ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 644467

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental [] Direct Revision [x] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	C. P. Shaw, Cogema, R3-74, 376-0814	[] Yes [X] No	3/15/99
	6. Project Title/No./Work Order No.	7. Bldg./Sys./Fac. No.	8. Approval Designator
	TWRS	NA	NA
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.)	10. Related ECN No(s).	11. Related PO No.
	HNF-2919, Rev. 0	none	none

12a. Modification Work	12b. Work Package No.	12c. Modification Work Complete	12d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 12b) [X] No (NA Blks. 12b, 12c, 12d)	NA	NA Design Authority/Cog. Engineer Signature & Date	NA Design Authority/Cog. Engineer Signature & Date

13a. Description of Change 13b. Design Baseline Document? [] Yes [X] No

The document has been revised to include constraints for the Single-Shell Tank Specification in addition to the Double-Shell Tank System Specification. The title has also been changed to reflect single-shell tanks.

14a. Justification (mark one)

Criteria Change	[X]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[]

14b. Justification Details

Regulatory constraints for the single-shell tank system specification were added to the document scope.

15. Distribution (include name, MSIN, and no. of copies)

see distribution list.

RELEASE STAMP

DATE: MAR 24 1999 STA: 4 HANFORD RELEASE ID: 2

A-7900-013-2 (05/96) GEF095

ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)
644467

16. Design Verification Required	17. Cost Impact				18. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) *that will be affected* by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	*Spares Multiple Unit Listing*	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	*Operational Safety Requirement*	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision

21. Approvals

Signature	Date	Signature	Date
Design Authority		Design Agent	
Cog. Eng. C. P. Shaw Craig Shaw R3-74	3-22-99	PE	
Cog. Mgr. T. J. Conrads for TJ. Conrads R3-73	3-22-99	QA	
QA		Safety	
Safety		Design	
Environ.		Environ.	
Other		Other	
		DEPARTMENT OF ENERGY	
		Signature or a Control Number that tracks the Approval Signature	
		ADDITIONAL	

Constraints for System Specifications for the Double-Shell and Single-Shell Tank Systems

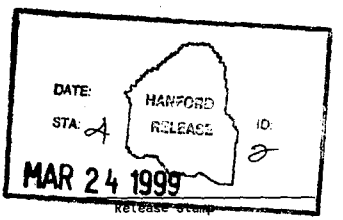
C. P. Shaw
Cogema Engineering Corporation, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 644467 UC: 721
Org Code: Charge Code: 106462/106464
B&R Code: Total Pages: 33

Key Words: double-shell tanks, single-shell tanks, regulatory requirements, systems engineering

Abstract: This is a supporting document for the Level 1 Double-Shell and Single-Shell System Specifications. The rationale for selection of specific regulatory constraining documents cited in the two system specifications is provided. Many of the regulations have been implemented by the Project Hanford Management Contract procedures (HNF-PROs) and as such as noted and traced back to their origins in State and Federal regulations.

3/23/99
Release Approval Date



Approved for Public Release

RECORD OF REVISION	(1) Document Number HNF-2919 Rev 1	Page 1

(2) Title

Constraints for System Specifications for the Double-Shell and Single-Shell Tank Systems

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
1 RS	(7) This document has been revised per ECN 644467 to include constraints for the Single-Shell Tank Specification in addition to the Double-Shell Tank System Specifcation. The title has also been changed to reflect the single-shell tanks. The former title was References for HNF-SD-WM-TDR-007, "System Specification for the Double-Shell Tank System: HNF-PROs, CFRs, DOE Orders, WACs" and was initially released as Revision 0 on EDT 625230, 7/30/98.	Craig P Shaw Craig Shaw 3-24-99	Thomas J Conrads pp for T.J. Conrads

CONSTRAINTS FOR SYSTEM SPECIFICATIONS FOR THE DOUBLE-SHELL AND SINGLE-SHELL TANK SYSTEMS

March 1999

C. P. Shaw
Cogema Engineering Corporation
Richland, Washington

Prepared for
U.S. Department of Energy
Richland, Washington

This page intentionally left blank.

CONTENTS

APPENDIXES

LIST OF TERMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, as amended
CFR	Code of Federal Regulations
DST Specification	*System Specification for the Double-Shell Tank System,* HNF-SD-WM-TRD-007
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HNF-PRO	Project Hanford Management Contract procedure
HSRCM	Hanford Site Radiological Control Manual
MAR	Mission Analysis Report
NOC	Notice of Construction
PHMC	Project Hanford Management Contract
RCRA	*Resource Conservation and Recovery Act of 1976*
SARIS	http://sarisweb.pnl.gov/saris/saris.htm
SST	Single-shell tank
TWRS	Tank Waste Remediation System
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
WAC	*Washington Administrative Code*

CONSTRAINTS FOR SYSTEM SPECIFICATION FOR THE DOUBLE-SHELL AND SINGLE-SHELL TANK SYSTEMS

1.0 INTRODUCTION

System Specification for the Double-Shell Tank System, HNF-SD-WM-TRD-007 (Grenard 1997) and *System Specification for the Single-Shell Tank System* (to be published as HNF 3912) define the requirements for these two systems during their Phase 1 Privatization mission. Many of the sections in these specifications reference legally constraining documents ("constraints") for design guidance and requirements. Referenced documents include U.S. Department of Energy (DOE) Orders, *Washington Administrative Codes* (WAC), *Code of Federal Regulations* (CFR), *Resource Conservation and Recovery Act of 1976* (RCRA), *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al 1994), and the Project Hanford Management Contract (PHMC) procedures (HNF-PROs). This document provides rationale for the selection/inclusion of constraining documents that impose requirements.

1.1 BACKGROUND

The double-shell tank (DST) system is relatively new and consistent with current design and construction standards for radiological, environmental, and worker safety. For the most part, the DST system is also readily adaptable to corrections where needed to achieve and maintain a compliant system. Therefore, this specification assumes that the existing DST system, as well as any modifications to the DST system, will be compliant with all applicable standards for design and construction.

The single-shell tank (SST) system was designed and built before many existing standards were promulgated for radiological, environmental, and worker safety, and its age and condition limits the extent of upgrades and corrections that can occur. In recognition of this, the responsible approval authorities (e.g., DOE, U.S. Environmental Protection Agency [EPA], Washington State Department of Ecology [Ecology]) have generally agreed (see, for example, the Tri-Party Agreement and site-wide RCRA dangerous waste permit) that full-scale retrofitting of the SST system to achieve compliance is not a high priority relative to other Hanford activities. Consequently, there may be differences in how design and construction standards are applied to *new* versus *existing* systems, structures, and components of the SST system.

This specification identifies all standards for design and construction that would typically be applicable to the SST system. It has been assumed to be possible, and in most cases desirable, to design and build *new* elements of the SST system to comply with the applicable standards identified in this specification. It has also been assumed that compliance with the applicable standards will be the initial basis for evaluating the adequacy of (and need to upgrade) the

existing SST system. However, this specification expects that the responsible approval authorities will need to assess and balance the costs and benefits of various compliance alternatives for the SST system. As a result, the final design and construction specifications for existing elements of the SST system may be the result of extensive negotiations, and thus cannot be definitively identified at this time.

1.2 CONSTRAINT REFERENCE SELECTION

Discussion of the origin/traceability of constraints used in various sections of the DST System and SST System Specifications is included. Some sections in the DST and SST Specifications reference HNF-PROs for constraints, other sections in the DST and SST Specifications do not use HNF-PROs but directly reference higher level sources like DOE Orders, WAC, RCRA, Tri-Party Agreement, and CFR, and two sections use the Hanford Site Radiological Control Manual (HSRCM). The design requirements references cited in this document are recommended for use in the DST and SST Specifications.

This selection of HNF-PROs is a "snapshot in time" because the HNF-PROs are still evolving. In the future, HNF-PROs may be issued that can replace the higher level references cited in the DST and SST Specifications, three more have been added since the first release of this document. HNF-PROs implement higher order documents, set consistent interpretation on site, and help resolve conflicts among higher order documents.

The constraints listed in the DST and SST Specifications were selected on the basis of the technical requirements information provided, rather than their programmatic guidance. The principal exception to the process of using technical requirements is addressed in those sections of the SST specification that may be subject to negotiation and agreement with the responsible regulatory agencies. PHMC Contract, Part 1 obliges DST and SST work be conducted in conformance with the Tri-Party Agreement, including applicable RCRA standards.

> *The DOE, the U.S. Environmental Protection Agency Region 10 (EPA), and Ecology have entered into the Hanford Federal Facility Agreement and Consent Order, referred to as the Tri-Party Agreement to ensure compliance with the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA). The Tri-Party Agreement sets forth certain requirements and milestones for cleanup activities at the Hanford Site. The Contractor agrees to plan and perform the work under this contract in accordance with DOE direction concerning implementation of the Tri-Party Agreement and achievement of current and future milestones in the Tri-Party Agreement.* (H.4, Tri-Party Agreement)

Fluor Daniel Hanford/Lockheed Martin Hanford Subcontract No. 8023764-9-K001, Part III, Clause 16, paragraph (a) mandates the use of HNF-PROs. HNF-PROs were the

constraint references of choice if one could be found that provided the necessary requirements; if not, higher level references were selected. References that provide only programmatic, administrative, and management guidance are not appropriate for the DST and SST Specifications sections that need technical design requirements. The HNF-PROs used in the DST and SST specifications were reviewed for utility to the particular section.

1.3 TRACEABILITY

To show compliance with contractual requirements, the requirements in the HNF-PROs used in the DST and SST Specifications must be traceable to the DOE orders specified in the PHMC contract, WACs, and CFRs. Appendix A traces HNF-PROs to the Tank Waste Remediation System (TWRS) Mission Analysis Report (MAR) and/or PHMC Contract and subsequently to the external requirements. This trace was done electronically using "http://sarisweb.pnl.gov/saris/saris.htm" (SARIS) and the HNF-PRO search function.

Hard copies of the selected HNF-PROs were reviewed to ensure traceability of requirements to a particular section in the DST and SST Specifications. Likewise, each of the selected WACs, CFRs, and DOE Orders were read for applicability to specific sections of the DST Specification. Many additional HNF-PROs were reviewed for use in the DST and SST Specifications and found not to be an acceptable reference.

1.4 ORGANIZATION

This document is organized by the particular DST and SST specification sections in ascending numeric order; only those sections of the specification dealing with regulatory requirements are included. The proposed quotation of each section appears in italics. Following this quote, if used, the cited HNF-PROs are listed along with a listing of the higher level references found in each HNF-PRO. Only higher level references (i.e. WACs, CFRs, DOE orders) for each HNF-PRO are listed; other HNF-PROs, letters, handbooks, etc., were not included. The selected HNF-PROs often contain many more references than are needed to provide a link to the PHMC Contract and the references cited in the MAR. A comment/suggestion is included. There are no technical constraint requirements referencing HNF-PROs, DOE Orders, WACs, or CFRs in DST and SST specifications sections numbered lower than 3.2.6.1.

This page intentionally left blank.

2.0 DOUBLE-SHELL AND SINGLE-SHELL TANK SPECIFICATIONS

DST and SST Specification Section 3.2.6.1, Natural Environments

The system shall be designed for the natural environmental conditions specified in WHC-SD-GN-ER-501 Rev.1-A, and to withstand the wind, lightning, earthquake, ashfall, and combination loads per HNF-PRO-097 Rev.0. HNF-PRO-097 Rev.0 will take precedence over WHC-SD-GN-ER-501, if conflicts occur.

Comments/Suggestions
Good reference - ties to DOE 5480.28 that is in the PHMC contract.

HNF-PRO-097, Rev.0, Design and Evaluation. -Higher Level References:

DOE/TIC 11268	A Manual for the Prediction of Blast and Fragment Loading on Structures
DOE- RL "HPS-SDC4.1"	Hanford Plant Standard, Standard Design Criteria 4.1, "Design Loads"
DOE-STD-1021-92	Natural Phenomena Hazards Performance Categorization for Structures, Systems and Components.
DOE 5480.23	Nuclear Safety Analysis Reports
DOE 5480.28	Natural Phenomena Hazards Mitigation
DOE 5481.1B	Safety Analysis and Review System
DOE 6430.1A	General Design Criteria
DOE/EP 0108	Standard for Fire Protection of DOE Electronic Computer/Data Processing Systems
DOE-STD-1020	Natural Phenomena Hazards Design Evaluation Criteria for DOE Facilities
DOE-STD-1023	Natural Phenomena Hazards Assessment Criteria
WAC 296 PART N	Department of Labor and Industries

DST and SST Specification Section 3.2.7, Transportability

Assemblies and components shall be designed to be handled, packaged, marked, and transported in accordance with 49CFR 174, 49 CFR 176, 49 CFR 177.

Comments/Suggestions

The intent of this section is to prevent design of hardware so massive that existing bridges, roads, underpasses etc. can not accommodate its transport. Radioactive or hazardous material transport is covered in Section 3.5.2. This section refers to 49CFR174 Carriage by Rail,

49CFR176 Carriage by Vessel, 49CFR177 Carriage by Public Highway. No suitable HNF-PRO was found.

DST and SST Specification Section 3.2.8, Flexibility and Expansion

The system shall comply with the flexibility and expansion requirements of DOE 6430.1A,0110-3 Division 1.

Comments: No HNF-PRO addresses flexibility and expansion.

DST and SST Specification Section 3.3, Design and Construction

*The system design shall follow the general design guidelines provided in DOE Order 6430.1A those derived via the RCRA permitting process and such other guidelines as may be authorized pursuant to the Tri-Party Agreement (*refer to Introduction for more discussion*).*

Comments/Suggestions: No HNF-PRO has been identified that addresses this design and construction area or the requirement to meet RCRA requirements and to meet the Tri-Party Agreement.

DST and SST Specification Section 3.3.1.1, Toxic Products and Formulations

The system shall comply with the requirements of HNF-PRO-451 Rev.0, *Regulated Substance Management.*

Comments/Suggestions: This HNF-PRO gives the designer direction how to deal with regulated substances and how to possibly avoid their use.

HNF-PRO-451, Rev. 0, Regulated Substance Management -Higher Level References-

29CFR1910	Occupational Safety and Health Standards
29CFR1926	Safety and Health Regulation for Construction
40CFR112	Oil Pollution Prevention
40CFR165	Pesticide Use and Control
40CFR247	Toxic Substance Control Act
40CFR280	Storage Tanks
40CFR61	Asbestos
40CFR720	Toxic Substance Control Act
40CFR761	Polychlorinated Biphenyls
40CFR763	Asbestos
49CFR171	Asbestos
49CFR172	Asbestos
DOE 6430.1A	General Design Criteria

WAC 16-228	Pesticide Use and Control
WAC 16-230	Pesticide Use and Control
WAC 16-231	Pesticide Use and Control
WAC 16-232	Pesticide Use and Control
WAC 173-300	Dangerous Wastes
WAC 173-340	Storage Tanks
WAC 173-360	Storage Tanks
WAC 296-65	Asbestos

DST Specification Section 3.3.1.2, Dangerous Waste

The system shall incorporate dangerous waste storage and treatment design features that comply with the requirements of WAC 173-303.

Comment: No HNF-PRO has been identified that addresses the broad scope of dangerous waste design issues as well as WAC 173-303. Other sections in the specifications cite more specific parts of WAC 173-303, (xxx). This is an umbrella citation to emphasize the importance of WAC 173-303.

SST Specification Section 3.3.1.2, Dangerous Waste

The new and modified portions of the system shall incorporate dangerous waste storage and treatment design features that comply with the requirements of WAC 173-303. Existing portions of the SST system are subject to the RCRA negotiation and approval process and relevant agreements pursuant to the Tri-Party Agreement.

Comment: No HNF-PRO has been identified that addresses the broad scope of dangerous waste design issues as well as WAC 173-303. Other sections in the specifications cite more specific parts of WAC 173-303, (xxx); this is an umbrella citation to emphasize the importance of WAC 173-303.

DST Specification Section 3.3.1.3, Decontamination and Decommissioning

The system shall be designed for ease of decontamination during operation and for decommissioning at the end of system life in accordance with DOE 6430.1A, Sections 0110-99.0.1, 0205-2, and 1300-11.

Comment: No HNF-PRO has been identified that addresses this area and gives detailed instructions to the designer.

SST Specification Section 3.3.1.3, Decontamination and Decommissioning

The new and modified portions of systems shall be designed for ease of decontamination during operation and for decommissioning at the end of system life in accordance with DOE 6430.1A, Sections 0110-99.0.1, 0205-2, and 1300-11. Existing portions of the SST system are

subject to the RCRA negotiation and approval process and relevant agreements pursuant to the Tri-Party Agreement.

Comment: No HNF-PRO has been identified that addresses this area and gives detailed instructions to the designer.

DST and SST Specification Section 3.3.2, Electromagnetic Radiation

The system shall comply with electromagnetic radiation emission requirements set forth in HNF-2962, (DRAFT) List of EM Radiation Requirement Standards.

Comments/Suggestions: No HNF-PRO or higher-level reference has been identified that gathers the needed information for design guidance; therefore a Hanford document on the subject has been developed.

DST and SST Specification Section 3.3.3, Nameplates and Product Markings

The system nameplates and marking shall comply with the requirements of WHC-IP-0842, Vol. IV, Section 4.14.

Comments/Suggestions: No suitable HNF-PRO has been identified.

DST and SST Specification Section 3.3.6.1.1, Occupational Radiological Protection

The system shall be designed to protect workers from occupational radiation exposures in accordance with the requirements contained in DOE/RL-96-109 Rev0.

Comment/suggestion: DOE/RL-96-109, Rev 0, is also known as HSRCM-1, Hanford Site Radiological Control Manual.

DST and SST Specification Section 3.3.6.1.2, Occupational Safety and Health Administration (OSHA) Standards

The system shall incorporate occupational safety and health design features that comply with the requirements of WHC-SD-WM-HSP-002, Rev. 3.

Comment: WHC-SD-WM-HSP-002 Rev 3, Tanks Farms Health and Safety Plan derives its authority from 29CFR1910 (OSHA) per the PHMC Contract.

DST Specification Section 3.3.6.2.1, Corrosion Prevention and Control

The system shall incorporate corrosion prevention and control features in accordance with WAC 173-303-640(3) and DOE Order 5820.2A Ch 1, Sec 3.b.(2)(g).

Comment/suggestion: No HNF-PROs were found that deal with corrosion protection at the detailed level needed for design guidance.

SST Specification Section 3.3.6.2.1, Corrosion Prevention and Control

The new and modified portions of the system shall incorporate corrosion prevention and control features in accordance with WAC 173-303-640(3) and DOE Order 5820.2A Ch 1, Sec 3.b.(2)(g). Existing portions of the SST system are subject to the RCRA negotiation and approval process and relevant agreements pursuant to the Tri-Party Agreement.

Comment/suggestion: No HNF-PROs were found that deal with corrosion protection at the detailed level needed for design guidance.

DST and SST Specification Section 3.3.6.2.6, Fire Protection

The system shall meet fire protection design requirements as defined in HNF-PRO-349 Rev.0 *Fire Protection Design Criteria.*

Comment/suggestion: This is a very good reference that specifies using mandatory design criteria found in DOE Orders, CFRs, WACs, and national consensus standards.

DST Specification Section 3.3.6.3.1, Secondary Containment and Leak Detection

The system shall incorporate secondary containment and leak detection design features in accordance with 40CFR264.193 and; WAC 173-360 (for underground petroleum tanks only); and WAC 173-303-640(4).

Comments: No HNF-PROs were found that specifically address leak detection at the level of detail needed for design.

SST Specification Section 3.3.6.3.1, Secondary Containment and Leak Detection

The new and modified portions of the system shall incorporate secondary containment and leak detection design features in accordance with 40CFR264.193; WAC 173-360 (for underground petroleum tanks only); and WAC 173-303-640(4). Existing portions of the SST system are subject to the RCRA negotiation and approval process and relevant agreements pursuant to the Tri-Party Agreement.

Comments: No HNF-PROs were found that specifically address leak detection at the level of detail needed for design. Until the RCRA negotiation and approval process is completed the projects shall use the guidance in the attached meeting minutes in items 4 and 5.

DST Specification Section 3.3.6.3.2, Spill Prevention and Controls

The system shall incorporate spill prevention and control design features in accordance with 40CFR264.193 and: WAC 173-303-630(7) and WAC 173-303-640(5). In the event of a conflict, the most stringent requirement shall take precedence.

Comment: No HNF-PROs address spill prevention at a detail design level. The cited WACs and CFRs do address design features to mitigate against spills.

SST Specification Section 3.3.6.3.2, Spill Prevention and Controls

The new and modified portions of the system shall incorporate spill prevention and control design features in accordance with 40CFR264.193; WAC 173-303-630(7) and WAC 173-303-640(5). In the event of a conflict, the most stringent requirement shall take precedence. Existing portions of the SST system are subject to the RCRA negotiation and approval process and relevant agreements pursuant to the Tri-Party Agreement.

Comment: No HNF-PROs address spill prevention at a detail design level. The cited WACs and CFRs do address design features to mitigate against spills.

DST and SST Specification Section 3.3.6.3.3, Nonradioactive Airborne Emissions

The system shall incorporate design features that limit the combined nonradioactive ambient airborne emissions from all TWRS major facilities such that compliance with HNF-PRO 2595 Rev. 0 is achieved. Also other Hanford Site major facilities nonradioactive airborne emissions shall be considered when designing the system to be compliant with the above requirement. Dangerous waste tank systems that may emit organic vapors are subject to the WAC 173-303-400 and 40 CFR Part 265 Subparts AA and BB (for SSTs and for DSTs prior to issuance of a final permit) and to WAC 173-303-690 and 691 and 40 CFR Part 264 Subparts AA and BB (for DSTs after final permit issuance).

Comment: This HNF-PRO leads the designer through the process of selecting the best or most appropriate technology to be filed with the Notice of Construction (NOC) in the permitting process.

HNF-PRO-2595, Rev. 0, Air Quality Program - Nonradioactive Emissions
DOE Order 5400.1, General Environmental Protection
WAC 173-400, General Regulations for Air Pollution Sources
BCAA, Benton Clean Air Authority

DST and SST Specification Section 3.3.6.3.4, Radioactive Airborne Emissions

The system shall incorporate design features that limit the combined radioactive ambient airborne emissions from all TWRS major facilities such that compliance with WAC 246-247 is

achieved. Also other Hanford Site major facilities radioactive airborne emissions shall be considered when designing the system to be compliant with the above requirement.

Comment: No HNF-PROs presently exist that leads the designer to processes, like BARCT, required in the Notice of Construction guided by WAC 246-247.

DST and SST Specification Section 3.3.6.3.5, Monitoring of Liquid Effluent Discharges to the Environment

The system shall be designed to comply with the liquid effluent monitoring requirements contained in HNF-PRO-456 Rev.0 *Water Quality Program.*

Comment: This HNF-PRO leads the designer through the process of selecting the best or most appropriate technology to be filed as part of the permit.

HNF-PRO-456 Rev.0 Water Quality Program.
DOE Order 5400.1, General Environmental Protection Program
DOE Order 5400.5, Radiation Protection of the Public and Environment
DOE Order 6430.1A, General Design Criteria
Seventeen WAC
Five CFR

DST and SST Specification Section 3.3.6.3.6, Radiation Protection of the Public and Environment

The system shall be designed in accordance with the radiation release limits specified in 10CFR20, 40CFR191, and WAC 246-247.

Comments/Suggestions:
No HNF-PROs were found that specify releases at the Hanford site boundary as well as the cited references.

DST and SST Specification Section 3.3.7, Human Engineering

System design shall comply with Section 1300-12, "Human factors Engineering," of DOE 6430.1A.

Comment: HNF-PROs do not deal with this subject at a design level. Human Engineering in this context primarily deals with designing a system analyzed for and protected from "operator error."

DST and SST Specification Section 3.3.8.1, Criticality Safety

The system shall store, transfer, and prepare radionuclides in a manner which prevents criticality in accordance with DOE order 5480.24 and HNF-PRO-334 Rev.0 Criticality Safety General Requirements.

Comments/Suggestions: DOE Order 5480.24 is the document which drives the HNF-PRO-334 that address criticality.

DST and SST Specification Section 3.3.8.2, Nuclear Safety Classification

The subsystem and components shall be designed in accordance with the safety classification for each. The safety classification shall be determined using the process described in HNF-PRO-700 Rev.1, *HNF-PRO-701* Rev.0, *HNF-PRO-702* Rev.0, *HNF-PRO-703* Rev.0, *and HNF-PRO-704* Rev.0 *based on the guidelines in HNF-SD-WM-BIO-001, Tables 5.3-2 and 5.3-3 (AB).*

Comments/Suggestions: none

HNF-PRO-700, Rev 1, Safety Analysis and Technical Safety Requirements

DOE 5480.21	Unreviewed Safety Questions.
DOE 5480.22	Technical Safety Requirements.
DOE 5480.23	Nuclear Safety Analysis Reports.
DOE 5481.1B	Safety Analysis and Review System.
DOE 6430.1A	General Design Criteria.

HNF-PRO-701 Rev. 0, Safety Analysis Process - Existing Facility

DOE-STD-1082-94 Preparation, Review, and Approval of Implementation Plans for Nuclear Safety Requirements.
DOE-STD-3011-94 Guidance for Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans.
DOE-EM-STD-5502-94 Hazard Baseline Documentation.

HNF-PRO-702 Rev. 0, Safety Analysis Process - Facility Change or Modification
DOE 5480.21 Unreviewed Safety Questions.
DOE 5480.23 Nuclear Safety Analysis Reports.
DOE 5481.1B Safety Analysis and Review Systems.

HNF-PRO-703 Rev. 0, Safety Analysis Process - New Project

DOE 5480.21 Unreviewed Safety Questions
DOE 5480.23, Nuclear Safety Analysis Reports

DOE 5481.1B, Safety Analysis and Review Systems
DOE 6430.1A, General Design Criteria

HNF-PRO-704, Rev 0, Hazard and Accident Analysis Process

29 CFR Part 1910, "Occupational Safety and Health Standards," Section 1910.119
10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material
49 CFR Part 173, "Shippers--General Requirements for Shipments and Packagings
DOE 5480.23, Nuclear Safety Analysis Reports.
DOE 5481.1B, Safety Analysis and Review Systems.
DOE N 5400.9, Sealed Source Control Policy.
DOE-STD-1027-92, Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports.
DOE-STD-3009-94, Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports.
DOE-EM-STD-5502-94, Hazard Baseline Documentation.

HNF-PRO-430 Rev.1, Safety Analysis Program

DOE 5480.21 Unreviewed Safety Questions
DOE 5480.22 Technical Safety Requirements
DOE 5480.23 Nuclear Safety Analysis Reports
DOE 6430.1A General Design Criteria
DOE STD 1027-92 Hazard Categorization and Accident Analysis Techniques for Compliance with DOE 5480.23 Nuclear Safety Analysis Reports.
DOE STD 3009-94 Preparation Guide for U.S. DOE Nonreactor Nuclear Facility safety Analysis Reports.
DOE STD 3011-94 Guide for Preparation of DOE 5480.22&23 Implementation Plans
DOE-EM-STD-5502-94 Hazard Baseline Documentation

DST and SST Specification Section 3.3.9.1, General System and Information Security

The system shall be designed in accordance with HNF-PRO-394 Rev.0 for general system and information security.

Comments/Suggestions: none

HNF-PRO-394 Rev.0, Physical Protection of Properties and Facilities

DOE M 5632.1C-1 Manual for Protection and Control of Safeguards and Security Interests

DST and SST Specification Section 3.3.9.2, Radiation Area Security

The system shall be designed such that access controls to areas of high radiation meet the requirements of DOE/RL-96-109 Rev 0 Hanford Site Radiological Control Manual (also known as HSRCM)

Comments/Suggestions: HNF-PROs do not address these specific issues. Therefore the DOE/RL-96-109 Rev 0 (HSRCM) reference is appropriate.

DST and SST Specification Section 3.4, Documentation

Records, documents, and drawing control pertinent to design functions shall be in accordance with HNF-PRO-222 Rev.0 *and HNF-PRO-224* Rev.0. *Drafting standards for drawings and Interface Control shall be in accordance with HNF-PRO-1819,* Rev.0.

Comments/Suggestions: Only HNF-PRO-222, Rev.0, and HNF-PRO-1819 tie to PHMC Contract or MAR. The other two HNF-PROs do not tie to either the MAR or PHMC contract but provide the needed guidance/requirement and should be retained in spite of their lack of traceability.

HNF-PRO-222, Rev.0, Quality Assurance Records
HNF-PRO-224, Rev.0, Document Control

HNF-PRO-222, Quality Assurance Records.

DOE 1324.5B Records Management Program

HNF-PRO-224, Document Control

DOE-RL-CLS-HBK Hanford Site Handbook for Control of Classified Documents
HNF-PRO-1819, Rev. 0, PHMC Engineering Requirements
DOE 5480.20A, Personnel Qualification and Accreditation
DOE 5700.6C, Quality Assurance
DOE 6430.1A, General Design Criteria

DST and SST Specification Section 3.5.2, Transportation of Hazardous Materials

Support equipment used to ship hazardous materials shall be designed to comply with the requirements of HNF-PRO-156, Rev.0.

Comments/Suggestions: The driver for this HNF-PROs is DOE 5480.3 Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes.

HNF-PRO-156, Rev.0, Nonradioactive Hazardous Material/Waste Shipments

40CFR261	Identification and Listing of Hazardous Waste
49CFR100-199	Transportation
DOE 460.1A	Packaging and Transportation Safety
DOE 460.2A	Departmental Materials Transportation and Packing Management
RCRA	Hanford Facility RCRA Permit
WAC 173-303	Dangerous Waste Regulations

DST and SST Specification Section 3.5.3.1, System-Generated Solid Waste

The SST/DST System shall comply with the requirements of HNF-PRO-455, Rev.0, *Solid Waste Management, for solid waste generated as a result of system operations and maintenance.*

Comments/Suggestions: Radioactive waste is not included in this category.

HNF-PRO-455, Rev.0, Solid Waste Management.

40CFR191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes
40CFR241	Protection of Environment
40 CFR247-250	Protection of Environment
40CFR252-253	Protection of Environment
40CFR260	Protection of Environment
40CFR260-270	Protection of Environment
40CFR268	Land Disposal Restrictions
40CFR279	Protection of Environment
40CFR61	National Emission Standards for Hazardous Air Pollutants
49CFR171-179	Transportation
DOE 5400.5	Radiation Protection of the Public and the Environment
DOE 5820.2A	Radioactive Waste Management
RCW70.95.240	Solid Waste Management - Reduction and Recycling
WAC 173-300	Certification of Operator of Solid Waste Incinerator and Landfill Facilities
WAC 173-303	Dangerous Waste Regulations
WAC 173-304	Minimum Functional Standards for Solid Waste Handling
WAC 246-290	Public Water Supplies

DST and SST Specification Section 3.6, Personnel and Training

The system shall be designed such that it can be operated by personnel possessing qualifications in accordance with HNF-PRO-057, Rev.0; *HNF-PRO-065,* Rev.0; *HNF-PRO-068,* Rev.0; *HNF-PRO-071,* Rev.0; *HNF-PRO-082,* Rev.0; *HNF-PRO-153,* Rev.0; *HNF-PRO-161,* Rev.0; *HNF-PRO-166,* Rev.0; *and HNF-SD-WM-TR-026,* Rev.5.

Comments/Suggestions: All of these tie to DOE 5480.20A, Chapter IV, which provides the designer information about the knowledge/education/skills of the people who will operate and maintain the hardware designed.

HNF-PRO-057, Rev.0, Hanford General Employee Training.

10CFR707	Workplace Substance Abuse Programs at DOE Sites
10CFR835	Occupational Radiation Protection
29CFR1910	Occupational Safety and Health Standards
29CFR1926	Safety and Health Regulation for Construction
DOE-RL-93-75 RCRA	Resource Conservation and Recovery Act
DOE 1240.2A/P	Unclassified Visits and Assignments by Foreign Nationals
DOE 1360.2B	Unclassified Computer Security Program
DOE 2030.4B	Reporting Fraud, waste, and Abuse
DOE 3791.2A	Federal Employee Motor Vehicle Safety
DOE 470.1	Safeguards and Security Program
DOE 5400.1	General Environment Protection Program
DOE 5480.10	Contractor Industrial Hygiene Program
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.19	Conduct of Operations Requirements
DOE 5480.20A	Personnel Qualification and Accreditation
DOE 5483.1A	Occupation Safety and Health Program for DOE
DOE 5500.3A	Planning and Preparedness for Operation Emergencies
DOE 5700.6C	Quality Assurance
WAC 173-303	Dangerous Waste Regulations
WAC 173-330	Used Automotive Oil Recycling Signs
WAC 296-62	Department of Labor and Industries

HNF-PRO-153, Rev.0, Nuclear Process Operator Training Program

NONE

HNF-PRO-166 Rev.0 Transportation Safety Training Requirements

DOE 460.1A	Packaging and Transportation Safety
DOE 460.2A	Departmental Materials Transportation and Packing Management

HNF-PRO-065 Rev.0 Environmental Training

DOE 5480.20A	Personnel Qualification and Accreditation

HNF-PRO-082 Rev.0 Radiological Worker Training

10CFR835	Occupational Radiation Protection
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.20A	Personnel Qualification and Accreditation
DOE 5480.18B	Nuclear Facility Training Accreditation Program
DOE/EH-256T	Department of Energy Radiological Control Manual

HNF-PRO-071 Rev.0 Radiological Control Technician Training

10CFR835	Occupational Radiation Protection
DOE 5480.11	Radiation Protection for Occupational Workers
DOE 5480.20A	Personnel Qualification and Accreditation
DOE 5480.18B	Nuclear Facility Training Accreditation Program
DOE/EH-256T	Department of Energy Radiological Control Manual

HNF-PRO-161 Rev.0 Criticality Safety Training

10CFR835	Occupational Radiation Protection
DOE 5480.20A	Personnel Qualification and Accreditation

HNF-PRO-068 Rev.0 Site Maintenance Training

DOE 4330.4A	Maintenance Management Program
DOE 5480.19	Conduct of Operation
DOE 5480.20	Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Facilities

DST and SST Specification Section 3.9, Qualification

The system design shall be verified to HNF-PRO-1819, Rev.0.

HNF-PRO-1819, Rev. 0, PHMC Engineering Requirements
DOE 5480.20A, Personnel Qualification and Accreditation
DOE 5700.6C, Quality Assurance
DOE 6430.1A, General Design Criteria

Comments/Suggestions: This HNF-PRO provides guidance to specify specific qualification testing and/or test conditions for system qualification.

APPENDIX A

TRACEABILITY

Hard copies of the selected HNF-PROs were reviewed and traced for applicability to a particular section in the DST and SST Specifications. Likewise, each of the selected WACs, CFRs, and DOE Orders were read for applicability to specific sections of the DST Specification. Many additional HNF-PROs were reviewed for use in the DST and SST Specifications and found not to include the type of information needed.

This appendix includes a list of the HNF-PROs used in the DST and SST Specifications and how they can be traced to the PHMC Contract and the Mission Analysis Report (MAR).

This listing of HNF-PRO traceability is electronic only. Only the tie between the documents has been established, the exact "chapter and verse" in the higher level reference has not been tied to the HNF-PRO electronically for its applicability. Applicability of HNF-PROs was established by reading a hardcopy.

HNF-PRO-057, Rev 0, Hanford General Employee Training -
MAR: 10CFR835:
PHMC: DOE 5480.11, 5480.20A, 5480.19, 5480.10, 5483.1A, 5700.6C
3.6 Personnel and Training

HNF-PRO-065, Rev 0, Environmental Training -
MAR: none
PHMC: 5480.20A
3.6 Personnel and Training

HNF-PRO-068, Rev 0, Site Maintenance Training -
MAR: none
PHMC: DOE 5480.1
3.6 Personnel and Training

HNF-PRO-071, Rev 0, Radiological Control Technician Training -
MAR: 10CFR835
PHMC: DOE 5480.11, 5480.20A
3.6 PERSONNEL AND TRAINING

HNF-PRO-082, Rev 0, Radiological Worker Training -

MAR: none
PHMC: DOE 5480.11, 5480.20A
3.6 PERSONNEL AND TRAINING

HNF-PRO-97 Rev 0, Engineering Design and Evaluation -
MAR: none
PHMC: DOE 5480.23, 5481.1B, 5480.28
3.2.6.1 Environmental Conditions

HNF-PRO-153, Rev 0, Nuclear Process Operator Training Program -
MAR: none
PHMC: 5480.20A, DOE 5480.19
3.6 PERSONNEL AND TRAINING

HNF-PRO-156, Rev. 0, Nonradioactive Hazardous Materials/Hazardous - Waste (HM/HW) Shipments
MAR: WAC 173-303
PHMC: none
3.5.2 Transportation of Hazardous Materials

HNF-PRO-157, Rev 0, Radioactive Material/Waste Shipments -
MAR: WAC 173-303
PHMC: DOE 5400.5, 5480.3, 1540.2, 5700.6C
3.2.7 Transportability

HNF-PRO-161, Rev 0, Criticality Safety Training Program Description -
MAR: 10CFR835
PHMC: 5480.20A
3.5.2 Transportation of Hazardous Materials
3.6 PERSONNEL AND TRAINING

HNF-PRO-166 Rev.0 Transportation Safety Training Requirements -
MAR: none
PHMC: DOE 5480.3
3.6 PERSONNEL AND TRAINING

HNF-PRO-222 Rev.0, Quality Assurance Records -
MAR none
PHMC: DOE 1324.5B
3.4 DOCUMENTATION

HNF-PRO-334 Rev.0, Criticality Safety General Requirements -
MAR: none
PHMC: DOE 5480.24
3.3.8.1 Criticality Safety

HNF-PRO-349 Rev 0, Fire Protection Design Criteria
PHMC DOE 6430.1A, DOE 5480.7A
3.3.6.2.5 Fire Protection

HNF-PRO-394 Rev.0, Physical Protection of Properties and Facilities -
MAR: none
PHMC: DOE 5632.1C
3.3.9.1 General System and Information Security

HNF-PRO-430, Rev. 1, Safety Analysis Program -
MAR: none
PHMC: DOE 5480.23, 5480.22, 5480.21, 5481.1B, 6430.1A
3.3.8.2 Nuclear Safety Classification

HNF-PRO-451, Rev. 0, Regulated Substance Management -
MAR: 10CFR61, 40CFR61, 40CFR761, 29CFR1910, WAC 173-303, WAC 173-360
PHMC: DOE 6430.1A
3.3.1.1 Toxic Products and Formulations

HNF-PRO-455, Rev 0, Solid Waste Management -
MAR: 10CFR61, 40CFR61, 40CFR191, 40CFR265, 40CFR268, 40CFR279, WAC 173-303, DOE 5820.2A
PHMC: DOE 5400.5
3.5.3.1 Solid Waste Acceptance Criteria

HNF-PRO-456 Rev.0 Water Quality Program
MAR: DOE 5400.1, 5400.5
PHMC: DOE 5400.1, 5400.5, 6430.1A
3.2.8 Flexibility and Expansion
3.3.6.3.5 Monitoring of Liquid Effluent Discharges to the Environment

HNF-PR0-500 Rev.0, Operations Security
MAR: none
PHMC: DOE 471.2A, 1240.2B
3.3.9.1 General System and Information Security

HNF-PRO-537 Rev.0, Criticality Safety Control of Fissionable Material -
MAR: none
PHMC: DOE 5480.24
3.3.8.1 Criticality Safety

HNF-PRO-539, Rev 0, Criticality Safety Evaluations -
MAR: none
PHMC: DOE 5480.23, 5480.24

3.3.8.1 Criticality Safety

HNF-PRO-543 Rev.0, Fissionable Material Storage -
MAR: none
PHMC: DOE 5480.24
3.3.8.1 Criticality Safety

HNF-PRO-546 Rev.0, Criticality Alarm System -
MAR: none
PHMC: DOE 5480.24
3.3.8.1 Criticality Safety

HNF-PRO-700, Rev 1, Safety Analysis and Technical Safety Requirements
MAR: none
PHMC: DOE 5480.23, 5480.22, 5480.21, 5481.1B, 6430.1A
3.3.8.2 Nuclear Safety Classification

HNF-PRO-701 Rev. 0, Safety Analysis Process - Existing Facility
MAR: none
PHMC: DOE 5480.23, 5480.22, 5480.21, 5481.1B, 6430.1A
3.3.8.2 Nuclear Safety Classification

HNF-PRO-702 Rev. 0, Safety Analysis Process - Facility Change or Modification
MAR: none
PHMC: DOE 5480.23
3.3.8.2 Nuclear Safety Classification

HNF-PRO-703 Rev. 0, Safety Analysis Process - New Project
MAR: none
PHMC: DOE 5480.23, 5480.21, 5481.1B, 6430.1A
3.3.8.2 Nuclear Safety Classification

HNF-PRO-704, Rev 0, Hazard and Accident Analysis Process
MAR: 29CFR1910
PHMC: DOE 5480.23, 5481.1B
3.3.8.2 Nuclear Safety Classification

HNF-PRO-1629, Rev 0, ALARA Administrative Control Levels -
MAR: 10CFR835
PHMC: none
3.3.6.3.6 Radiation Protection of the Public and Environment

HNF-PRO-1819, Rev. 0, PHMC Engineering Requirements
MAR: None
PHMC: DOE 5480.20A, 5700.6C, 6430.1A
3.9 Qualification

HNF-PRO-2595, Rev 0, Air Quality Program - Nonradioactive Emissions
MAR: DOE 5400.1
PHMC: DOE 5400.1
3.3.6.3.3 Nonradioactive Airborne Emissions

DST/SST Specification HNF-PROs that DO NOT trace to MAR or PHMC Contract

HNF-PRO-224 Rev0, Document Control -
3.4 Documentation

Full titles of MAR constraints/references:

40 CFR 268- Land Disposal Restrictions
29 CFR 1910 Occupational Safety and Health Standards
10 CFR 61 - Licensing Requirements for Land Disposal of Radioactive Waste
40 CFR 61 - National Emission Standards for Hazardous Air Pollutants
10 CFR 835 Occupational Radiation Protection
40 CFR 191 - Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic
40 CFR 279- Standards of the Management of Used Oil
40 CFR 761 - Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 265- Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
WAC 173-303 Dangerous waste regulations.
WAC 173-360 Underground storage tank regulations.
DOE-5820.2A/P -RADIOACTIVE WASTE MANAGEMENT
DOE 4330.4B - MAINTENANCE MANAGEMENT PROGRAM
DOE-5480.19/P -CONDUCT OF OPERATIONS REQUIREMENTS FOR DOE FACILITIES
DOE-5480.20A/P -PERSONNEL SELECTION, QUALIFICATION, AND TRAINING
DOE-5400.5/P -RADIATION PROTECTION OF THE PUBLIC AND THE ENVIRONMENT

DOE-5633.3B/P -CONTROL AND ACCOUNTABILITY OF NUCLEAR MATERIALS
DOE-5400.1/P -GENERAL ENVIRONMENTAL PROTECTION PROGRAM
DOE-5480.21/P -UNREVIEWED SAFETY QUESTIONS
DOE-5480.23/P -NUCLEAR SAFETY ANALYSIS REPORTS
DOE-5632.1C/P -PROTECTION AND CONTROL OF SAFEGUARDS AND SECURITY

(all of these DOE orders are listed in the PHMC contract)

APPENDIX B

MEETING MINUTES--
LEAK-RELATED REQUIREMENTS

This page intentionally left blank.

HNF-2919
Revision 1

Meeting Minutes

Subject: Leak-Related Requirements

To: Distribution		Building: MO276/131B		Meeting Minutes No. MM-82400-99-001
From: M. A. deLamare		Chairman: M. A. deLamare		
Department – Operation-Component Retrieval Engineering	Area 200E	Shift Days	Date of Meeting February 17, 1999	Number Attending 5

Distribution

Name	MSIN	Name	MSIN
A. F. Choho	R3-73	J. A. Reeves*	R3-75
T. J. Conrads*	R3-73	W. J. Stokes	R3-75
M. A. deLamare*	R3-73	W. T. Thompson*	R3-73
G. C. DeWeese	R3-73	R. L. Treat*	R3-75
D. F. Iwatate*	R2-89		
		*attendees	

1. All were agreed that our positions on leak-related requirements and on the C-104 retrieval strategy need to be coordinated within the PHMC, RL, and Ecology early in the Project W-523 lifecycle. (During conceptual phase.)

2. All were agreed that the C-104 strategy depart from the previous ALV strategy to a "best" proven, cost-effective, etc., strategy. The "best" approach would evaluated and selected using the TWRS Alternatives Generation and Analysis (AGA) and decision management process. Selection criteria would be set in the approved decision plan.

3. All agreed that a predetermined response to a detected leak should be established. It is not acceptable to wait until a leak is detected to form a response. I believe the response should be determined during conceptual phase. This enables the project to provide everything needed to implement the response.

4. Homework assignment from the meeting was to review and markup the requirements below. The resulting requirements will be input to the single-shell tank (SST) system specification.

   The system shall utilize best-proven and cost-effective retrieval technologies that balance system performance with the risk of waste leakage from SST tanks.

   The system shall utilize proven and cost -effective leak detection, monitoring and mitigation technologies.

5. Item 3 and above started the thought process that maybe a third requirement is needed. Again, verification of compliance would be via the AGA/decision processes. Please provide me your thoughts on this one as well.

   The system shall have the capability to stop retrieval operations when a leak in the tank is detected, and place that tank-in condition that reduces the risk of further leakage.

Note: I think the threshold to cease operations would not go into the Level 1 Specification, but be placed in an operational specification.

6. One final thought. It may be a good idea if we were to calculate ALVs for C-104 and C-102 to determine where the cutoff thresholds should be set. Who could perform this calculation? How long would it take?

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	C. P. Shaw	Date 3/15/99
Project Title/Work Order		EDT No.
Constraints for System Specifications for the Double-Shell and Single-Shell Tank Systems, HNF-2919, Rev. 1		ECN No. 644467

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
Central Files	B1-07	X			
DOE Public Reading Room	H2-53	X			
DIMC	R1-41	X			
C. D. Acree	R2-89	X			
S. K. Baker	R3-73	X			
A. F. Choho	R3-73	X			
R. D. Claghorn	R3-73	X			
T. J. Conrads	R3-73	X			
M. A. Delamare	B1-45	X			
C. E. Grenard	R3-74	X			
M. W. Leonard	B1-45	X			
S. M. O'Toole	R2-89	X			
R. D. Potter	R3-73	X			
C. P. Shaw	R3-74	X			