generate aerosols and pressurizes the tank	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
102AW-02-PRES09	Release of radioactive aerosols from head space of TK-102-AW due to positive pressure (Lower energy than tank bump)	Loss of fan with airlift circulators running, generating aerosols and pressurizing the tank	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-02-TEMP 102AW-08-TEMP	Release of radioactive aerosols from TK-102-AW due to positive pressure	Chemical reaction heating up and-or agitating tank causes positive pressure in tank	None required	**AC:** Trans Cntrls (pH)	None required	None required	The Trans control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2
102AW-02-TEMP01	Release of radioactive aerosols from 102-AW tank due to boiling waste	High heat waste causing boiling	**SS:** Temperature Mon Sys **SS:** Waste Tank Level Mon Sys	**LCO:** DST and AWF Tanks Waste Temperature Cntrls **AC:** Trans Cntrls (Tank Bump topography)	None required	None required	Controls based on accident analysis (Tank Bump) for DST & AWF tanks	S2
102AW-02-TEMP02	Release of radioactive aerosols from tank 102-AW due to tank bump	High heat waste combined with loss of ventilation contributes to tank bump	**SS:** Temperature Mon Sys **SS:** Waste Tank Level Mon Sys	**LCO:** DST and AWF Tanks Waste Temperature Cntrls **AC:** Trans Cntrls (Waste Compatibility) **AC:** Process Instrumentation and Measuring and Test Equipment	None required	None required	Controls based on accident analysis (Tank Bump)	S2
102AW-03-LEVE01	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste leak into annulus and spark source	**SC:** Primary Tank Leak Detect Syss	**LCO:** Primary Tank Leak Detect Syss	None required	None required	Controls based on preliminary FSAR accident analysis	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-03-LEVE02	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus	Flammable concentration of gases in annulus vapor space due to waste mis-transfer into annulus and spark source	**SC:** Primary Tank Leak Detect Syss	**LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Mis-routing)	None required	None required	Controls based on preliminary FSAR accident analysis; and the accident analysis (Spray Leak in Structure or from Overground Waste Trans Lines)	S2
102AW-03-TEMP02	Release of radioactive aerosols from 102-AW tank due to fire-explosion in annulus damaging primary tank	Flammable concentration of gases in annulus vapor space due to spill of fuel into annulus and spark source	None required	**AC:** Ign Cntrls (Vehicles)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S2
102AW-04-STRU03	Release of radioactive particulate from 102-AW central pump pit due to re-suspension	Equipment drop during crane work	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads, Vacuum, or Degradation) to reduce frequency of load drops	S2
102AW-04-STRU04	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to equipment drop	None required	**LCO:** Trans Sys Covers **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads) and additional controls to prevent dropping covers during transfers	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-04-STRU05	Release of liquid radioactive waste from 102-AW central pump pit due to leak to soil	Piping leak and leak from pump pit due to seismic event	**SS:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Remaining Subsurface; and Natural Phenomena)-(Seismic)	S2
102AW-04-TEMP	Release of radioactive particulate from 102-AW central pump pit due to fire	Pump motor electrical fire	None required	None required	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on accident analysis (Fire in Contaminated Area)	S2
102AW-08-COMP02	Release of fission product gases and aerosols from 102-AW due to criticality	Misrouting of waste creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
102AW-08-COMP02A	Release of fission product gases and aerosols from 102-AW due to criticality	Human error - addition of excess fissile material to TK-102AW creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-08-COMP03	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (horizontally) creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
102AW-08-COMP04	Release of fission product gases and aerosols from 102-AW due to criticality	Non-uniform distribution of fissile material (vertically) due to addition of "rich" layer --K basin sludge creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
102AW-08-COMP05	Release of fission product gases and aerosols from 102-AW due to criticality	Over concentration of waste creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102AW-09-TEMP	Release of aerosols from 102-AW tank vapor space due to pressurization	Transfer of hot solution from facility, generate aerosols and pressurizes the tank	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
102AW-09-TEMP01	Release of radioactive aerosols from tank 102-AW atmosphere due to tank bump	High heat waste plus loss of cooling and-or mixing pump (not yet installed) operation	**SS:** Temperature Mon Sys **SS:** Waste Tank Level Mon Sys	**LCO:** DST and AWF Tanks Waste Temperature Cntrls **AC:** Trans Cntrls (Waste Compatibility) **AC:** Process Instrumentation and Measuring and Test Equipment	None required	None required	Controls based on accident analysis (Tank Bump)	S2
102AW-13-FLOW02	Release of radioactive liquid from transfer piping out of 102-AW due to backflow of radioactive material into flush pit and subsequent overflow (Pool)	Multiple valving errors and failure of backflow prevention devices dumps to pit as designed	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Service Water Pressure Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102S-01.a1	Radioactive/hazardous liquid released to soil suface from tank diversion box/access pit to the ground surface due to misrouting a transfer.	Human Error (Jumper/Blank Installation) + Mistransfer to Tank S-102 (450-600 Kgal) overfills tank	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls3	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102S-01.b2	Radioactive liquid released to soil surface from S-102 "Pump Pit" due to leak in jumpers connecting tank Transfer Lines SL-140, SN-242 during saltwell pumping.	Jumper Failure + Drain Plugged	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	LCO: Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
102S-01.b3	Radioactive liquid released to the soil subsurface from leaks in transfer Lines SL-140, SN-242. (Plume)	Line leak during saltwell pumping (corrosion)	**SS:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl)	Controls based on accident analysis (Subsurface Leak Remaining Subsurface)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102S-02.b1	Release of radioactive aerosols to atmosphere from Tank S-102 pump pit due to flammable gas generated in pump pit igniting and burning paint off pump pit walls	Jumper Leak + H2 evolution (or ammonia) + Spark	**SC:** Pit Leak Detectors **SS:** Tank Level Mon Sys **SS:** Salt Well Flow Totalizer	**LCO:** Leak Detect Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls (Leak Prevention/Detection)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analyses (Surface Leak Resulting in Pool; and Fire in Contaminated Area)	S2
102S-02.b2	Release of radioactive aerosols to atmosphere from Tank S-102 due to flammable gas from tank igniting in pump pit and burning paint off pump pit	H2 /Ammonia production migrates into pump pit + Spark (pumps not operating)	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls (Salt Well Pumping) **AC:** HEPA Filter Cntrls (Filter Efficiency)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analysis (Fire in Contaminated Area)	S2
102S-02.d2	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into pit ignited from ruptured gas tank.	Vehicle drives into pit cover puncturing gas tank + Ignition	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on accident analysis (Fire in Contaminated Area)	S2
102S-03.b3	Release of radioactive aerosols to atmosphere from Tank S-102 due to burning fuel flowing into waste tank due to ignition of fuel from ruptured gas tank.	Vehicle drives into open riser puncturing gas tank + Ignition	None required	**AC:** Ign Cntrls (Vehicles)	None required	**AC:** Emergency Prep (In-tank Fuel Fire)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
102S-04.a3	Release of radioactive aerosols trapped in gases throughout the tank S-102 waste to the atmosphere due to periodic release of toxic gases (Lower energy than tank bump)	Waste growth (bump) due to chemistry within the waste coupled with crust movement	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
102S-04.e1b	Release of radioactive aerosols contained in tank S-102 vapor space to atmosphere due to due to ignition of flammable gas in tank vapor space	Concentration of H2 or Ammonia (or other flammable gasses) above LFL + Ignition Source	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls (Salt Well Pumping) **AC:** HEPA Filter Cntrls (Filter Efficiency) **AC:** Ign Cntrls (Lightning)	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on Flammable Gas JCO; and accident analyses (Natural Phenomena - Lightning; and HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
102S-04.e4	Release of radioactive gases and aerosols from tank S-102 vapor space to atmosphere due to criticality	Criticality (misrouting)	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-01F	Release of radioactive and/or hazardous material from C106 tank, blown out HEPA filters and/or discharge out cover blocks due to high tank pressure	Blockage of inlet, outlet, and cascade lines	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure) and low accident frequency	S2
106C-01G	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction causing local discharge of contamination through blown HEPAs or out cover blocks	Addition of acid to tank	None required	**AC:** Trans Cntrls (pH)	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2
106C-01H	Release of radioactive and/or hazardous material from tank C-106, through blown HEPAs or out cover blocks due to tank boiling with vent path blocked or failed	Tank boiling with lack of vent path	**SS:** Temperature Mon Sys **SS:** Waste Tank Level Mon Sys	**LCO:** SST Waste Temperature Cntrls **AC:** Trans Cntrls (Tank Bump topography)	None required	None required	Controls based on accident analysis (Tank Bump) for SSTs	S2
106C-01M	Release of radioactive and/or hazardous material from C106 tank, due to high temperature in the waste tank	Exothermic, chemical reaction in tank due to inadvertent addition to tank	None required	**AC:** Trans Cntrls (pH)	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-01N	Release of radioactive and/or hazardous material from C-106 tank due to high temperature in tank	Criticality in waste tank	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
106C-04Aa	Release of radioactive and/or hazardous material from C106 tank, due to flammable gas content of the waste causing an exothermic reaction in waste tank	High flammable gas content in tank sludge layer due to chemical reaction	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S2
106C-06D	Release of contamination from C-106 pump pit and potential worker injury due to fire	Fire in or near pump pit due to vehicle fuel spill and burn	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on accident analysis (Fire in Contaminated Area)	S2
106C-06L	Release of contamination from C-106 pump pit due to explosion/fire affecting the structural integrity	Explosion/fire in pump pit	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** Trans Cntrls (Salt Well Pumping) **AC:** HEPA Filter Cntrls (Filter Efficiency)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analysis (Fire in Contaminated Area)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-10J	Release of radioactive and/or hazardous material from C-106 tank due to tank structural damage, HEPA damage caused by high temperature	Fire in or around ventilation system	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
106C-11E	Release of unfiltered tank atmosphere from C-106 tank, due to damaged ductwork	Damage to ventilation ductwork upstream of filters	None required	None required	None required	None required	No controls required based on accident analysis (Unfiltered Release)	S2
106C-11J	Release of radioactive and/or hazardous material from tank C-106, due to HEPA damage, beyond 200 F design	Exhauster heater overheat	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
106C-11K	Release of radioactive and/or hazardous material from C-106 tank due to HEPA filter damage, spread of contamination caused by high temperature in ventilation system	Fire in exhauster ductwork	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
106C-11L	Release of radioactive and/or hazardous material from tank C-106, through HEPA filter path due to human error in installation of filter	Improper installation of HEPAs	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
106C-11M	Release of radioactive and/or hazardous material from tank C-106, due to damaged HEPA filters	Event that damages HEPAs	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
106C-11O	Release of radioactive and/or hazardous material from C106 tank, due to loss of filtration	HEPA filter blowout	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
106C-12F	Release of radioactive and/or hazardous material from C106 tank, due to waste reaction in tank	Added chemicals to tank instead of normal water addition	None required	**AC:** Trans Cntrls (pH)	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
107AN-01-LEVE01	Release of caustic material from truck tank due to leak (aerosol spray)	Open valve on truck with pressurized tank transfer.	None required	None required	None required	None required	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established requiring 4 mil thickness plastic sleeving around delivery piping; limitation on the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used.	S2
107AN-01-LEVE02	Release of caustic material from truck tank due to leak (aerosol spray)	Truck tank leak	None required	None required	None required	None required	No controls required based on low accident frequency	S2
107AN-01-TEMP02	Spray release of caustic material from truck tank due to high temperature	Fire in gas tank	None required	None required	None required	None required	No controls required based on low accident frequency	S2
107AN-02-FLOW01	Release of radioactive aerosols from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	None required	**AC:** Trans Cntrls (pH)	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
107AN-02-FLOW02	Release of toxic vapors from TK-107-AN due to surface chemical reaction	Transfer of incompatible chemical to tank via chemical addition system due to vendor or paperwork error	None required	None required	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2
107AN-02-PRES	Release of caustic aerosol from caustic truck transfer piping due to spray leak	Piping/hose leak initiated by various causes	None required	None required	None required	None required	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established requiring 4 mil thickness plastic sleeving around delivery piping; limitation on the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
107AN-02-PRES02	Release of caustic material from transfer piping due to high pressure (aerosol spray)	Hose disconnect	None required	None required	None required	None required	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established requiring 4 mil thickness plastic sleeving around delivery piping; limitation on the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used.	S2
114SX-02.b	Radioactive liquid released from Tank Pump Pit to the ground surface due to inadvertent pumping activity (Pool)	Human Error (Not Normal Activity)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-04.b.1.b.1b	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to failure of exhaust ducting from seismic event (Mechanical disruption)	Ducting failure from Seismic activity	None required	None required	None required	None required	No controls required based on accident analysis (Unfiltered Release)	S2
114SX-04.c.1	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to mechanical failure of exhauster HEPA filter	Plenum structure failure pierces filter	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
114SX-04.c.2.a	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter seal failure	HEPA filter seal failure	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock **AC:** HEPA Filter Cntrls	Controls based on accident analysis (Unfiltered Release)	S2
114SX-04.c.2.b	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster defective HEPA filter	Defective HEPA filter	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock	Controls based on accident analysis (Unfiltered Release)	S2
114SX-04.c.2.c	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter deterioration	Deteriorated HEPA filter	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock	Controls based on accident analysis (Unfiltered Release)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
114SX-04.c.2.d	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to exhauster HEPA filter installation errors	Improper Installation (Human error)	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock	Controls based on accident analysis (Unfiltered Release)	S2
114SX-05.b.2	Radioactive aerosols from Tank SX-114 head space released to atmosphere due to sudden flashing of water added to tank for cooling	Flashing (adding cold liquid to hot tank contents)	None required	None required	None required	None required	No controls required based on low accident frequency	S2
114SX-05.c.2c	Radioactive gases and aerosols as well as direct radiation released from Tank SX-114 due to criticality	Criticality (difficult to achieve concentration needed and difficult to obtain configuration required)	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
114SX-05.d	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to localized explosion/fire of flammable gas	Core Sampling through a pocket of gas large enough to exceed local LFL AND A Spark = local explosion/fire	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls (Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open Path) **AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on Flammable Gas JCO; and accident analysis (Natural Phenomena - Lightning)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
204AR-01H	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to spilling rail car contents	Rail car rupture due to collision with other or a derailment	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-01I	Release of airborne and waterborne contaminates outside building on track spur, and potential contamination in unloader room from rail car due to leak	Rail car leak due to tanker corrosion or other degradation	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-02A	Release of liquid radioactive material and toxic chemicals outside and inside the 204AR building from the trailer due to collision which causes a spill	Tank trailer damage due to running into the building and causing the tank contents to spill	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-02B	Release of radioactive material and toxic chemicals from trailer due to structural degradation of trailer	Tank trailer damaged due to corrosion or other degradation	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
204AR-07A	Release of liquid rad waste and high airborne in unloading room from the TK-102-AY due to reverse pumping of TK-102-AY contents back to 204AR	Pump in pit 02D starts and pumps back to the 204AR building through the transfer piping and leaks	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** 204-AR CAM Interlock **SS:** 204-AR Building	**LCO:** Ventilation CAM Interlock Syss	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines) with additional controls to address 204-AR spray leaks	S2
204AR-09A	Release of airborne and waterborne contamination from the sump pit due to ruptured piping during transfer.	Rupture of transfer piping section above the sump pit	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-09B	Release of airborne and radiation contamination in the unloader room from trailer or rail car leak due to high level in sump pit	Catastrophic leak from a large liquid source such as a trailer or rail car	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-09C	Release of airborne and radiation contamination in the unloader room from rail car due to gross overfilling of catch tank	Gross overfilling of catch tank either from large source such as the trailers or rail cars or continual pumping of transfer water through a leaky pipe	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
204AR-09D	Release of radioactive liquid waste in the unloader room from the rail car or trailer due to failed rail car or trailer	Failed tank car or rail car (initially full of liquid waste) overflowing the catch tank and sump pit	None required	None required	None required	**AC:** Source Inventory Cntrls	Controls based on accident analysis (Leak from Railcar/Tank Trailer)	S2
204AR-11F	Release of airborne radiological contamination through the ventilation stack from the unloader room atmosphere due to fire in ventilation ducting	Fire in ventilation ducting resulting in damage to the HEPA filters and release to the atmosphere	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure) for 204-AR	S2
244AR-01.b.04	Release of radioactive aerosols from the facility exhaust stack due to filter failure	HEPA filter fails	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure) and no active ventilation at 244-AR	S2
244AR-01.c.09	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to flammable gas ignition	Ignition of flammable gas that has collected in piping and tank dome	**SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** 244-AR TK-002 Ventilation Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
244AR-02.a.03	Release of radioactive liquid in the form of aerosols contained in a cell to the exterior of the 244-AR facility due to ignition of flammable gas	Explosion/fire from Hydrogen buildup	**SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** 244-AR TK-002 Ventilation Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
244AR-02.a.07	Release of radioactive aerosols from vessel headspace to building atmosphere with eventual release outside facility due to overfilling of sump causing tank failure	Rain or snow water intrusion	None required	None required	None required	None required	No controls required based on low accident frequency	S2
244AR-03.a.04	Release of radioactive aerosols into cell due to ignition of flammable gas in 244-AR Vault tank headspace	Explosion/fire due to ignition of accumulated flammable gas	**SC:** 244-AR TK-002 Level (Ventilation)	**LCO:** 244-AR TK-002 Ventilation Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
244AR-03.a.05	Release of radioactive aerosols from tanks headspace due to ventilation system blockage	Ventilation and risers blocked while jetting occurring	None required	None required	None required	None required	No controls required based on isolation from 244-AR	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
244AR-03.a.08	Release of radioactive aerosols created by boiling waste to the cell atmosphere	Steam being supplied to tank heating/cooling coils	None required	None required	None required	None required	No controls required based on isolation from 244-AR	S2
244AR-03.a.09	Release of radioactive aerosols created by criticality to the cell atmosphere	Criticality in waste	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
244AR-05.a.02	Release of radioactive material from facility due to seismic event which causes building collapse without cell collapse	Seismic event damages facility structure	None required	None required	None required	**AC:** Emergency Prep (Seismic)	Controls based on accident analysis (Natural Phenomena - Seismic)	S2
2727W-02	Release of hazardous material from 2727W due to sodium fire	Vehicle crashes into building and ignites sodium	**SS:** 2727W Building	None required	None required	None required	Controls based on accident analysis (Sodium Fire)	S2
2727W-03	Release of hazardous material from 2727W due to sodium fire	Lightning	**SS:** 2727W Building	None required	None required	None required	No controls required based on low accident frequency	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
2727W-04	Release of hazardous material from 2727W due to sodium fire	Overhead power line falls through building	**SS:** 2727W Building	None required	None required	None required	No controls required based on low accident frequency	S2
2727W-05	Release of hazardous material from 2727W due to sodium fire	Nitrogen tank overpressurizes sodium tank, ignites sodium	**SS:** 2727W Building	None required	None required	None required	No controls required based on low accident frequency	S2
2727W-06	Release of hazardous materials from 2727W due to sodium-water reactions	High wind or tornado destroys building with rain/snow	**SS:** 2727W Building	None required	None required	None required	Controls based on accident analysis (Sodium Fire)	S2
BND-02	Release of radioactive aerosols from tank due to ignition of combustibles during preparation for bonding	Drilling holes for bonding attachments causes sparks when flammable gases or materials are present	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** Flammability Cntrls(Salt Well Pumping Prohibited) **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls **AC:** HEPA Filter Cntrls (Open path)	None required	None required	Controls based on Flammable Gas JCO.	S2
CCF-01	Radioactive and hazardous release from tanks due to extended loss of ventilation (over 6 months)	Sustained loss of offsite power	None required	None required	None required	None required	No controls required based on low accident frequency	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CCF-07	Release of radioactive and hazardous materials from tank due to overfill	Disabled or unavailable staff to terminate transfer	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Organization (Minimum Staffing)	**SC:** Trans Leak Detect Syss **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) and TWRS conduct of operations	S2
CCF-20	Release of radioactive and hazardous aerosols/vapors from tanks due to chemical reactions between waste and added materials	Reactive chemical additions to two tanks	None required	**AC:** Trans Cntrls (pH)	None required	None required	The transfer control for this hazardous condition is solely pH control because of the larger volumes in waste storage tanks compared to the analyzed accident.	S2
CDP-10	Release of radioactive contamination to soil surface from excavation or drilling in cribs, ditches, or ponds that disturbs radioactive material	Excavation or drilling	None required	None required	None required	None required	No controls required based on accident analysis (Unplanned Excavation/Drilling in Pond/Crib/Ditch)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
COB-04	Release of radioactive and/or hazardous material from COB lid due to overflow of COB during transfer (Pool)	Leak into COB with floor drain plugged, leak detector failed	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
COB-08	Release of radioactive and/or hazardous material from COB due to over filling of COB (Pool)	Transfer pipe or riser rupture, backfilling lower part of COB, then filling COB via the floor drain	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
CRN-03-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse	Human error results in excessive weight on top of containment	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-03-IB	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Human error results in excessive weight on top of containment	None required	**AC:** Dome Loading Cntrls (Excessive Loads)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-04-IA	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-04-IB	Release of radioactive and/or toxic materials from facility due to MISF containment collapse	Crane or rigging failures drop load resulting in large impact to top of containment	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-05	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Human error in positioning crane load	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on accident analysis (Fire in Contaminated Area)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-06	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Mechanical failure in positioning crane load	None required	**AC:** Ign Cntrls (Vehicle) **AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analyses (Fire in Contaminated Area; and Tank Failure Due to Excessive Loads, Vacuum, or Degradation)	S2
CRN-07	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Crane hits electrical lines/supplies	None required	**AC:** Ign Cntrls (Vehicle) **AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analyses (Fire in Contaminated Area; and Tank Failure Due to Excessive Loads, Vacuum, or Degradation)	S2
CRN-08	Release of radioactive and/or toxic materials from pits and risers due to fuel tank fire in crane or support vehicle (see In-Tank Equipment Installation for tank fires)	Lightning	None required	**AC:** Ign Cntrls (Lightning)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on accident analysis (Natural Phenomena - Lightning)	S2
CRN-09	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Human error in positioning crane load	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-09-I	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Human error in positioning crane load	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analyses (Unfiltered Release; and Tank Failure Due to Excessive Loads)	S2
CRN-10	Release of radioactive and/or toxic materials from ventilation system due to crane damage	Mechanical failure in positioning crane load	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-10-I	Release of radioactive and/or toxic materials from ventilation system due to damage caused by crane operation	Mechanical failure in positioning crane load	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analyses (Unfiltered Release; and Tank Failure Due to Excessive Loads)	S2
CRN-11-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-11-IB	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Human error: improper load assembly, rigging, crane overloaded	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-11-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure (Pool)	Human error: improper load assembly, rigging, crane overloaded	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** Emergency Prep (Significant Release)	Controls based on accident analyses (Surface Leak Resulting in Pool; and Tank Failure Due to Excessive Loads)	S2
CRN-12-IA	Release of radioactive and/or toxic materials from facility due to containment top collapse or equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-12-IB	Release of radioactive and/or toxic materials from facility due to equipment damage by boom failure	Mechanical failure: corrosion, faulty materials	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-12-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse by boom failure (Pool)	Mechanical failure: corrosion, faulty materials	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** Emergency Prep (Significant Release)	Controls based on accident analyses (Surface Leak Resulting in Pool; and Tank Failure Due to Excessive Loads)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-13-IA	Release of radioactive and/or toxic materials from below ground facility due to containment top collapse or equipment damage by boom failure	High wind or seismic event	None required	**AC:** Dome Loading Cntrls (High Wind)	None required	**AC:** Emergency Prep (Seismic)	Controls base on accident analyses (Natural Phenomena - High Wind; and Natural Phenomena - Seismic)	S2
CRN-13-IB	Release of radioactive and/or toxic materials from above ground facility due to equipment damage by boom failure	High wind or seismic event	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-13-IC	Release of radioactive and/or toxic materials from facility due to containment top collapse damage by boom failure	High wind or seismic event	None required	**AC:** Dome Loading Cntrls (High Wind)	None required	**AC:** Emergency Prep (Seismic)	Controls base on accident analyses (Natural Phenomena - High Wind; and Natural Phenomena - Seismic)	S2
CRN-18	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-18-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Human error: improper load assembly, rigging, crane overloaded	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-19	Release of radioactive or toxic material from above ground tank equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials (filter crush)	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analyses (HEPA Filter Failure - Exposure to High Temperature or Pressure; and Tank Failure Due to Excessive Loads)	S2
CRN-19-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	Mechanical failure: corrosion, faulty materials	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-20	Radioactive or toxic material release from pit or riser due to dropping crane load onto above ground tank equipment	High wind or seismic event (Filter Crush)	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (HEPA Filter Failure - Exposure to High Temperature or Pressure; Natural Phenomena - Seismic; and Natural Phenomena - High Winds)	S2
CRN-20-I	Release of radioactive or toxic material from aboveground facility equipment due to dropping crane load	High wind or seismic event	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-21-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Human error: improper load assembly, rigging, positioning error	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-22-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility (surface pool)	Mechanical failure: corrosion, faulty materials, hydraulics	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads)	S2
CRN-23	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	High wind or seismic event	None required	**AC:** Dome Loading Cntrls (High Wind)	None required	**AC:** Emergency Prep (Seismic)	Controls base on accident analyses (Natural Phenomena - High Wind; and Natural Phenomena - Seismic)	S2
CRN-23-IA	Release of radioactive or toxic materials from underground facility bottom due to loss of vertical load control, dropping crane load into facility (subsurface leak)	High wind or seismic event	None required	**AC:** Dome Loading Cntrls (High Wind)	None required	**AC:** Emergency Prep (Seismic)	Controls base on accident analyses (Natural Phenomena - High Wind; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CRN-23-IB	Release of radioactive or toxic materials from aboveground facility bottom due to loss of vertical load control, dropping crane load into facility	High wind or seismic event	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-25-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Human error: improper load assembly, rigging, positioning error	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-26-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
CRN-27-IB	Release of radioactive or toxic material from aboveground MISF due to swinging load into equipment caused by loss of lateral load control	Mechanical failure: corrosion, faulty materials, hydraulics, outriggers in soft soil	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
CVR-05	Release of radioactive or hazardous material through combustion or explosion/fire of materials in pit due to human error	Failure to sniff or improper sniffing	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (Fire in Contaminated Area)	Controls based on Flammable Gas JCO and accident analysis (Fire in Contaminated Area)	S2
CVR-15-I	Release of radioactive or hazardous material from pit upon dropping or falling coverblocks or pieces of coverblocks	Coverblock hooks fail or pieces of degraded coverblock fall into pit	None required	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None required	None required	Controls based on accident analysis (Tank Failure Due to Excessive Loads, Vacuum, or Degradation) to reduce frequency of load drops	S2
EE-11	Release of radioactive and hazardous materials from tank due to overfilling	Water line breaks and overfills tank	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
EE-17	Radioactive and hazardous material release from inactive equipment due to excavation error	Excavation into abandoned or inactive equipment	None required	None required	None required	None required	No controls required based on accident analysis (Unplanned Excavation/Drilling in Pond/Crib/Ditch)	S2
I-222S-1-CMP-C	Release (potential spray leak) of 222-S lab waste to atmosphere in diversion box or 244-S Pump Pit due to increased corrosion from failure to add NaOH.	Human Error - Failure to add NaOH	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Waste Compatibility) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-222S-1-LVL-A	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Failing to shut off steam after TK-102 is empty	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-222S-1-RXN-A	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Transfer of incompatible waste	None required	**AC:** Trans Cntrls (pH)	None required	**AC:** HEPA Filter Cntrls (Source Cntrl)	Controls based on accident analysis (Mixing of Incompatible Waste - Tank Pressurization)	S2
I-222S-2-FLW-C	Release of aerosols and/or toxic vapors from receiver tank due adverse chemical reactions from incompatible waste.	Human Error - Incorrect valve line up	None required	**AC:** Trans Cntrls (pH)	None required	None required	Controls based on accident analysis (Mixing of Incompatible Waste - Tank Pressurization)	S2
I-222S-2-LEK-B	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S2
I-222S-2-LEK-C	Release of 222-S lab waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-222S-2-LEK-E	Release of 222-S lab waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from a seismic event.	Earthquake	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-222S-2-PRS-A	Release (steam) of aerosols and particulates to atmosphere through ventilation due to over pressurization of 244-S DCRT caused by sending just steam to tank farm.	Steam reducer valve fails open.	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-242A-1-LEK-B	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-242A-1-LEK-C	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-1-LEK-E	Release of waste from feed tank TK-AW-102 to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-242A-2-FLW-A	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242A-2-FLW-B	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the receiver tank and possible structural damage to the tank.	Human Error - Pump is run at maximum speed	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242A-2-LEK-B	Release of slurry tank waste to the atmosphere due to spray leak at the diversion boxes or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-2-LEK-C	Release of slurry tank waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-242A-2-LEK-E	Release of slurry tank waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-242A-2-VSC-A	Release of aerosols in receiver tank due to tank burp from over concentration. Potential to generate conditions similar to SY101, "Tank Burp" due to hydrogen being trapped in thick solution. (Lower energy than tank bump)	Human Error - Over concentration of slurry at evaporator.	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242A-3-FLW-A	Release of aerosols to the atmosphere through unsealed cracks in the cover blocks due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-3-FLW-B	Release of aerosols to the atmosphere through 12" opening in inlet station due to over pressurization of the feed tank and possible structural damage to the tank.	Uncontrolled pot dump at Evaporator (Loss of electricity or air)	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242A-6-FLW-B	Release of diluted high level tank waste from feed tank TK-AW-102 caused by overfilling TK-AW-102 tank and annulus and aggravated by an uncontrolled evaporator dump when a raw water leak occurs in evaporator condenser room.	Rupture of raw water line in condenser / pump room	None required	None required	None required	None required	No controls at TWRS; required controls implemented at 242-A Evaporator	S2
I-242A-7-FLW-A	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Compressor fails AND AW tank farm air supplied from 242-A	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242A-7-FLW-B	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Valve inadvertently closed AND AW tank farm air supplied from 242-A	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242A-7-FLW-C	Release of aerosols through the risers due to loss of instrument air which causes an uncontrolled evaporator dump and failure to detect changes in feed tank pressure.	Filter plugged AND AW tank farm air supplied from 242-A	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
I-242S-2-FLW-A	Release of tank waste diluted with contaminated fire water to the soil due to flooding the pump room from a fire main break and pumping the water to 102-SY tank which overfills the tank and floods pit through risers.	Break in fire main.	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Leak) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242S-2-FLW-E	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the pump room from 102-SY.	Human Error - Incorrect valve line up	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Prevention/Detection)	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Detect)	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
I-242S-2-LEK-B	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-242S-2-LEK-C	Release of contaminated water to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-242S-2-LEK-E	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-242S-4-FLW-C	Release of high level waste to the ground outside the 242-S building due to unmitigated reverse flow to the condenser room.	Human Error - Incorrect valve line up	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Prevention/Detection)	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Detect)	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-242S-4-FLW-D	Release of tank waste diluted with contaminated water to the soil due to flooding the condenser room which is pumped to 102-SY tank and overfills the tank and floods pit through risers.	Break in fire main	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
I-242S-4-LEK-E	Release of contaminated water to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-BPLANT-1-CMP-B	Release (spray leak) of low level waste at diversion box from transfer of low pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH leads to corrosion and leak in pipe.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Mixing of Incompatible Material - Tank Pressurization)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-BPLANT-2-FLW-D	Release of aerosols and/or toxic vapors from receiver tank due to transfer of incompatible waste from B Plant.	Human Error - Communication error between B Plant and TWRS causes transfer of incompatible waste.	None required	**AC:** Trans Cntrls (pH)	None required	None required	Controls based on accident analysis (Mixing of Incompatible Waste - Tank Pressurization)	S2
I-BPLANT-2-LEK-B	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-BPLANT-2-LEK-C	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-BPLANT-2-LEK-E	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, cuased by rupture at pipe connections from an earthquake.	Earthquake causes spray leak	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PFP-1-AGT-A	Release of fission product gasses and aerosols from receiver tank due to: Potential for solids to collect in D-5 If mixed later, potential for composition of next batch to exceed Criticality Prevention Specifications (CPS). Potential "Criticality Issue".	Human Error or Agitator fails results in criticality	None required	**AC:** Nuclear Criticality Safety	None required	None required	Controls based on accident analysis (Nuclear Criticality)	S2
I-PFP-1-CMP-B	Release of fission product gasses and aerosols from receiver tank due to: Potential for localized concentration of fissile materials in receiver tank from failure to add ferric nitrates. Potential "Criticality Issue".	Failure to add ferric nitrates, results in criticality	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
I-PFP-1-CMP-D	Release of fission product gasses and aerosols from receiver tank due to excess fissile material in waste. Potential to exceed criticality prevention specification requirements for shipment. Potential "Criticality Issue".	Excess fissile content added to waste results in criticality	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PFP-2-LEK-B	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PFP-2-LEK-C	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PFP-2-LEK-E	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-PFP-2-TMP-B	Release (steam) of aerosols and entrained particulate from 244-TX ventilation system due to saturating HEPAs with steam due to failure of steam reducer which sends higher pressure steam to steam jet, gassing it out and sends steam to 244-TX.	Failure of steam reducer	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PFP-3-LEK-B	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PFP-3-LEK-C	Release of TRU mixed waste to the atmosphere due to spray leak at the rupture of the line.	Inadvertent excavation of line.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PFP-3-LEK-E	Release of TRU mixed waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections.	Earthquake	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-PUREX-1-AGT-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error or Mechanical Failure - Agitator fails or is not turned on	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Waste Compatibility) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Mixing of Incompatible Material - Tank Pressurization)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PURE X-1-CMP-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in corrosion and causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Waste Compatibility) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Mixing of Incompatible Material - Tank Pressurization)	S2
I-PURE X-1-LVL-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-PURE X-2-LEK-B	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PURE X-2-LEK-C	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from inadvertent excavation.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PURE X-2-LEK-E	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by an earthquake.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-PURE X-2-PRS-A	Release (steam) of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-PURE X-3-AGT-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Agitator fails or is not turned on results in corrosion and causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Waste Compatibility) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Mixing of Incompatible Material - Tank Pressurization)	S2
I-PURE X-3-CMP-B	Release (spray leak) of TRU waste from PUREX at diversion box due to leak from increased corrosion caused by transfer of acidic waste.	Human Error - Failure to add NaOH to low level waste results in spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Cntrls (waste compatibility)	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PURE X-3-CMP-E	Release of fission product gasses and aerosols from receiver tank due to criticality caused by exceeding Criticality Prevention Specifications for shipment from PUREX.	Transfer of L cell sump water to tank F-18 and eventually to the tank farm.	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
I-PURE X-3-LVL-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from transfer of steam.	Human Error - Failure to shut off steam jet when U-3 is empty.	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-PURE X-4-FLW-B	Release (ground surface) of high level tank waste diluted with flush water from the receiver tank due to overfilling from sending excess water.	Block valve on flush water inadvertently left opened or leaking.	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
I-PURE X-4-LEK-B	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-PURE X-4-LEK-C	Release of TRU waste from PUREX to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-PURE X-4-LEK-E	Release of TRU waste from PUREX to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2
I-PURE X-4-PRS-A	Release of aerosols and particulates through cracks in the cover block from the receiver tank due to tank pressurization from sending steam caused by steam reducer failure which gasses out the steam jet and sends just steam.	Steam Reducer fails	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-TPLAN T-1-CMP-B	Release (spray) of low level waste at diversion box from transfer of lower pH material resulting in increased corrosion in pipe.	Human Error - Failure to add NaOH causes corrosion and associated spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Waste Compatibility) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-TPLAN T-2-CMP-A	Release (steam) of aerosols and entrained particulates to atmosphere through ventilation due to over pressurization of 244-S-DCRT caused by sending just steam to tank farm.	Human Error - Steam block valve inadvertently opened or failure to close valve when tank 15-1 is low	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
I-TPLAN T-2-LEK-B	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by corrosion in the pipe.	Corrosion in pipe line causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-TPLAN T-2-LEK-C	Release of low level waste to the atmosphere due to spray leak at the rupture of the line from excavation.	Inadvertent excavation of line causes spray leak.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2
I-TPLAN T-2-LEK-E	Release of low level waste to the atmosphere due to spray leak at the diversion box or pump pit, caused by rupture at pipe connections from an earthquake.	Earthquake causes spray leak.	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
I-UPLAN T-1-LEK-B	Release of low level waste to the ground at the rupture of the line.	Inadvertent excavation of line.	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines) Excavation of a buried line leads to a surface leak.	S2
ITK-05	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Tank burps from intrusive activity	None required	None required	None required	None required	No controls required based on accident analysis (Evaporator Dump)	S2
ITK-05-I	Release of radioactive and/or hazardous material from point of in-facility access due to gas release from in-facility waste during intrusive activity (non-fire, non-explosion)	Gas release from in-facility waste during intrusive activity	None required	None required	None required	None required	No controls required based on accident analyses (Mixing of Incompatible Waste - Toxic Vapor Generation; and Evaporator Dump)	S2
ITK-06	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to criticality	Intrusive activity causes critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
ITK-06-I	Release of radioactive and/or hazardous material from point of in-facility access due to criticality within the in-facility waste during intrusive activity (non-fire, non-explosion)	Criticality from intrusive activity	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
ITK-08-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Exothermic reaction of incompatible materials in facility	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO. Auto-Ign temperature of H2 at LFL is 400 C.	S2
ITK-09-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Failure to bond components or incorrect bonding	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
ITK-10-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Spark from equipment or tools provide an ignition source	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
ITK-11-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during intrusive activity	Lightning, range fire, or seismic event ignites facility vapors	None required	**AC:** Ign Cntrls (Lightning)	None required	**AC:** Emergency Prep	Controls based on accident analyses (Natural Phenomena - Lightning; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
ITK-FR-03	Release of radioactive aerosols from tank and/or receiver due to equipment jam in riser	Equipment becomes lodged in riser, efforts to remove pull riser out of tank causing breach of tank & receiver containment	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
ITK-FR-08	Release of radioactive aerosols/vapors from flex receiver due to structural failure	High winds tear flex receiver bag	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
ITK-FR-13	Release of radioactive aerosols/vapors from flex receiver due to buildup and ignition of flammable gas in receiver	Hydrogen gas buildup in tank/riser that travels into receiver + Ignition source (spark from herculite or equipment)	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
ITK-FR-22	Release of radioactive aerosols from flex receiver due to tank gas release	Tank gas release pressurizes bag and causes bag to rupture	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
NP-02	Radioactive and hazardous material releases from tanks and ventilation systems due to fire	Lightning strikes ventilation system	None required	None required	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
NP-03	Radioactive and hazardous material releases from tanks due to fire in tanks	Lightning strikes riser in tank farm	None required	**AC:** Ign Cntrls (Lightning)	None required	None required	Controls based on accident analysis (Natural Phenomena - Lightning)	S2
NP-05	Radioactive and hazardous material release from tanks, nearby ground surfaces, and ventilation systems due to above grade disturbances	High winds	None required	None required	None required	None required	No controls required based on accident analysis (Above Ground Structure Failure)	S2
NP-15	Radioactive and hazardous material release from isolated or abandoned equipment due to fire	Hydrogen producing chemical reactions in isolated or abandoned equipment	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO. Natural Phenomena induced events are considered low frequency.	S2
OGT-EXT3-01B	Release of radioactive or hazardous material from the primary pipe due to leak caused by truck crash into piping system	Human error, line struck by truck	**SC:** OGT Concrete Shielding Sys	**AC:** Trans Cntrls (OGT Protection) **AC:** Ign Cntrls (Speed Limit)	None required	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release)	Controls based on accident analyses (In-Tank Fuel Fire/Deflagration; and Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-FLOW1-02	Release of radioactive or hazardous material from pit overflow due to primary pipe leak caused by over-rated pump	Incorrect pump installed creates excessive flow and pressure on OGT system eroding EPDM pipe AND Leak to secondary pipe AND Drain in pit plugged	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2
OGT-FLOW1-03B	Release of radioactive or hazardous material from the primary pipe due to misdirected flow of waste through flush line	JR-1 (3-way valve) mispositioned to flush AND 2 check valves fail AND Flush disconnect fails (check valve) AND Reverse flow to water truck, drum, or onto ground	**SC:** Pressure Switch Interlocks or Alarms (Water Service Lines)	**LCO:** Service Water Pressure Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	None required	None required	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address backflow	S2
OGT-FLOW1-04	Release of radioactive or hazardous material from the primary pipe due to valve failure resulting in misdirected flow of waste through flush line to flush water supply truck	JR-1 leak (bleed-by) AND 2 check valves fail AND Flush disconnect fails and pump started causing reverse flow to flush water truck tank	**SC:** Pressure Switch Interlocks or Alarms (Water Service Lines)	**LCO:** Service Water Pressure Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	None required	None required	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address backflow	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-FLOW1-06	Release of radioactive or hazardous material from the DCRT due to overflow	Exceed volume available in DCRT/insufficient volume available Condition goes unnoticed until overflow occurs	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
OGT-FLOW2-01B	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Incorrect pump installed creates excessive flow and isolation valve closed on secondary pipe Erosion of EPDM AND Pressurization of secondary pipe causing leaks from flanges gasket within concrete shield	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-FLOW2-03B	Release of radioactive or hazardous material from the primary pipe due leak caused by incorrect pump installed	Installation of incorrect pump AND Failure of inner pipe AND Isolation valves closed on secondary pipe drains causing leak from failed welds on flange within the concrete shield	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2
OGT-PRES1-01	Release of radioactive or hazardous material from overflow of pit due to leak caused by high pressure	Heat up of hydro test by heat tape or high ambient temperature High pressure results from captive fluid heat up AND Inner pipe damaged, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-REAC1-01	Release of radioactive or hazardous material from overflow of pit due to primary pipe leak cause by chemical reaction	Pumping from multiple tanks to single OGT Potential for adverse chemical reactions in pipeline damaging inner pipe, leaks to secondary pipe and drains back to pits AND Insufficient drainage in pit	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2
OGT-TEMP1-02	Release of radioactive or hazardous vapors/aerosols from the primary pipe due to spray leak caused by high temperatures	Vehicle accident above ground start fire Melt the EPDM hose causing a leak to secondary pipe; Pumping occurring, fire fails gasket and facilitates a release to atmosphere	**SC:** OGT Concrete Shielding Sys	**AC:** Trans Cntrls (OGT protection) **AC:** Ign Cntrls (Speed Limit)	None required	None required	Controls based on accident analyses (Spray Leak in Structure or from Overground Waste Transfer Lines; and In-Tank Fuel Fire/Deflagration) with additional controls to address overground transfers	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
OGT-TEMP1-03	Release of radioactive or hazardous material from overflow of pit due to leak caused by high temperature	High temperature flush water fails inner pipe causing leak to secondary pipe and drain to pit AND Insufficient drainage in pit	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release) **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool) with additional controls to address overground transfers	S2
RSR-06-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Failure to bond components or incorrect bonding allows electrostatic spark	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
RSR-07-I	Release of radioactive or toxic material from facility due to in-facility fire or explosion during riser removal activity	Spark from failure to use non-sparking tools or sparks from welding, cutting, grinding, etc.	None required	**AC:** Ign Cntrls (Organic Solvent) **AC:** Trans Cntrls (Organic Solvent) **AC:** Ign Cntrls (Organic Salt-Nitrate) **AC:** Moisture Cntrls	None required	**AC:** HEPA Filter Cntrl Program (Source Term) **AC:** Emergency Prep Program (Organic Solvent/Organic Salt-Nitrate)	Controls based on accident analysis (Organic Solvent Fire/Organic Salt-Nitrate Reaction)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
TFS-1	Release of radioactive or hazardous waste liquid from overflow of 244-S vault to the 244-S pump pit due to syphon effect on 102-SY tank (pump does not overflow)	Human Error: Failure to close isolation valve (or valve malfunction) following waste transfer which allows flow to continue (syphon) when pump is stopped.	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
VEH-01	Release of radioactive or toxic materials from cask due to fire caused by vehicle operation	Vehicle catches on fire	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2
VEH-01-I	Release of radioactive or toxic materials from vehicle carrying MISF samples or contaminated equipment due to vehicle fire	Vehicle catches on fire	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2
VEH-02	Release of radioactive or toxic material from cask due to damage to transport casks during an earthquake	Seismic event	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
VEH-02-I	Release of radioactive or toxic material from MISF samples in transport casks due to seismic damage	Seismic event	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2
VEH-03	Release of radioactive or toxic material from cask due to damage to transport casks during a high wind/tornado	High wind/tornado	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2
VEH-03-I	Release of radioactive or toxic material from MISF samples in transport casks due to high wind/tornado damage	High wind/tornado	None required	None required	None required	None required	None (All control activity deferred to packaging safety analyses)	S2
VEH-07-I	Release of radioactive or toxic material from MISF due to riser being sheared off and possibly vehicle gas tank ruptured and fire	Vehicle moving near facility risers	None required	**AC:** Ign Cntrls (Vehicle)	None required	**AC:** Emergency Prep (In-Tank Fuel Fire/Deflagration)	Controls based on accident analysis (In-Tank Fuel Fire/Deflagration)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW01	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-FLOW03	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW05a	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-FLOW05b	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW05c	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-FLOW07	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Computer failure or human error causing misrouting of material when flow path is not completely connected plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW09	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	External leak of valve or valves to the valve pit plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-FLOW11a	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to misalignment (human error) plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW1 1b	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to gasket failure plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-FLOW1 1c	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Failure of jumper due to corrosion plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-FLOW13	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Open path for pool leak from test riser	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrl	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG01a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
W058-INTEG01b	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG0 1c	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG0 1d	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG0 3a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG0 3b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
W058-INTEG0 5a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines) Excavation of a buried line leads to a surface leak.	S2
W058-INTEG0 5b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines) Excavation of a buried line leads to a surface leak.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG07a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
W058-INTEG07b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG09a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG09b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG11a	Release of radioactive slurry to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
W058-INTEG11b	Release of radioactive slurry to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG1 3a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
W058-INTEG1 3b	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
W058-INTEG1 3c	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to corrosion plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG1 3d	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to unrecognized material flaw plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG1 4a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
W058-INTEG1 4b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (airplane crash, volcanism, etc plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/Cntrl) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG1 6a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines) Excavation of a buried line leads to a surface leak.	S2
W058-INTEG1 6b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (excavation accident) plus mitigative features failure	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines) Excavation of a buried line leads to a surface leak.	S2
W058-INTEG1 8a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG18b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to external event (undermining from broken fluid transfer lines in vicinity) plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
W058-INTEG20a	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
W058-INTEG20b	Release of radioactive supernate to the soil surface from overflow of a diversion box due to piping system leak	Failure of primary and encasement piping due to freezing	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG22	Release of radioactive supernate to the soil surface from the underground piping between the SY-A or SY-B valve pit and a diversion box due to piping system leak	Failure of primary and encasement piping due to seismic event plus mitigative features failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep	Controls based on accident analyses (Subsurface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
W058-INTEG24	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG26	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	Seismic event plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2
W058-INTEG28	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak	External event (airplane crash, etc)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-INTEG30	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Seismic event	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Seismic) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analyses (Surface Leak Resulting in Pool; and Natural Phenomena - Seismic)S2	
W058-PRES01	Release of radioactive slurry to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
W058-PRES03	Release of radioactive supernate to the soil surface from overflow in the SY-A or SY-B valve pit due to piping system leak (Pool)	Water hammer plus mitigative features failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Tran^G S[^Nov'r Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-01-FLOW01	Release of radioactive aerosols from 244-TX DCRT due to ignition of flammable gas atmosphere	Pressure drop in transfer line releases flammable gas into DCRT atmosphere and ignition source causes deflagration	**SC:** 244-BX DCRT Level (Ventilation)	**LCO:** DCRT Ventilation Sys **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO for DCRTs	S2
XS-01-FLOW05	Release of radioactive contaminated liquid from transfer piping to 244-TX-DCRT via the raw water system due to reverse flow of liquid waste (Pool)	Mis-valving causes mixing of waste into raw water system that causes leak in the flush pit cover block	**SC:** Trans Leak Detect Syss **SC:** Pressure Switch Interlocks or Alarms (Water Service Lines) **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Service Water Pressure Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-01-FLOW06	Release of liquid radioactive waste from saltwell pumping transfer piping in DCRT pump pit to surface due to overflow (Pool)	Open jumper in single shell tank pump pit leads to overflowing of pump pit	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-01-FLOW07	Release of liquid radioactive waste to the soil from transfer piping from SST to DCRT due to leakage (Plume)	Pipe failure from various causes	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl)	Controls based on accident analysis (Subsurface Leak Remaining Subsurface) for single walled pipes	S2
XS-01-PRES01	Release of liquid radioactive waste from damaged transfer piping to 244-TX DCRT due to over pressure (Pool)	Use of wrong size pump and closed valve causes over pressure and subsequent pipe failure	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
XS-01-TEMP01	Release of steam-aerosol from transfer piping in pump pit due to steam hammer and resulting pipe damage	Extended recirculation and consequential heating of saltwell liquid with sudden opening of valve when cover block is open	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-02-FLOW02	Release of aerosols and particulate from DCRT ventilation filter due to transfer of steam from PFP steam jet into DCRT headspace	Human error (failure to shut off steam jet at completion of transfer) which causes DCRT ventilation filter failure	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (Steam Intrusion from Interfacing Syss)	S2
XS-02-FLOW03	Release of toxic gases (oxides of nitrogen) from DCRT due to chemical reaction	Chemical reaction between sodium nitrite (DCRT) and nitric acid (PFP transfer) due to failure to adjust waste pH prior to transfer	None required	None required	None required	None required	Controls based on accident analysis (Mixing of Incompatible Waste - Tank Pressurization)	S2
XS-02-FLOW04	Release of liquid radioactive waste to soil from transfer pipe (non-pool) subsurface plume	Failure to adjust waste pH prior to transfer causes leak	**SS:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl)	Controls based on accident analysis (Subsurface Leak Remaining Subsurface)	S2
XS-02-FLOW05	Release of liquid radioactive waste to the soil from PFP transfer piping due to pipe break	Pipe break from various causes	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Monitor Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-03-LEVE01 XS-21-LEVE (244-S DCRT)	Release of combustion products from 244-TX DCRT due to flammable gas burn in tank atmosphere	Evaporation of DCRT contents causing decreased ability of waste to retain flammable gases and spark source	**SC:** 244-BX DCRT Level (Ventilation)	**LCO:** DCRT Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
XS-03-LEVE02 XS-21-LEVE (244-S DCRT)	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Evaporation of DCRT contents with increased solids settling on DCRT bottom creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
XS-03-PRES01 XS-21-PRES (244-S DCRT)	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn in tank atmosphere	Loss of ventilation flow with accumulation of flammable gas and spark source	**SC:** 244-BX DCRT Level (Ventilation)	**LCO:** DCRT Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
XS-03-PRES02 XS-21-PRES (244-S-DCRT)	Release of toxic vapors from 244-TX DCRT due to decreased ability to keep vapors in solution (fan on)	Heating of DCRT or chemical adjustment	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-03-PRES05	Release of toxic vapors from DCRT due to increased concentrations in DCRT atmosphere	Transfer of steam from PFP causing evolution of toxic gases due to heating tank	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
XS-03-TEMP01	Release of radioactive aerosols from 244-TX DCRT headspace due to positive pressure	Chemical reaction in DCRT causes positive pressure	None required	**AC:** Trans Cntrls (pH)	**SS:** HEPA Filters (244-S, 244-TX, 244-A)	**AC:** HEPA Filter Cntrls (aerosol testing)	Controls based on accident analysis (Mixing of Incompatible Material - Tank Pressurization)	S2
XS-03-TEMP02	Release of toxic vapor from DCRT due to chemical reaction	Chemical reaction in DCRT toxic vapor	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
XS-03-TEMP02 XS-21-TEMP (244-S-DCRT)	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of material into tank that violates criticality specification	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
XS-03-TEMP03 XS-21-TEMP (244-S-DCRT)	Release of liquid aerosols from 244-TX-DCRT due to flammable gas burn-explosion/fire in tank atmosphere	Buildup of gases, loss of ventilation, and spark source	**SC:** 244-BX DCRT Level (Ventilation)	**LCO:** DCRT Ventilation Syss **AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-03-TEMP04 XS-21-TEMP (244-S-DCRT)	Release of liquid radioactive waste from 244 TX DCRT due to overflow	Freezing temperatures causing raw water line break-leak with leakage to tank causes overflow	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-05-FLOW01	Release of aerosols and filter media from DCRT ventilation system due to HEPA filter damage	Replacement of exhaust fan with larger capacity fan causes HEPA filter damage	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
XS-05-TEMP01	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to failure of ventilation heater controls	None required	None required	None required	**AC:** HEPA Filter Cntrls (Source Term)	Control for DCRTs based on accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2
XS-05-TEMP02	Release to atmosphere of materials from DCRT ventilation filters and tank due to filter degradation	Fire in ventilation system due to flammable gas buildup and ignition	**SC:** 244-BX DCRT Level (Ventilation)	**LCO:** DCRT Ventilation Sys **AC:** Ign Cntrls (244-BX only) **AC:** Flammable Gas Mon Cntrls	None required	**AC:** HEPA Filter Cntrls (Source Term)	Controls based on Flammable Gas JCO and accident analysis (HEPA Filter Failure - Exposure to High Temperature or Pressure)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-06-FLOW01	Release of fission product gases and aerosols from 244-TX DCRT due to criticality	Transfer of inadequately recirculated waste from tank due to failure to appropriately balance flow between recirculation and transfer line causing buildup of solids creating critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
XS-06-FLOW04	Release of liquid radioactive waste from transfer piping from an SST to a DCRT due to spray leak (SPUTTER) of saltwell liquor from DCRT pump pit	Pipe failure	None required	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Spray Leak in Structure or from Overground Waste Transfer Lines)	S2
XS-06-FLOW05	Release of waste from transfer pipe out of 244-TX-DCRT to the soil due to flow path to soil	Concurrent failure of transfer piping and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
XS-07-FLOW01	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Excavation accident fails primary pipe and encasement	None required	**AC:** Excavation Cntrls	None required	**AC:** Excavation Cntrls	Controls based on accident analysis (Spray Leak from Underground Waste Transfer Lines)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-07-FLOW02	Release of radioactive waste to soil from transfer piping out of 244-TX DCRT due to leak in primary pipe and encasement	Corrosion of inner and outer pipe	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
XS-07-FLOW03	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	High structural loading from traffic or cranes cause failure of primary pipe and encasement	None required	None required	None required	None required	No controls required based on low accident frequency	S2
XS-07-FLOW04	Release of radioactive waste to soil from transfer piping of 244-TX-DCRT due to leak in primary pipe and encasement	Seismic event fails primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Emergency Prep (Seismic)	Controls based on accident analyses (Subsurface Leak Resulting in Pool; Natural Phenomena - Seismic)	S2
XS-07-FLOW05	Release of radioactive waste to soil from transfer pipe out of 244-TX DCRT due to leak in primary pipe and encasement	Undermining due to leak of nearby pipes cause failure of primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
XS-07-FLOW06	Release of radioactive waste to soil from transfer pipe out of 244-TX-DCRT due to leak in primary pipe and encasement	Water hammer causes failure of primary pipe and encasement	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-11-LEVE01	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and misrouting causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-11-LEVE02	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Plugged drain and open jumper causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-11-LEVE03	Release of radioactive waste from diversion box to surface due to overflow	Plugged drain and piping leak causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-12-FLOW02	Release of aerosols from diversion box 241-U-152 due to flammable gas deflagration	Chemical reaction of catch tank material with backflow of vapors via diversion box drain line	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Control based on Flammable Gas JCO	S2
XS-12-FLOW03	Release of aerosols from diversion box 241-U-152 due to hydrogen deflagration	Radiolysis of catch tank material with backflow of vapors via diversion box drain line and ignition source	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Control based on Flammable Gas JCO	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-12-FLOW05	Release of radioactive waste from diversion box to surface due to overflow of transfer from 244-TX	Backflow from catch tank causes overflow from diversion box	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-13-PRES01	Release of radioactive aerosols from 241-U-301B catch tank due to chemical reaction	Draining of incompatible chemicals to catch tank	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Material - Tank Pressurization)	S2
XS-13-PRES03	Release of toxic vapors due to chemical reaction from 241-U-301B	Draining of incompatible chemicals to catch tank	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
XS-13-PRES04	Release of fission product gases and aerosols from catch tank 241-U-301B due to criticality	Transfer of excess fissile material to catch tank creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-20-FLOW01	Release of radioactive aerosols from 244-TX DCRT due to chemical reaction	Transfer of incompatible waste to 244-TX DCRT due to improper valve lineup	None required	**AC:** Trans Cntrls (pH)	**SS:** HEPA Filters (244-S, 244-TX, 244-A)	**AC:** HEPA Filter Cntrls (aerosol testing)	Controls based on accident analysis (Mixing of Incompatible Material - Tank Pressurization)	S2
XS-20-FLOW03	Release of radioactive aerosols from 244-TX DCRT due to positive pressure caused by chemical reaction	Chemical reaction of 244-S material with contents of 244-TX caused by misrouting	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Tank Pressurization)	S2
XS-20-FLOW04	Release of toxic vapors from 244-TX DCRT due to chemical reaction with incompatible material in 244-S DCRT	Mixing contents of 244-TX and 244-S due to misrouting causes chemical reaction	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2
XS-20-FLOW05	Release of fission product gases and aerosols from 244-S DCRT (not designated solids receiver) due to criticality	Transfer of waste from 244-TX DCRT due to improper valve lineup creates critical mass	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-20-FLOW08	Release of radioactive waste from 244-TX DCRT to surface due to overflow	Transfer of excess waste to 244-TX DCRT due to improper valve lineup causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-20-FLOW09	Release of radioactive waste from 244S DCRT to surface due to overflow	Transfer of waste from 244-TX DCRT due to improper valve lineup causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-26-PRES XS-26-TEMP	Release of toxic vapors from 102-SY due to chemical reaction	Mistransfer of incompatible waste causes chemical reaction	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Waste - Toxic Vapor Generation)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-26-PRES XS-26-TEMP 102-AW-TEMP	Release of fission product gases and aerosols from 102-SY due to criticality	Transfer of critical mass of fissile material and achievement of critical geometry	None required	**AC:** Nuclear Criticality Safety	None required	None required	The criticality controls address this hazardous condition by controlling waste composition of transfers into Tank Farms, using the double contingency principle.	S2
XS-26-PRES01	Release of radioactive aerosols from 102-SY tank due to chemical reaction	Mis-transfer of incompatible waste causes chemical reaction	None required	None required	None required	None required	No controls required based on accident analysis (Mixing of Incompatible Material - Tank Pressurization)	S2
XS-26-TEMP01	Release of radioactive aerosols from 102-AW due to tank bump	High heat waste plus loss of cooling contributes to tank bump	**SS:** Temperature Mon Sys **SS:** Waste Tank Level Mon Sys	**LCO:** SST Waste Temperature Cntrls **LCO:** DST and AWF Tanks Waste Temperature Cntrls **AC:** Trans Cntrls	None required	None required	Controls based on accident analysis (Tank Bump)	S2
XS-35-FLOW02	Release of radioactive waste to surface from 242-S Evaporator sump due to backflow to and overflow	Human error of leaving open flow path after emptying the sump and backflow and subsequent overflow	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Prevention/Detection)	**SS:** Tank Level Mon Syss	**AC:** Trans Cntrls (Leak Detect)	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-37-FLOW01	Release of radioactive liquid waste from catch tank to surface due to overfilling (Pool)	Leak of transfer piping with drainage to catch tank causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-37-FLOW02	Release of radioactive liquid waste to soil from transfer piping due to leak of liquid waste from concrete encasement (Subsurface plume)	Leak of transfer piping with encasement leak or blocked drain to catch tank (liquid oozes out concrete encasement)	**SS:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl)	Controls based on accident analysis (Subsurface Leak Remaining Subsurface)	S2
XS-41A-FLOW01	Release of radioactive waste from vent station nozzle pit to surface due to overflow	Catastrophic failure of vent piping causes overflow of nozzle pit	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-41A-FLOW02	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Vent valve left open or leaking during transfer causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2
XS-41B-LEVE01	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in nozzle pit	Failure to empty catch tank with buildup of flammable gas in nozzle pit plus ignition source	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
XS-41B-LEVE03	Release of radioactive waste to surface from vent station nozzle pit due to overflow	Failure to empty catch tank, causing overflow of tank and pit due to transfer failure	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

Table 3.5-1. Safety SSCs and TSRs for Potential S3 and S2 Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Cons NC
XS-41C-LEVE01	Release of radioactive aerosols from vent station catch tank due to flammable gas fire or explosion in catch tank pit	Leak of catch tank with buildup of flammable gas in catch tank pit plus ignition source	None required	**AC:** Ign Cntrls **AC:** Flammable Gas Mon Cntrls	None required	None required	Controls based on Flammable Gas JCO	S2
XS-48-FLOW	Release of liquid waste to soil from transfer piping between B-Plant and 241-ER-152 diversion box due to leak (Plume)	Piping failure from various causes	**SS:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl)	Controls based on accident analysis (Subsurface Leak Remaining Subsurface)	S2
XS-52-FLOW01	Release of radioactive waste to surface from transfer piping to TK-CR-003 due to leak (Pool)	Failure of pipe from various causes	**SC:** Pipe Encasements	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Encasement Seal Loops	**SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	Controls based on accident analysis (Subsurface Leak Resulting in Pool)	S2
XS-52-FLOW02	Release of radioactive waste from TK-CR-003 to surface due to overflow (Pool)	Mis-valving or valve failure during cross-site transfer causes overflow	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Emergency Prep (Significant Release) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	Controls based on accident analysis (Surface Leak Resulting in Pool)	S2

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Table 3.5-2

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
ABBREVIATION LIST : Admin - Administrative; Cntrls - Controls; Detect - Detection; Ign - Ignition; Mon - Monitoring; Prep - Preparedness; Sys - System; Syss - Systems; Trans - Transfer							
102AW-02-LEVE	Release of radioactive aerosols from TK-102-AW annulus due to the presence of radioactive liquid waste in TK-102-AW annulus	Primary tank leakage from various causes	None	None	**SC:** Primary Tank Leak Detect Syss **SS:** HEPA Filters	**LCO:** Primary Tank Leak Detect Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	These controls address this hazardous condition by indicating leak and minimizing release.
102AW-02-LEVE02A	Release of radioactive aerosols from TK-102-AW annulus ventilation system due to the presence of radioactive liquid waste in the annulus	Mis-routing of transfer to annulus instead of primary tank	None	**AC:** Trans Cntrls (Mis-routing)	**SS:** HEPA Filters **SC:** Primary Tank Leak Detect Syss	**LCO:** Primary Tank Leak Detect Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	These controls address this hazardous condition by indicating mis-transfer and minimizing exposure.
102AW-04-LEVE01	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Leak of primary piping	None	None	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by indicating leak and minimizing releases.
102AW-04-LEVE02	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Misrouting through an open jumper plus clogged drain	None	**AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leak and minimizing exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
102AW-04-LEVE03	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Dissolution of residual contamination in central pump pit caused by erroneous use of raw water	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
102AW-04-LEVE04	Release of radioactive aerosols from 102-AW central pump pit due to accumulation of radioactive liquids in the central pump pit	Dissolution of residual contamination in central pump pit caused by pit cleaning plus clogged drain	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
102AW-04-PRES01	Release of radioactive particulate from 102-AW central pump pit due to pressurization	Loss of primary tank ventilation causes pressurization of pump pit.	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **AC:** Flammability Cntrls (Pressurization)	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls (Tracking)	These controls address this hazardous condition by monitoring ventilation operation and cover block status.
102AW-04-PRES02	Release of radioactive particulate from 102-AW central pump pit due to its being open to atmosphere	Removal of cover block	None	None	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss	These controls address this hazardous condition by minimizing release.
102AW-08-COMP06	Release of toxic gases from 102- AW tank vapor space due to production and migration of toxic gases from sludge	Chemical reactions in waste causes production of toxic gases	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
102AW-09-COMP03	Release of toxic vapors from a of separable organic layer in TK-102-AW due to fuel spill into tank	External event (fuel spill)	None	**AC:** Ign Cntrls (Vehicles)	None	None	This control addresses this hazardous condition by preventing fuel spill.
102AW-09-COMP04	Release of toxic vapors from a separable organic layer in TK-102-AW	Core sampling (NPH) releases trapped vapors	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.
102AW-09-COMP05	Release of toxic vapors from a separable organic layer in TK-102-AW due to error in transfer	Generator erroneous transfer of insoluble organic material	None	**AC:** Trans Cntrls (Organic Solvent)	None	None	This control addresses this hazardous condition by preventing mis-transfers.
102S-02.d3	Release of radioactive aerosols to atmosphere from Tank S-102 pit due to burning fuel on top of pit caused by ignition of gas from ruptured gas tank.	Vehicle drives into pit cover puncturing gas tank + Ignition	None	**AC:** Ign Cntrls (Vehicles)	None	**AC:** Emergency Prep (Fire in Contaminated Area)	These controls address this hazardous condition by preventing fuel spill and minimizing exposure.
102S-06.a	Release of radioactive aerosols from tank S-102 vapor space to atmosphere due to ventilation system failure	Filter plugged	None	**AC:** HEPA Filter Cntrl (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
106C-01K	Release of radioactive and/or hazardous material from C106 tank due to high temperature	Water evaporation	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.
106C-01S	Release of radioactive and/or hazardous material from C106 tank caused by low level in waste tank due to high temperature	Water evaporation	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.
106C-01Sa	Release of radioactive and/or hazardous material from tank C-106, due to low tank level because of tank leak	Waste tank leak	**SS:** Temperature Mon	**LCO:** SST Waste Temperature Cntrls	**SS:** Tank Level Mon Sys **SS:** Temperature Mon	**LCO:** SST Waste Temperature Cntrls	These are applicable controls from the accident analysis. Temperature monitoring prevents one possible tank failure cause and is a possible indicator of tank leak (tank heat-up). Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
106C-01T	Release of radioactive and/or hazardous material from tank C-106, due to low level in waste tank	Failure to add water to tank	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
106C-06A	Release of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit being opened to atmosphere	Cover blocks removed	None	None	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss	These controls address this hazardous condition by minimizing release.
106C-06F	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain while adding water	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
106C-06G	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain with rain or snow melt intrusion	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls (Leak Detect) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	None	None	These controls address this hazardous condition by notifying personnel of leak.
106C-06H	Release (minor) of radioactive and/or hazardous material from tank C-106 pump pit, due to pump pit high level	Plugged pit drain during pit cleaning, cover blocks are off	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
106C-06K	Release of radioactive and/or hazardous material from C-106 tank pump pit, due to decreased pump pit structural integrity caused by drop	Equipment drop during crane work	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by preventing equipment drop.
106C-10F	Release of radioactive and/or hazardous material from tank C-106, potential spread of contamination, due to reverse air flow if intake HEPAs damaged	Loss of tank active ventilation	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
106C-10K	Release of radioactive and/or hazardous material from tank C-106, spread of contamination, due to ventilation air intake open to atmosphere	HEPA filter breach	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
106C-10L	Release of radioactive and/or hazardous material from tank C-106, spread of contamination, due to ventilation air intake open to atmosphere	Air intake ductwork damaged	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
106C-11A	Release of radioactive and/or hazardous material from tank C-106, due to HEPA filter damage	HEPA filters plugged	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
106C-11G	Release of tank atmosphere through exhauster drain from C-106 tank, due to leak or failure to add water routinely	Loss of exhauster seal pot water due to leak or failure to add water routinely	None	None	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss	These controls address this hazardous condition by minimizing unfiltered releases.
106C-11H	Release of radioactive and/or hazardous material from tank C-106, due to condensate backing up into filters, de-entrainer or heater	Exhauster seal pot water freezing due to loss of heat trace	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by minimizing filter source term accumulation, filter degradation and mitigating filter breakthrough.
106C-11I	Release of radioactive and/or hazardous material from tank C-106, due to moisture carryover into HEPAs causing loss of efficiency	Exhauster heater failure	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by minimizing filter source term accumulation, filter degradation and mitigating filter breakthrough.
106C-11N	Release of radioactive and/or hazardous material from tank C-106, through HEPA filter path due to filter degradation over time	HEPA filter degradation	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by minimizing filter source term accumulation, filter degradation and mitigating filter breakthrough.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
106C-12A	Release of radioactive and/or hazardous material from tank C-106, due to tank falling below level limit, because of excessive tank evaporation from high temperature	Pit drain plug, water addition fails	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.
106C-12B	Release of radioactive and/or hazardous material from tank C-106, due to low tank level	Water addition tank truck breakdown	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.
106C-12C	Release of radioactive and/or hazardous material from tank C-106, due to low tank level because of increased evaporation	Water addition tank truck leak	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.
106C-12D	Release of radioactive and/or hazardous material from C106 tank, due to excessive tank evaporation from high temperature which causes tank to fall below level limit	Tank level instrumentation fails, does not prompt water addition	**SC:** SST Ventilation **SS:** Temperature Mon	**LCO:** SST Ventilation Syss **LCO:** SST Waste Temperature Cntrls **AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by maintaining tank vacuum, inspection of HEPA filters, and mitigating filter breakthrough.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
107AN-01-LEVE03	Release of caustic material from truck tank due to leak	Failure to secure truck	None	None	None	None	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established for 4 mil thickness plastic sleeving around delivery piping, limitation of the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used. Facility worker exposure controlled by Health & Safety Plan.
107AN-03-FLOW	Release of concentrated caustic solution to surface from transfer piping due to backflow of caustic	Low temperature causes backflow	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
114SX-04.a.1a	Radioactive aerosols released from Tank SX-114 head space via Tank Ventilation (requires failure of outlet filter) to the atmosphere when exhauster fails	Exhauster Failure Mechanical Low Temperature (Thermocouple in exhaust duct not insulated picks up radiated temperature from ductwork.)	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.a.1b	Radioactive aerosols released from Tank SX-114 head space via Tank Ventilation (requires failure of outlet filter) to the atmosphere when exhauster fails	Filter Plugged	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.a.4	Radioactive aerosols from Tank SX-114 headspace released to atmosphere due to inlet HEPA filter failure coupled with exhauster failure	Filter Failure	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.b.1.a.1	Radioactive aerosols from Tank SX-114 headspace released to atmosphere due to inlet HEPA filter failure coupled with exhaust butterfly valve closure	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum.	None	**AC:** HEPA Filter Cntrl (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
114SX-04.b.1.b.1a	Radioactive aerosols released from Tank SX-114 head space to the atmosphere due to ventilation system ducting failure (with failed inlet filter)	Ducting failure from bad welds	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.b.1.c.1	Release of radioactive aerosols from Tank SX-114 head space to atmosphere due to exhauster failure and multiple filter failure	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.b.1.d.1	Release of radioactive aerosols from Tank SX-114 head space to atmosphere due to exhauster filter plugging (requires failure of inlet filter)	Exhaust filter plugging plus inlet filter failure	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.
114SX-04.b.5	Radioactive aerosols released from Tank SX-114 head space to atmosphere due to failure of exhauster HEPA filters	No Ventilation Flow High Ambient Temperature Conditions Leading to filter failure	**SC:** SST Ventilation	**LCO:** SST Ventilation Syss **AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address the hazardous condition by maintaining tank vacuum and inspection of inlet HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-01A	Release and spread of airborne radiological contamination from the rail car due to over pressurization	Over pressure in the rail car due to chemical reaction, rupture disk fails	None	None	None	**AC:** Source Inventory Cntrls	This control addresses this hazardous condition by minimizing exposure.
204AR-01B	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to high ambient temperature	Over pressure in the rail car due to high ambient temperature, rupture disk fails	None	None	None	**AC:** Source Inventory Cntrls	This control addresses this hazardous condition by minimizing exposure.
204AR-01C	Release of airborne contamination and toxic chemical exposure to worker from the rail car due to chemical reaction causing over pressurization	High temperature in the rail car due to chemical reaction of the rail car contents, rupture disk fails	None	None	None	**AC:** Source Inventory Cntrls	This control addresses this hazardous condition by minimizing exposure.
204AR-01D	Release and spread of airborne contamination and toxic chemical exposure to worker from the rail car due to leaking rail car caused by high ambient temperature and over pressurization of car tank	High ambient temperature causing pressurization of rail car and possible leakage, failed rupture disk	None	None	None	**AC:** Source Inventory Cntrls	This control addresses this hazardous condition by minimizing exposure.
204AR-01J	Release of airborne contamination from overflowing catch tank due to overfilling through priming line	Priming line inadvertently fills up rail car and overflows rail car through its vent line to the catch tank	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-01K	Release of airborne contamination from unloader room due to overflowing catch tank	During sluicing operations, fill up rail car and overflow through its vent line to the catch tank	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.
204AR-02E	Release of radioactive material and toxic chemicals from trailer due to damage caused by trailer jack failure	Leak from tank trailer due to trailer jack failure	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls **AC:** Source Inventory Cntrls	These controls address this hazardous condition by notifying personnel of leak.
204AR-02F	Release of airborne contamination from unloader room due to overflowing catch tank	Priming line inadvertently fills up trailer and overflows trailer through its vent line to the catch tank	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.
204AR-03A	Release of contamination and airborne release around the catch tank area, and chemical exposure in mechanical equipment room from catch tank or Sodium Nitrate tank due to failed tank	Sodium Nitrite tank #2 either fails or has a drain valve open and empties its contents to the floor drains in the mechanical equipment room	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls (Leak Detect)	These controls address this hazardous condition by minimizing leak size.
204AR-03B	Release of airborne around the catch tank area and chemical exposure in mechanical equipment room from the Na Nitrite tank due to overfilling and spilling to catch tank.	Sodium Nitrite Tank #2 overfilled and contents spilled into floor drains	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-04A	Release of airborne and waterborne contamination from high level in the catch tank due to NaOH tank failure	Sodium Hydroxide Tank #3 failure or drain valve open which empties contents into the floor drains	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls (Leak Detect)	These controls address this hazardous condition by minimizing leak size.
204AR-04B	Release of airborne contamination around the catch tank area, and chemical exposure in mechanical equipment room from the NaOH and catch tanks due to overfilling of the NaOH tank	Sodium Hydroxide Tank #3 overfilled and contents spilled into the floor drains	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.
204AR-04C	Release of chemicals to the mechanical equipment room environment from the Sodium Nitrite tank due to adding chemicals too quickly	Adding caustic chemicals too quickly to the tank - human error	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.
204AR-04D	Release of NaOH particulates from the NaOH tank due to thermal stress to piping and eventual valve leakage of NaOH tank piping	Adding too much NaOH resulting in high temperatures	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.
204AR-04E	Release of NaOH particulates from the NaOH tank due to damage to the chemical addition pump diaphragm	Adding steam heat to the coils resulting in high temperatures	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-05B	Release of toxic chemicals and worker exposure from chemical addition piping due to over pressure of piping and subsequent damage	Over pressure while running chemical addition pump due to dead heading the pump	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.
204AR-06A	Release of liquid radioactive waste to the unloader room or caustic chemicals to the mechanical equipment room from the priming water piping or transfer piping due to over pressurization of piping	Raw water supply pressure higher than normal	None	None	**SC:** Trans Leak Detect Syss	**AC:** Trans Leak Detect Syss	These controls address this hazardous condition by minimizing leak.
204AR-06B	Release of liquid radioactive waste to the unloader room or caustic chemicals to the mechanical equipment room from the priming water piping or transfer piping due to over pressurization of piping	Water hammer in priming piping from raw water supply	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss	These controls address this hazardous condition by minimizing release.
204AR-06C	Release of airborne contamination from unloader room due to overflowing catch tank	High flow through the priming line and transfer piping due to misalignment which fills up the rail car or trailer and overflows it to the catch tank	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leakage.
204AR-07B	Release of contaminated water to encasement outside of 204AR building and floor drains inside building from the transfer piping due to over pressure and leakage from raw water flush	Over pressure of raw water through transfer piping during post transfer flush	None	None	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls (Leak Detect)	These controls address this hazardous condition by minimizing leak size.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-09F	Release of airborne contamination and increased radiation levels from catch tank due to blocked catch tank ventilation and over pressure of catch tank	Ventilation to the catch tank is blocked off with heaters on, resulting in a catch tank high pressure	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
204AR-11A	Release of airborne radioactivity from unloader room due to loss of confinement caused by power failure	Loss of confinement due to power failure and total loss of ventilation fan	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
204AR-11B	Release of airborne radioactivity from unloader room due to loss of confinement caused by low ventilation flow	Loss of confinement due to low ventilation flow	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
204AR-11C	Release of airborne contamination from the unloader room due to failure of ventilation fan	Failure of EF-1 fan resulting in loss of confinement	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
204AR-11D	Release of airborne contamination from the unloader room due to blocked ventilation flow	No ventilation flow because of damper closed	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
204AR-11E	Release of airborne contamination from the unloader room due to plugged ventilation flow	No ventilation flow because of plugged HEPA filter	None	AC: HEPA Filter Cntrls (Filter Efficiency)	None	AC: HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.
213 W-01	Release of radioactive and/or hazardous materials in 213 W work room due to error in repackaging or instrument repair	Handling error (forklift, spills, etc)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
213 W-02	Release of radioactive and/or hazardous materials in 213 W work room due to error in repackaging or instrument repair	Failure of tools	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
213 W-09	Release of radioactive and/or toxic materials from 213 W due to structural failure of building	Loss of control of vehicle in vicinity of building	None	AC: Ign Cntrls (Vehicle)	None	None	This control addresses this hazardous condition by minimizing vehicle accidents.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
244AR-01.a.03	Radioactive aerosols released from tank headspace exit building through the inlet side of the canyon ventilation system due to mechanical failure	Failure of vessel venting with open vents to cell atmosphere and jetting operations occurring plus failure of exhaust fans	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-01.b.01	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to mechanical failure	Fan Failure with jetting occurring	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-01.b.02	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to mechanical failure	HEPA filter plugged with jetting occurring	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters. Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-01.b.03	Radioactive aerosols released from tank headspace and exit building through the inlet side of the canyon ventilation system due to human error	Damper closed with jetting occurring	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters. Hazardous condition not credible because steam has been isolated from 244-AR.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
244AR-01.c.01	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to vessel ventilation failure	Plugged vessel ventilation system filters	None	AC: HEPA Filter Cntrls (Filter Efficiency)	None	AC: HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.
244AR-01.c.02	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to ventilation system failure	Vessel ventilation system fan shutdown or failure	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
244AR-01.c.03	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to human error	Valve closed in exhaust flow path	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
244AR-01.c.08	Release of radioactive aerosols from vessel headspace into canyon atmosphere due tank rupture	Plugged tank vents with gas evolution in tank contents	SC: 244-AR TK-002 level (Ventilation)	LCO: 244-AR TK-002 Ventilation Sys	None	None	These controls address the hazardous condition by indicating absence of ventilation flow.
244AR-01.c.10	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to plugged ventilation system	Air purge operating with ventilation system plugged	None	AC: HEPA Filter Cntrls (Filter Efficiency)	None	AC: HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
244AR-01.c.11	Release of radioactive aerosols from vessel headspace into canyon atmosphere due to ventilation system filter plugging	Air heaters off (steam supplied)	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.
244AR-02.a.08	Release of radioactive liquid into cells due to jumper leak causing release of aerosols through cracks.	Jumper Leak (general)	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls (Leak Detect) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	None	None	These controls address this hazardous condition by notifying personnel of leak.
244AR-02.a.09	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper Leak (general)	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Salt Well Flow Totalizer **SC:** Trans Leak Detect Sys **SS:** Tank Level Mon Sys	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak detection/ Cntrl) **AC:** Emergency Prep (Significant release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by notifying personnel of leak.
244AR-02.a.10	Release of radioactive liquid into cells due to jumper leak	Jumper (B plant to AY farm through cell) leak	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls (Leak Detect) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	None	None	These controls address this hazardous condition by notifying personnel of leak.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
244AR-02.a.11	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper (B plant to AY farm through cell) leak	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Salt Well Flow Totalizer **SC:** Trans Leak Detect Sys **SS:** Tank Level Mon Sys	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak detection/ Cntrl) **AC:** Emergency Prep (Significant release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by notifying personnel of leak.
244AR-02.a.12	Release of radioactive liquid into cells due to tank leak	Tank leak	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
244AR-03.a.06	Release of radioactive aerosols from tanks headspace due to steam pressure control failure for jetting system	Jetting operation with failure of jetting steam pressure regulation	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-03.a.13	Release of radioactive aerosol being jetted from tank or sump due to overflow into sump	Jetting activities moving material from sump or another tank	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
244AR-03.a.14	Release of radioactive liquid being jetted from tank or sump due to overflow of tank	Inter-facility tank transfers	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-07.a.02	Radioactive contamination back flow into steam system due to steam supply failure	Steam supply failure	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
244AR-07.a.03	Radioactive contamination back flow into steam system due to compressed air failure	Steam supply failure and Air blow failure	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because steam has been isolated from 244-AR.
90D-01	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from internal chemical, thermal or radiolysis reactions; corrosion, freeze-thaw cycles	None	None	None	AC: Emergency Prep	This control addresses this hazardous condition by minimizing personnel exposure.
90D-02	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from external impact from handling error, forklift, handling equipment airborne missile from wind, seismic	None	None	None	AC: Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing personnel exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
90D-03	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to container breach	Container breach from airborne missile from wind, or from a seismic event	None	None	None	AC: Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing personnel exposure.
90D-04	Release of radioactive and toxic aerosols/vapors from 90 day storage pad due to fire or explosion	Waste ignition from spontaneous combustion, incompatible wastes, heat from sun, waste handling or other human activities	None	None	None	AC: Emergency Prep (Fire)	This control addresses this hazardous condition by minimizing personnel exposure.
90D-06	Release of radioactive and toxic aerosols/vapors from Intmediate Holding Area due to container breach	Container breach from internal chemical, thermal or radiolysis reactions; corrosion, freeze-thaw cycles	None	None	None	AC: Emergency Prep	This control addresses this hazardous condition by minimizing personnel exposure.
90D-07	Release of radioactive and toxic aerosols/vapors from Intermediate Holding Area due to container breach	Container breach from external impact from handling error, forklift, handling equipment airborne missile from wind, seismic	None	None	None	AC: Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing personnel exposure.
90D-08	Release of radioactive and toxic aerosols/vapors from Intermediate Holding Area due to container breach	Container breach from airborne missile from wind, or from a seismic event	None	None	None	AC: Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing personnel exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
90D-11	Release of radioactive and toxic aerosols/vapors from waste transport vehicle due to loss of waste confinement	Failure to secure waste, vehicle accident, improper packaging, waste reactions	None	None	None	**AC:** Emergency Prep	This control addresses this hazardous condition by minimizing personnel exposure.
CCF-02	Radioactive and hazardous release from tanks due to short term loss of ventilation	Loss of offsite power	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	None	**AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by inspection of HEPA filters.
CCF-03	Degraded ventilation performance at 702 A due to condensed water vapors on HEPAs	Sustained loss of water supply (month)	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by minimizing filter source term accumulation, filter degradation and mitigating filter breakthrough.
CCF-04	Degraded ventilation performance at 702 A due to condensed water vapors on HEPAs	Sustained loss of steam supply	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SS:** Ventilation Sys CAM Interlock	**LCO:** Ventilation CAM Interlock Syss **AC:** HEPA Filter Cntrls (Source Term)	These controls address this hazardous condition by minimizing filter source term accumulation, filter degradation and mitigating filter breakthrough.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
CCF-16	Subsurface releases of radioactive or hazardous material due to leaks in multiple tanks	Tanks, tank penetrations and tank components deteriorate due to corrosion	**SC:** Temperature Mon	**LCO:** SST Waste Temperature Cntrols **AC:** Trans Cntrls (pH)	**SC:** Primary Tank Leak Detect (where present) **SS:** Tank Level Mon Sys **SC:** Temperature Mon	**LCO:** Primary tank leak Detect Syss **LCO:** SST Waste Temperature Cntrols	These are applicable controls from the accident analysis. Temperature monitoring prevents one possible tank failure cause and is a possible indicator of tank leak (tank heat-up). PH control on transfers to tank farm mainitan tank waste pH>7. Facility worker exposure controlled by Radiation Protection Program.
CDP-01	Release of radioactive contamination to soil surface from crib or ditch due to animal intrusion	Animal intrusion into crib or ditch	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CDP-03	Release of radioactive contamination to soil surface from inactive pond due flooding in crib or ditch	Flooding	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
CDP-06	Release of radioactive contamination to atmosphere from inactive pond due to high wind/tornado disturbing inactive pond	High winds/tornadoes	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CDP-08	Release of airborne radioactive contamination from contaminated vegitation due to fire in weed growth on top of cribs or ditches	Range fire	None	None	None	**AC:** Emergency Prep (Fire in Contaminated Area)	This control addresses this hazardous condition by minimizing exposure.
COB-02	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid in place	None	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by prevention/ minimizing of leak.
COB-03	Release of radioactive and/or hazardous material from COB due to spray leak	Piping leak into COB due to chemical reaction degrading pipe, lid in place	None	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls[E]	These are applicable controls from the accident analysis. These controls address this hazardous condition for worker risk by preventing mis-transfers and minimizing exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
COB-05a	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and lid removed	Inspection of COB	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
COB-05b	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and lid off during high wind	High wind with COB cover off	None	None	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by minimizing release.
COB-05c	Release of radioactive and/or hazardous material from COB due to flooding	Flooding of COB due to rain/snow melt	None	None	**SC:** Trans Sys Leak Detect	**LCO:** Trans Sys Leak Detect	These controls address this hazardous condition by minimizing release.
COB-05d	Release of radioactive and/or hazardous material release from COB due to vehicle accident	Vehicle accident involving COB	None	**AC:** Ign Cntrls (Vehicle)	None	None	This control addresses this hazardous condition by minimizing vehicle accidents.
COB-05e	Release of radioactive and/or hazardous material from COB due to seismic event	Seismic event	None	None	None	**AC:** Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing exposure.
COB-05f	Release of radioactive and/or hazardous material from COB due to existing contamination inside COB and COB lid off	Human error leaving COB lid off	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	None	None	These controls address this hazardous condition by minimizing exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
COB-06a	Release of radioactive and/or hazardous material from COB due to COB caisson pressurized	Weather heatup with HEPA filter plugged	None	None	None	None	No applicable SSCs or TSRs - Hazardous condition not credible because COBs are not airtight (No HEPA filters).
COB-06b	Release of radioactive and/or hazardous material from COB due to COB caisson pressurized	Leak into COB with HEPA filter plugged	None	None	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by prevention/ minimizing of leak. (No HEPA filters in COB configuration).
CRN-01	Release of radioactive and/or toxic materials from riser due to breach by crane movement	Human errors or failure to follow safe work practices	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by controlling lifts.
CRN-01-I	Release of radioactive and/or toxic materials from riser breach due to crane movement	Human errors or failure to follow safe work practices	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by controlling lifts.
CRN-02	Release of radioactive and/or toxic materials from riser due to breach by crane movement	Mechanical failures of crane (brakes, throttle)	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by controlling lifts.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
CRN-05-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Human error in positioning crane load	None	**AC:** Ign Cntrls (Vehicles) **AC:** Dome Loading (Lifting Cntrls)	None	**AC:** Emergency Prep (Fire in Contaminated Area)	These controls address this hazardous condition by preventing fuel spill and minimizing exposure.
CRN-06-I	Release of radioactive and/or toxic materials from surface contamination and fuel tank on crane or support vehicle due to fuel tank fire (see In-Facility Equipment Installation for facility fires)	Mechanical failure in positioning crane load causes crane fuel tank rupture and fire	None	**AC:** Ign Cntrls (Vehicles) **AC:** Dome Loading (Lifting Cntrls)	None	**AC:** Emergency Prep (Fire in Contaminated Area)	These controls address this hazardous condition by preventing fuel spill and minimizing exposure.
CRN-17	Release of radioactive or toxic material from tanks due to power failure from crane hitting power lines/supplies	Human error: improper load assembly, rigging, crane positioning	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by controlling lifts.
CVR-01	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Failure to monitor or improper monitoring	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CVR-01-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to monitoring failure	Failure to monitor or improper monitoring	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
CVR-02	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Mechanical failure of equipment in pit (corrosion, leaks, etc)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CVR-02-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to mechanical failures	Mechanical failure of equipment in pit (corrosion, leaks, etc)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CVR-03	Release (greater than expected) of radioactive or hazardous material from pit due to lifting cover blocks	Wind or dust devil	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CVR-03-I	Release of greater than expected amount of radioactive or hazardous material from pit upon lifting coverblocks due to windy conditions	Wind or dust devil	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
CVR-12-I	Release of radioactive or hazardous material from pit upon lifting coverblocks due to incorrect spraying of fixative	Spraying of fixative (Soil Cement) causes spray of material out of pit	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
CVR-13-I	Release of radioactive or hazardous material from pit upon lifting coverblocks due to open nozzles or risers in pit	Open nozzles or risers in pit with radioactive or hazardous material inside	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
DCN-02	Release of radioactive or toxic material outside immediate area from equipment removed from tank due to decontamination of equipment	Miss direction of cleaning spray (human error)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
EE-02	Release of radioactive contaminants from tank farms due to external fires	Range fire	None	None	None	AC: Emergency Prep (Fire in Contaminated Area)	This control addresses this hazardous condition by minimizing exposure.
EE-09	Surface flooding at tank farm	Water line breaks and causes flooding at tank farm	None	AC: Tank Service Water Intrusion Mon Program.	None	None	This control addresses this hazardous condition by detecting water line breakage.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
I-222S-1-CMP-A	Release of 222-S lab waste from transfer line due to leak from rapid corrosion caused by transfer of pH 1 solution.	Human Error - Failure to add NaOH	None	**AC:** Trans Cntrls (pH)	None	None	This control addresses this hazardous condition by controlling transfers.
I-222S-2-FLW-A	Release (steam) of aerosols and particulates to the atmosphere due to reverse flowing steam into TK-102 which saturates the HEPAs.	Block valve inadvertently closed at tank farms AND Transfer via this line	None	**AC:** Trans Cntrls (Mis-routing)	None	None	This control addresses this hazardous condition by preventing mis-routing. Hazardous condition not credible because steam supply in 200W disconnected.
I-242A-4-FLW-A	Release of diluted high level waste to the ground through risers after unmitigated over filling of TK-AW-102 tank and annulus with condensate.	Tube rupture of raw water in condenser	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by indicating leak and minimizing release.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
I-242A-6-FLW-A	Release of diluted high level waste to the ground through risers after unmitigated over filling of TK-AW-102 tank and annulus with raw water.	Rupture of raw water line in condenser / pump room	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect	**SC:** Trans Leak Detect Syss **SC:** Primary Tank Leak Detect Syss **SS:** Trans Sys Covers	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **LCO:** Primary Tank Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by indicating leak and minimizing release.
I-242S-1-PRS-A	Release of airborne contaminates through cracks due to over pressurization of 242-S building and contamination of control room where tank farm controls are located.	Exhaust fan failure.	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
I-242S-1-TMP-A	Release of contaminated water to the ground outside of the 242-S Evaporator due to unmitigated leak in the pump room from the fire protection system's frozen and ruptured line.	Low ambient temperature freezes and breaks pipe.	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
I-242S-4-LEK-B	Release of contaminated water to the atmosphere due to spray leak at the condenser room, caused by corrosion in the pipe.	Corrosion in pipe line.	None	None	None	None	This is not a TWRS related event.
I-242T-3-FLW-A	Release of high level waste to the ground surface by overflowing the "new" diversion box caused by opened or leaking valve.	Block valve inadvertently opened or leaking	None	None	None	**AC:** Emergency Prep	This control addresses this hazardous condition by minimizing exposure.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
I-242T-4-FLW-A	Release of high level waste to the ground surface from overflowing the "new" diversion box due to failure of 242-T building and rupture of tanks in 242-T.	Catastrophic failure of the building due to aging effects	None	None	None	**AC:** Emergency Prep	This control addresses this hazardous condition by minimizing exposure.
I-PFP-1-LVL-A	Release (underground) of TRU mixed waste at DCRT pit due to: Potential to send steam vapor to 244-TX-DCRT. Potential for thermal expansion to damage transfer pipe. Potential for leak to encasement pipe which drains to DCRT pit.	Human Error - Failing to stop transfer to 244-TX when tank D-5 is empty.	**SS:** Pipe Encasements	**AC:** Trans Cntrls **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SS:** Pipe Encasements **SS:** Trans Leak Detect Syss	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by indicating leakage and minimizing exposure.
I-PFP-3-FLW-C	Release of TRU mixed waste from 244-TX overfilling due to transferring waste from PFP tanks D-7 or D-8 to D-5 while transferring from D-5 to 244-TX.	Transferring from D-7 or D-8 to D-5 while transferring from D-5 to 244-TX	None	**AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leak and minimizing exposure.
I-PUREX-1-TMP-A	Release from 105AW through cracks in the cover block due to pressurizing 105AW from addition of hot waste to the tank.	Human Error - Adding caustic (NaOH) to waste or transferring to U-3 via a steam jet AND Transferring from U-3 to 105AW before the waste cools	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss	None	None	These controls address this hazardous condition by monitoring tank vacuum.
I-PUREX-2-PRS-B	Release of aerosols through cracks in the cover block due to pressurizing the receiver tank from an extended air purge of the transfer line.	Extended air purge after transfer (Mechanical Failure)	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss	None	None	These controls address this hazardous condition by monitoring tank vacuum.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
I-PUREX-3-TMP-A	Release of aerosols from 105AW through cracks in the cover block due to pressurizing 105AW from addition of hot waste to the tank.	Human Error - Adding caustic (NaOH) to waste or transferring to U-3 via a steam jet AND Transferring from U-3 to 105AW before the waste cools	SC: DST/ AWF Ventilation	LCO: DST and AWF Tank Ventilation Syss	None	None	These controls address this hazardous condition by monitoring tank vacuum.
I-PUREX-4-PRS-B	Release of aerosols through cracks in the cover block due to pressurizing the receiver tank from an extended air purge of the transfer line.	Extended air purge after transfer (Mechanical Failure)	SC: DST/ AWF Ventilation	LCO: DST and AWF Tank Ventilation Syss	None	None	These controls address this hazardous condition by monitoring tank vacuum.
I-PUREX-5-FLW-A	Release of aerosols through cracks in cover block due to pressurizing receiver tank caused by transferring waste with steam which heats the waste.	Multiple deactivation locks removed and valves opened or multiple valves leaking.	SC: DST/ AWF Ventilation	LCO: DST and AWF Tank Ventilation Syss	None	None	These controls address this hazardous condition by monitoring tank vacuum.
ITK-01-I	Release of radioactive and/or hazardous material from point of in-facility access due to chemical/thermal reaction (non-fire, non-explosion)	Chemical/thermal reaction of materials in equipment/waste	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-03	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to intrusive activity	Contaminated equipment removed or reused	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
ITK-03-I	Release of radioactive and/or hazardous material from point of in-facility access due to equipment removal (non-fire, non-explosion)	Contaminated equipment removed or reused	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-04	Release of radioactive and/or hazardous material from point of in-tank access (non-fire, non-explosion) due to earthquake or high wind with open access	Seismic event or high wind when access open	None	None	None	**AC:** Emergency Prep (Seismic)	This control addresses this hazardous condition by minimizing personnel exposure.
ITK-07	Radioactive and/or hazardous material release from tank below grade (non-fire, non-explosion) due to intrusive activity	Dropped equipment in tank from human error or equipment failures (also see crane operations) Penetration of tank with linear-force, high pressure, or rotational equipment from human error or equipment failure	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis. This control also addresses this hazardous condition for worker risk by preventing equipment drop.
ITK-FR-01	Release of radioactive or hazardous material from flex receiver due to flushing with insufficient drainage	Riser not drained correctly or drain clogged causing plugging of riser	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
ITK-FR-02	Release of radioactive or hazardous material from flex receiver due to equipment jam in riser and non-procedural efforts to dislodge	Equipment becomes lodged in riser upon retrieval and non-procedural efforts to remove provide release path for tank material and/or flush water	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-05	Release of radioactive or hazardous material from flex receiver due to structural failure	Human error tears flex receiver bag	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-06	Release of radioactive or hazardous material from flex receiver due to structural failure	Equipment failure/misalignment tears flex receiver bag (crane operation, hydraulic jack stand)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-07	Release of radioactive or hazardous material from flex receiver due to structural failure	Structural degradation	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
ITK-FR-14	Release of radioactive or hazardous material from flex receiver due to leak from flanges	Non-acceptable torque on bolts connecting bellows - torque too low not enough pressure for adequate seal, to high destroys seal material	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-15	Release of radioactive or hazardous material from flex receiver due to errors in installation	Incorrect installation of receiver provides release path (misalignment of bellows)	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-18	Release of radioactive or hazardous material from flex receiver due to damage from operation of hydraulic jacks	Hydraulic jacks on assembly stand are operated while assembly is bolted to flange damaging flex receiver or riser creating release path	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-20	Release of radioactive or hazardous material from flex receiver due to wrong bag being used	Containment bag is too short to hold equipment being withdrawn from tank, condition goes unnoticed until containment is lost	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
ITK-FR-21	Release of radioactive or hazardous material from flex receiver due to operation in extreme weather	Operation in cold weather compromises strength of flex receiver, equipment breaks providing release path	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-23	Release of radioactive or hazardous material from flex receiver due to equipment failure	Plexiglass window on receiver breaks causing release path	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-26	Release of radioactive or hazardous material from flex receiver due to leak from bag	Equipment mispositioned in receiver bag creating inappropriate seal and leak	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
ITK-FR-28	Release of radioactive or hazardous material from flex receiver due to containment breach during transfer	Receiver trailer falls over with bagged equipment attached ripping bag and creating release path	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
NP-01	Radioactive and hazardous material release from tanks and ventilation system due to loss of electric power	Lightning strikes power distribution system	None	AC: Ign Cntrls (Lightning)	None	None	This control addresses this hazardous condition by minimizing lightning strikes and stopping intrusive activities.
NP-06	Radioactive and hazardous material releases from tanks, nearby ground surfaces, and ventilation systems due to above ground disturbances	High wind	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
NP-12	Radioactive and hazardous material releases from tanks due to ventilation system failures	Dust storms/dust devils	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
NP-14	Radioactive and hazardous material releases from tanks due to loss of power to ventilation systems	Severe Hail	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
OGT-OPS1-01	Release of radioactive or hazardous material from the primary pipe due to line crushing from equipment drop	Drop shield blocks on transfer line during disassembly after pumping complete Potential to break primary and secondary line	None	AC: Dome Load Cntrls (Lifting Cntrls)	None	None	This control addresses this hazardous condition by preventing equipment drop.
RSR-01	Release of radioactive and/or toxic material upon opening of riser due to human error	Human error: improper contamination control, failure to monitor (rad or sniff), improper monitoring	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
RSR-01-I	Release of radioactive and/or toxic material from the vapor space due to opening of riser	Human error: improper contamination control, failure to monitor (rad or sniff), improper monitoring	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
SFF-01	Release of radioactive and/or toxic materials during sniff sampling due to human error or instrument failure	Improper sniffing technique or instrument failure, failure to perform radiation monitoring, improper monitoring, or instrument failure	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
VSU-01	Release of residual contamination and/or hazardous material from VSU due to VSU lid being left off	VSU lid is left off due to human error, wind blows	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
VSU-02	Release of residual contamination and/or hazardous material from VSU due to VSU lid being left off	VSU lid is left off due to human error, rain/snow melt seeps out bottom of VSU	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
VSU-03	Release of residual contamination and/or hazardous material from VSU due to VSU wall degradation	VSU wall degradation over time	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.
VSU-04	Release of residual contamination and/or hazardous material from VSU due to internal VSU pressurization	Covered VSU pressurizes due to ambient temperature heat-up	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Radiation Protection Program.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-01-PRES02	Release of liquid radioactive waste from transfer pipe due to damaged saltwell pump	Leak from pump or seal from various causes	None	**AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Salt Well Flow Totalizer **SS:** Tank Level Mon Sys	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-rout / Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Significant Release)	These controls address this hazardous condition for worker risk by indicating leak and minimizing releases. The applicable controls for environmental release are identified from the accident analysis.
XS-01-TEMP02	Release of steam-aerosol from transfer piping in pump pit due to steam hammer and resulting pipe damage	Extended recirculation and consequential heating of saltwell liquid with sudden opening of valve when cover block is in place	None	None	**SC:** Trans Sys Covers **SC:** Trans Sys Leak Detect	**LCO:** Trans Sys Covers **LCO:** Trans Sys Leak Detect	This control addresses this hazardous condition by indicating leakage and minimizing exposure. Liquid flashing to steam in not credible.
XS-02-FLOW06	Release of liquid radioactive waste from DCRT due to overflowing of PFP sending tank (in facility)	Reverse flow caused by jumper misalignment	None	**AC:** Trans Cntrls (Mis-routing)	None	None	This control addresses this hazardous condition by preventing mis-routing.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-03-LEVE	Release of radioactive liquids from DCRT "annulus" (Vault) due to DCRT leak	Corrosion or structural failure of DCRT or associated piping	None	None	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Tank Level Monitor Sys **SS:** Salt Well Flow Totalizer	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Mass Balance)	These controls address this hazardous condition for worker risk by indicating leak and minimizing releases. These are also applicable controls from the accident analysis for environmental concerns. (DCRTs normally only contain waste during transfer operations)
XS-03-PRES01	Release of toxic vapors from DCRT due to increased concentrations in DCRT atmosphere	Tank isolated from forced ventilation with gas evolution	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.
XS-03-PRES01A	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow due to failure of ventilation fans causes positive pressure in tank	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-03-PRES02	Release of radioactive aerosols from DCRT headspace due to positive pressure	Dampers inadvertently closed causing positive pressure in tank	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-03-PRES03	Release of radioactive aerosols from DCRT headspace due to positive pressure in DCRT	Ductwork damage due to external event causes positive pressure in DCRT	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-03-PRES04	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of power causes positive pressure in tank	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-03-TEMP05	Release of radioactive aerosols from DCRT headspace due to positive pressure	Excessive agitation-pumping causes positive pressure and generates aerosols	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-03-TEMP06	Release of toxic vapors from DCRT headspace due to positive pressure in DCRT	Excessive agitation-pumping causes positive pressure	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-03-TEMP07	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow due to HEPA filter blockage in cold weather causes positive pressure in tank	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-03-TEMP08	Release of radioactive aerosols from DCRT headspace due to positive pressure	Loss of ventilation flow plus high heat waste causes positive pressure in tank	None	**AC:** HEPA Filter Cntrls (Filter Efficiency)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**AC:** HEPA Filter Cntrls (Source Term) **AC:** Trans Sys Covers	These controls address this hazardous condition by inspection of HEPA filters and cover block status.
XS-06-FLOW06	Release of radioactive aerosols from DCRT annulus due to a spill of radioactive liquid	Overfilling DCRT due to a misrouting causes spill into DCRT annulus	None	**AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	**SC:** Trans Leak Detect Syss **SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These controls address this hazardous condition by indicating leak and minimizing exposure.
XS-12-FLOW01	Release of toxic gas from diversion box due to accumulation of toxic vapors from catch tank	Chemical reaction of catch tank material with backflow of vapors via diversion box drain line	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-12-FLOW04	Release of toxic gas from diversion box due to accumulation of toxic vapors from catch tank	Radiolysis of catch tank material with backflow of vapors via diversion box drain line	None	None	None	None	No applicable SSCs or TSRs - Facility worker exposure controlled by Health & Safety Plan.
XS-12-FLOW06	Release of radioactive waste to the soil from diversion box drain due to a spill of radioactive liquid into 241-U-152 diversion box	Leak of diversion box drain line upstream of catch tank	None	**AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Salt Well Flow Totalizer **SS:** Tank Level Mon Sys	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-rout) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by indicating leak and minimizing releases.
XS-26-PRES01 A 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Blockage of exhaust path causes pressure in tank	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **AC:** Flammability Cntrls (Pressurization)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls (Tracking)	These controls address this hazardous condition by monitoring ventilation operation and cover block status, and by inspection of HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-26-PRES02A 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Failure of ventilation fans causes pressure in tank	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **AC:** Flammability Cntrls (Pressurization)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls (Tracking)	These controls address this hazardous condition by monitoring ventilation operation and cover block status, and by inspection of HEPA filters.
XS-26-PRES03	Release of radioactive aerosols from TK-102-SY due to positive pressure	Use of hot water to decontaminate equipment in tank atmosphere-- generate aerosols and pressurizes the tank	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **AC:** Flammability Cntrls (Pressurization)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls (Tracking)	These controls address this hazardous condition by monitoring ventilation operation and cover block status, and by inspection of HEPA filters.
XS-26-PRES03 102AW-02-PRES	Release of radioactive aerosols from TK-102-SY due to positive pressure	Loss of power to ventilation system causes positive pressure in tank	**SC:** DST/ AWF Ventilation	**LCO:** DST and AWF Tank Ventilation Syss **AC:** Flammability Cntrls (Pressurization)	**SC:** Trans Sys Covers **SS:** HEPA Filters	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls (Tracking)	These controls address this hazardous condition by monitoring ventilation operation and cover block status, and by inspection of HEPA filters.

Table 3.5-2. Safety SSCs and TSRs for Potential S1 Consequences with F3 Frequency.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO
XS-41B-LEVE02	Release of toxic gas from vent station access pit via valve operator seals due to liquid accumulation in vent station nozzle pit	Overflow of vent station catch tank into nozzle pit causes tank gas accumulation	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls (Leak Detect) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	None	None	These controls address this hazardous condition by notifying personnel of leak.
XS-41B-LEVE04	Release of radioactive liquid from vent station access pit via valve operator seals due to liquid accumulation in vent station nozzle pit	Overflow of vent station catch tank into nozzle pit	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Pump Admin Lock Cntrls (Leak Detect) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl)	None	None	These controls address this hazardous condition by notifying personnel of leak.
XS-41C-LEVE03	Release of toxic gas from vent station catch tank pit due to presence of liquid waste in pit	Backflow from cross-site piping encasement leak causes tank gas accumulation	None	None	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls	These controls address this hazardous condition by indicating leak and minimizing releases.

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Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
ABBREVIATION LIST : Admin - Administrative; Cntrls - Controls; Detect - Detection; Ign - Ignition; Mon - Monitoring; Prep - Preparedness; Sys - System; Syss - Systems; Trans - Transfer									
102AW-02-LEVE02	Release of liquid radioactive waste from 102-AW due to leak of primary and secondary tank	Structural failure of primary tank when annulus leaks	None	None	**SC:** Primary Tank Leak Detect Syss **SS:** Tank level Syss	**LCO:** Primary tank leak Detect Syss	These are applicable controls from the accident analysis.	E3	S1
102AW-02-LEVE06	Release of radioactive liquid to soil column from 102-AW annulus due to leakage	Primary tank leakage from various causes combined with annulus leakage	None	None	**SC:** Primary Tank Leak Detect Syss **SS:** Tank level Syss	**LCO:** Primary tank leak Detect Syss	These are applicable controls from the accident analysis.	E3	S1
106C-01Ra	Release of radioactive and/or hazardous material from tank C-106, due to high dT in tank because cold water addition, caused thermal stress and cracks, resulting in tank leaks	Water addition temperature cold	None	None	**SS:** Tank Level Mon Sys	None	These are applicable controls from the accident analysis.	E3	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
106C-01Sa	Release of radioactive and/or hazardous material from tank C-106, due to low tank level because of tank leak	Waste tank leak	**SS:** Temperature Mon	**LCO:** SST Waste Temperature Cntrls	**SS:** Tank Level Mon Sys **SS:** Temperature Mon	**LCO:** SST Waste Temperature Cntrls	These are applicable controls from the accident analysis. Temperature monitoring prevents one possible tank failure cause and is a possible indicator of tank leak (tank heat-up). Facility worker exposure controlled by Radiation Protection Program.	E3	S1
106C-12G	Release of radioactive and/or hazardous material from tank C-106, due to high dT in tank because cold water addition caused thermal stress and cracks resulting in tank leaks	Tank truck water temperature cold	None	None	**SS:** Tank Level Mon Sys	None	These are applicable controls from the accident analysis.	E3	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
CCF-16	Subsurface releases of radioactive or hazardous material due to leaks in multiple tanks	Tanks, tank penetrations and tank components deteriorate due to corrosion	**SC:** Temperature Mon	**LCO:** SST Waste Temperature Cntrols **AC:** Trans Cntrls (pH)	**SC:** Primary Tank Leak Detect (where present) **SS:** Tank Level Mon Sys **SC:** Temperature Mon	**LCO:** Primary tank leak Detect Syss **LCO:** SST Waste Temperature Cntrols	These are applicable controls from the accident analysis. Temperature monitoring prevents one possible tank failure cause and is a possible indicator of tank leak (tank heat-up). PH control on transfers to tank farm mainitan tank waste pH>7. Facility worker exposure controlled by Radiation Protection Program.	E3	S1
CRN-21	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	Human error: improper load assembly, rigging, positioning error	None	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis.	E3	S0
CRN-22	Release of radioactive or toxic materials from tank due to loss of vertical load control, dropping crane load into tank, onto tank bottom (subsurface leak)	Mechanical failure: corrosion, faulty materials, hydraulics	None	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis.	E3	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
EE-10	Release of radioactive and hazardous materials from tanks due to loss of tank integrity	Water line breaks, saturates subsurface, and hydrostatic head causes tank to float	**SS:** Service Water Flow Totalizer	**LCO:** SST - Waste Temperature Cntrls **AC:** Trans Cntrls (pH)	None	None	These are applicable controls from the accident analysis. Tank floating from sub-surface hydrostatic head considered incredible.	E3	S1
ITK-07	Radioactive and/or hazardous material release from tank below grade (non-fire, non-explosion) due to intrusive activity	Dropped equipment in tank from human error or equipment failures (also see crane operations) Penetration of tank with linear-force, high pressure, or rotational equipment from human error or equipment failure	None	**AC:** Dome Load Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis. This control also addresses this hazardous condition for worker risk by preventing equipment drop.	E3	S1
NP-09	Radioactive and hazardous material releases from tanks due to seismic event	Earthquake results in tank leaks or below grade tank ruptures	None	None	None	**AC:** Emergency Prep (Seismic)	These are applicable controls from the accident analysis.	E3	S1
RSR-05	Release of radioactive and toxic materials from tank (below grade) due to tank breach from dropped equipment (tools, mirrors, gauge plugs) into tank	Failure to attach lanyard or other position limiting device Failure of lanyard or device	None	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis.	E3	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
XS-03-TEMP09	Release of liquid radioactive waste from DCRT due to flow path to soil	Exceeding structural limits on tank due to high temperature caused by transfer of steam from PFP as well as vault leak	None	None	**SS:** Tank Level Monitor Sys	**AC:** Trans Cntrls (Mass Balance)	These are applicable controls from the accident analysis. (DCRTs normally only contain waste during transfer operations)	E3	S0
XS-05-FLOW02	Release of liquid radioactive waste from DCRT due to flow path to soil	Exceeding structural limit on tank due to replacement of exhaust fan with higher capacity fan and blockage of ventilation inlet concurrent with vault leak	None	None	**SS:** Tank Level Monitor Sys	**AC:** Trans Cntrls (Mass Balance)	These are applicable controls from the accident analysis. (DCRTs normally only contain waste during transfer operations)	E3	S0
102S-04.a1b	Release of radioactive contaminants in Tank S-102 liquid waste to the soil due to crack in Tank with water intrusion	Structural or other stresses	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	None	None	These are applicable controls from the accident analysis. Service water leak is the only significant source of water intrusion.	E2	S0
102S-04.a1bb	Release of radioactive contaminants in Tank S-102 liquid waste to the soil due to crack in Tank with water intrusion	Corrosion	**SS:** Service Water Flow Totalizer	**AC:** Tank Service Water Intrusion Mon Program	None	None	These are applicable controls from the accident analysis. Service water leak is the only significant source of water intrusion.	E2	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
107AN-01-LEVE03	Release of caustic material from truck tank due to leak	Failure to secure truck	None	None	None	None	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established for 4 mil thickness plastic sleeving around delivery piping, limitation of the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used. Facility worker exposure controlled by Health & Safety Plan.	E2	S1

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
107AN-02-FLOW03	Release of concentrated caustic solution to surface from transfer piping due to leak	Caustic solution transfer line leak	None	None	None	None	No specific TSR controls were identified because the hazard is solely toxicological. A non-TSR control is established for 4 mil thickness plastic sleeving around delivery piping, limitation of the caustic delivery system to be less than or equal to 125 psi, and use of schedule 10 steel pipe as a minimum thickness for caustic delivery if used.	E2	S1
114SX-04.b.1.a.3	Release of radioactive liquids to the soil from tank SX-114 due to tank bottom failure	Human Error: Closure of SX-114 exhaust butterfly valve isolating tank from exhaust plenum. Resulting in tank degradation	**SC:** Ventilation Sys **SS:** Temperture Mon	**LCO:** SST Waste Temperature Cntrls **LCO:** SST Ventilation Sys	None	None	These are applicable controls from the accident analysis.	E2	S0
114SX-04.b.1.b.3a	Release of radioactive liquids to the soil from tank SX-114 due to tank bottom failure	Ducting failure due to bad welds reduces heat removal rate Resulting in tank degradation	**SC:** Ventilation Sys **SS:** Temperture Mon	**LCO:** SST Waste Temperature Cntrls **LCO:** SST Ventilation Sys	None	None	These are applicable controls from the accident analysis.	E2	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
114SX-04.b.1.b.3b	Release of radioactive liquids to the soil from tank SX-114 due to tank bottom failure (Leak to soil)	Tank failure due to Seismic activity Resulting in tank degradation	None	None	None	**AC:** Emergency Prep (Seismic)	These are applicable controls from the accident analysis.	E2	S0
114SX-04.b.1.c.3	Release of radioactive liquids to the soil from tank SX-114 due to tank bottom failure (From high heat)	Exhauster failure Fan failure Filter Rupture (low diff. pressure shutdown) Resulting in tank degradation	**SC:** Ventilation Sys **SS:** Temperture Mon	**LCO:** SST Waste Temperature Cntrls **LCO:** SST Ventilation Sys	None	None	These are applicable controls from the accident analysis.	E2	S0
114SX-04.b.1.d.3	Release of radioactive liquids to the soil from tank SX-114 due to tank bottom failure	Filter plugging results in lack of heat removal with high temperatures degrading dome strength	**SC:** Ventilation Sys **SS:** Temperture Mon	**LCO:** SST Waste Temperature Cntrls **LCO:** SST Ventilation Sys	None	None	These are applicable controls from the accident analysis.	E2	S0
114SX-06.a.2	Radioactive liquids released to the soil due to failure of Tank SX-114 from corrosion	Corrosion AND Addition of Liquid	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S0
244AR-02.a.06	Release of radioactive liquid contained in a cell due to leak pathways in the cell structure	Rain or snow water intrusion	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
244AR-02.a.09	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper Leak (general)	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Salt Well Flow Totalizer **SC:** Trans Leak Detect Sys **SS:** Tank Level Mon Sys	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak detection/ Cntrl) **AC:** Emergency Prep (Significant release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by notifying personnel of leak.	E2	S1
244AR-02.a.11	Release of radioactive liquid to soil from leaking sump filled by leaking jumper	Jumper (B plant to AY farm through cell) leak	**SC:** Trans Leak Detect Syss	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SS:** Salt Well Flow Totalizer **SC:** Trans Leak Detect Sys **SS:** Tank Level Mon Sys	**LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak detection/ Cntrl) **AC:** Emergency Prep (Significant release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by notifying personnel of leak.	E2	S1
244AR-02.a.13	Release of radioactive liquid to soil from leaking sump filled by leaking tank	Tank leak	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S0
CDP-04	Release of radioactive contamination to soil surface from inactive pond due to flooding of inactive pond	Flooding	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
CDP-07	Release of liquid radioactive contamination to soil surface from active pond due to unspecified phenomena	Unspecified phenomenia	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S0
COB-02	Release of radioactive and/or hazardous material from COB due to spray leak	Flange, gasket, or valve, spray leak with COB lid in place	None	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by prevention/ minimizing of leak.	E2	S1
COB-03	Release of radioactive and/or hazardous material from COB due to spray leak	Piping leak into COB due to chemical reaction degrading pipe, lid in place	None	**AC:** Trans Cntrls (Mis-routing) **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers	**LCO:** Trans Sys Covers **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls	These are applicable controls from the accident analysis. These controls address this hazardous condition for worker risk by preventing mis-transfers and minimizing exposure.	E2	S1
CRN-21-IA	Release of radioactive or toxic materials from underground facility bottom due to loss of vertical load control, dropping crane load into facility (subsurface leak)	Human error: improper load assembly, rigging, positioning error	None	**AC:** Dome Loading Cntrl	None	None	These are applicable controls from the accident analysis.	E2	S0

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
CRN-22-IA	Release of radioactive or toxic materials from facility bottom due to loss of vertical load control, dropping crane load into facility	Mechanical failure: corrosion, faulty materials, hydraulics	None	AC: Dome Loading Cntrl	None	None	These are applicable controls from the accident analysis.	E2	S0
DCN-04-I	Decon personnel are contaminated, release of aerosol outside immediate area from equipment being decontaminated due to wind	Wind/Tornado	None	None	None	None	There are no applicable controls from the accident analysis.	E2	S1
ITK-07-IB	Release of radioactive and/or hazardous material from facility at surface due to breach of facility confinement (non-fire, non-explosion)	Dropped equipment in facility from human error or equipment failures (also see crane operations)!Penetration of facility confinement with linear-force, high pressure, or rotational equipment from human error or equipment failure	None	AC: Dome Loading Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis.	E2	S1

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
OGT-FLOW2-01A	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Incorrect pump installed creates excessive flow and isolation valve closed on secondary pipe Erosion of EPDM AND Pressurization of secondary pipe causing leaks from flanges gasket within concrete shield	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release)	These are applicable controls from the accident analysis.	E2	S1
OGT-FLOW2-03A	Release of radioactive or hazardous material from the primary pipe due to leak caused by incorrect pump installed	Installation of incorrect pump AND Failure of inner pipe AND Isolation valves closed on secondary pipe drains causing leak from failed welds on flange within the concrete shield	**SC:** OGT Encasement and Connections **SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Prevention/ Detect/ Cntrl) **AC:** Encasement Seal Loops	**SC:** Trans Leak Detect Syss **SS:** Tank Level Mon Syss **SS:** Salt Well Flow Totalizer	**AC:** Trans Leak Detect Syss **AC:** Trans Cntrls (Leak Detect/ Cntrl) **AC:** Encasement Seal Loops **AC:** Emergency Prep (Significant Release)	These are applicable controls from the accident analysis.	E2	S1
RSR-05-IB	Facility confinement breach from dropped equipment (tools, mirrors) into facility	Failure to attach lanyard or other position limiting device!Failure of lanyard or device	None	**AC:** Dome Loading Cntrls (Lifting Cntrls)	None	None	These are applicable controls from the accident analysis.	E2	S1

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
XS-01-PRES02	Release of liquid radioactive waste from transfer pipe due to damaged saltwell pump	Leak from pump or seal from various causes	None	**AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Salt Well Flow Totalizer **SS:** Tank Level Mon Sys	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-rout / Leak Detect/ Cntrl) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Emergency Prep (Significant Release)	These controls address this hazardous condition for worker risk by indicating leak and minimizing releases. The applicable controls for environmental release are identified from the accident analysis.	E2	S1
XS-03-LEVE	Release of radioactive liquids from DCRT "annulus" (Vault) due to DCRT leak	Corrosion or structural failure of DCRT or associated piping	None	None	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Tank Level Monitor Sys **SS:** Salt Well Flow Totalizer	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-routing) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Mass Balance)	These controls address this hazardous condition for worker risk by indicating leak and minimizing releases. These are also applicable controls from the accident analysis for environmental concerns. (DCRTs normally only contain waste during transfer operations)	E2	S1

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
XS-03-TEMP01 XS-21-TEMP (244-S DCRT)	Release of liquid radioactive waste from DCRT due to flow path to soil	Exceeding structural or corrosion limits on tank due to high temperature waste transfer to DCRT concurrent with vault leak	None	None	**SS:** Tank Level Monitor Sys **SS:** Salt Well Flow Totalizer	**AC:** Trans Cntrls (Mass Balance)	These are applicable controls from the accident analysis. (DCRTs normally only contain waste during transfer operations)	E2	S0
XS-12-FLOW06	Release of radioactive waste to the soil from diversion box drain due to a spill of radioactive liquid into 241-U-152 diversion box	Leak of diversion box drain line upstream of catch tank	None	**AC:** Trans Cntrls (Leak Prevention and Mis-routing) **AC:** Trans Pump Admin Lock Cntrls	**SC:** Trans Sys Covers **SC:** Trans Leak Detect Syss **SS:** Salt Well Flow Totalizer **SS:** Tank Level Mon Sys	**LCO:** Trans Sys Covers **LCO:** Trans Leak Detect Syss **AC:** Trans Cntrls (Mis-rout) **AC:** Trans Pump Admin Lock Cntrls **AC:** Trans Sys Cover Removal Cntrls **AC:** Trans Cntrls (Leak detect/ Cntrl) **AC:** Emergency Prep (Significant Release)	These are applicable controls from the accident analysis. These controls also address this hazardous condition for worker risk by indicating leak and minimizing releases.	E2	S1
XS-13-LEVE	Release of liquid radioactive waste to soil from 241-U-301B catch tank due to leak in catch tank contents to soil	Failure of catch tank due to various causes	None	None	**SS:** Tank Level Monitor Sys	**AC:** Trans Cntrls (Leak Detect / Cntrl)	These are applicable controls from the accident analysis.	E2	S0
XS-20-FLOW02	Release of radioactive aerosols from T-Plant tank due to chemical reaction	Transfer of incompatible waste to T-Plant due to improper valve lineup	None	**AC:** Trans Cntrls (Mis-routing)	None	None	These are applicable controls from the accident analysis.	E2	S1

Table 3.5-3. Safety SSCs and TSRs for Potentially Severe (E3 and E2) Environmental Consequences.

ID	Hazardous Condition	Cause	Prev SSC	Prev TSR	Mit SSC	Mit TSR	MEMO	Env Cons	Safety Cons
XS-20-FLOW06	Release of radioactive aerosols from T-Plant tank due to positive pressure	Chemical reaction of 244-s material with contents of T-Plant Tank due to misrouting causes positive pressure in tank	None	AC: Trans Cntrls (Mis-routing)	None	None	These are applicable controls from the accident analysis.	E2	S1
XS-20-FLOW07	Release of toxic vapors from T-Plant due to chemical reaction with incompatible material in 244-S DCRT	Mixing contents of 244-S with contents of T-Plant tank due to misrouting causes chemical reaction	None	AC: Trans Cntrls (Mis-routing)	None	None	These are applicable controls from the accident analysis.	E2	S1
XS-35-FLOW01	Release of radioactive liquid waste to soil from 242-S Evaporator due to leak of un-encased direct buried piping (Plume)	Corrosion or other causes	None	None	None	None	Assuming no 242-S Evap D&D, MAR from 242-S sump would only be slightly contaminated water.	E2	S0

CHECKLIST FOR PEER REVIEW

Document Reviewed:WHC-SD-WM-TI-773, REV. 0, HAZARD ANALYSIS RESULTS REPORT

Scope of Review: The text was reviewed in dtail and the Tables were spot reviewed.

Yes	No	NA	
[ ]	[ ]	[x] *	Previous reviews complete and cover analysis, up to scope of this review, with no gaps.
[x]	[ ]	[ ]	Problem completely defined.
[ ]	[ ]	[x]	Accident scenarios developed in a clear and logical manner.
[x]	[ ]	[ ]	Necessary assumptions explicitly stated and supported.
[ ]	[ ]	[x]	Computer codes and data files documented.
[x]	[ ]	[ ]	Data used in calculations explicitly stated in document.
[ ]	[ ]	[x]	Data checked for consistency with original source information as applicable.
[ ]	[ ]	[x]	Mathematical derivations checked including dimensional consistency of results.
[ ]	[ ]	[x]	Models appropriate and used within range of validity or use outside range of established validity justified.
[ ]	[ ]	[x]	Hand calculations checked for errors. Spreadsheet results should be treated exactly the same as hand calculations.
[ ]	[ ]	[x]	Software input correct and consistent with document reviewed.
[ ]	[ ]	[x]	Software output consistent with input and with results reported in document reviewed.
[x]	[ ]	[ ]	Limits/criteria/guidelines applied to analysis results are appropriate and referenced. Limits/criteria/guidelines checked against references.
[x]	[ ]	[ ]	Safety margins consistent with good engineering practices.
[x]	[ ]	[ ]	Conclusions consistent with analytical results and applicable limits.
[x]	[ ]	[ ]	Results and conclusions address all points required in the problem statement.
[ ]	[ ]	[x]	Format consistent with appropriate NRC Regulatory Guide or other standards
[x]		[ ] *	Review calculations, comments, and/or notes are attached.

[x] [ ] [ ] Document approved.

John E. Kelly John E. Kelly 9/27/96
Reviewer (Printed Name and Signature) Date

* Any calculations, comments, or notes generated as part of this review should be signed, dated and attached to this checklist. Such material should be labeled and recorded in such a manner as to be intelligible to a technically qualified third party. Marked document returned with Potential typos.

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