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ENGINEERING CHANGE NOTICE

Page 1 of 2

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ECN

2. ECN Category (mark one) Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. CE Graves, Design Engrg, R3-83, 376-5235		4. USQ Required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Date November 11, 2002
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13a. Description of Change

13b. Design Baseline Document? Yes No

Complete revision of the Interface Control Document.

USQ Performed: # TF-02-1379

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HNF-4486, Rev. 1, <i>Interface Control Document Between the Double-Shell Tank System and the Plutonium Finishing Plant</i>		ECN No: 644514

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Interface Control Document Between the Double-Shell Tank System and the Plutonium Finishing Plant

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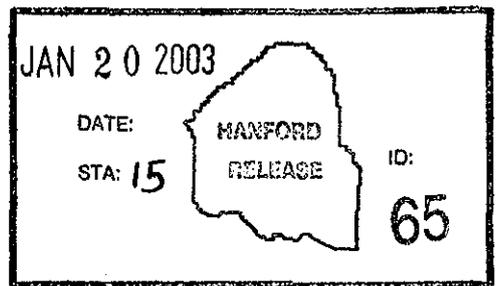
Abstract:

This Interface Control Document (ICD) identifies the liquid waste transfer interfaces between the Double-Shell Tank System and the Plutonium Finishing Plant (PFP). It establishes requirements, responsibilities, and schedules for performing transfers and completing all actions necessary to terminate transfers from the PFP to the SY Tank Farm via the 244-TX and 244-S route.

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**INTERFACE CONTROL DOCUMENT BETWEEN
THE DOUBLE-SHELL TANK SYSTEM
AND THE PLUTONIUM FINISHING PLANT**

December 2002

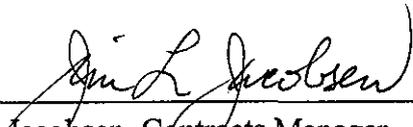
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CH2M HILL Hanford Group, Inc.

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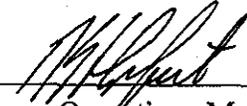
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This document has been reviewed for technical and programmatic accuracy.

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Tank Farm Operations Manager

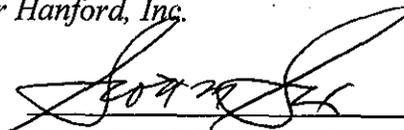
12/10/02
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DST Facility Director
SS1

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S. M. Sax, Director – Plutonium Finishing Plant

12/28/02
Date

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TERMS

CHG	CH2M Hill Hanford Group, Inc.
DCRT	Double Contained Receiver Tank
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U. S. Department of Energy
DST	Double-Shell Tank
ECD	Estimated Completion Date
Ecology	Washington State Department of Ecology
FFCA	Federal Facility Compliance Agreement
FH	Fluor Hanford Inc.
FSAR	Final Safety Analysis Report
ICD	Interface Control Document
PFP	Plutonium Finishing Plant
RCRA	Resource Conservation and Recovery Act
RPP	River Protection Project
SSC	systems, structures, and components
TPA	Tri-Party Agreement, <i>Hanford Federal Facility Agreement and Consent Order</i>
TSR	Technical Safety Requirements

1.0 SCOPE

The Plutonium Finishing Plant (PFP) currently transfers liquid waste to the SY Tank Farms via the Double-Shell Tank (DST) Transfer System. The transfer route includes the waste lines from PFP to 244-TX (HSW-202 and HSW-203), as well as the 244-TX and across the top of 244-S Double-Contained Receiver Tanks (DCRT) facilities. The U.S. Department of Energy (DOE), in the effort to comply with TPA milestone M-43-00, is required to discontinue use of the transfer lines from PFP and discontinue use of this waste transfer route. The transfer route will be removed from service no later than June 30, 2005, and physically isolated within twelve months of removal from service. (Further details regarding the regulations, the compliance agreements, and decisions are contained in Appendix A.) This Interface Control Document (ICD) has been updated to establish an agreement between these two facilities in order to meet these regulatory commitments.

This ICD identifies the liquid waste transfer interfaces between the DST System and the PFP. It establishes requirements, responsibilities, and schedules for performing transfers and completing all actions necessary to terminate transfers from the PFP to the SY Tank Farm via the 244-TX and 244-S route. Work associated with this ICD will be executed in accordance with the terms and conditions as agreed to in CHG-FMOA-2001, *Memorandum of Agreement*, between Fluor Hanford Inc. (FH) and CH2M HILL Hanford Group Inc. (CHG).

The signatures on the cover page of this document indicate agreement between the parties that this document reflects the current technical baseline for each system and that the requirements contained in this document will not be revised without the agreement of all parties. This ICD shall be updated to reflect any changes to the interface, or commitments herein. Once the HSW-202 and HSW-203 lines have been declared isolated, this ICD will be cancelled.

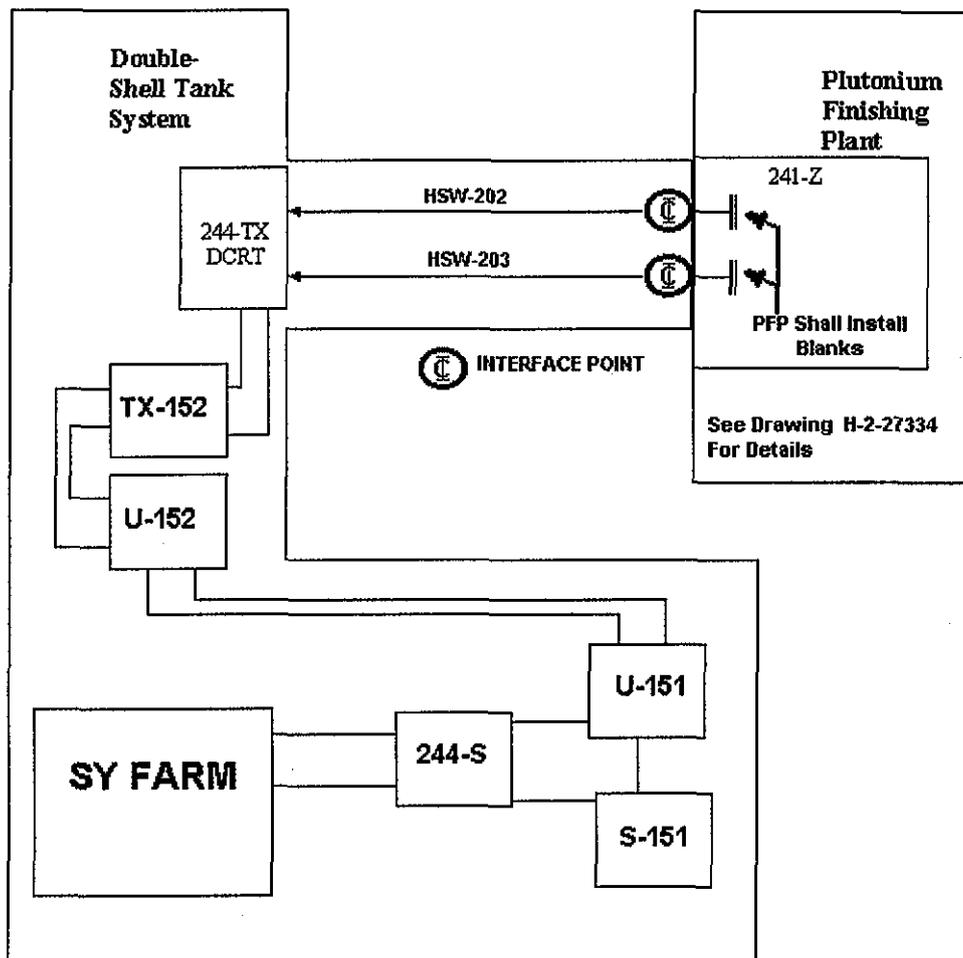
1.1 SYSTEM OVERVIEW

The PFP and DST systems have a direct physical interface (waste transfer pipelines), between the 241-Z Building (TK-D5) and the 244-TX DCRT. See Figure 1 for an overview of the transfer route from PFP to the SY farm.

1.1.1 Plutonium Finishing Plant

The current mission of the PFP is that of cleanout, stabilization, and storage of nuclear materials. During cleanout and stabilization operations, the PFP generates liquid wastes. Liquid waste from PFP is transferred to the 241-Z Liquid Waste Treatment Facility tanks at the PFP facility for treatment prior to transfer to the DST System at 244-TX DCRT. The 241-Z Facility is a permitted Treatment, Storage, and Disposal Facility under its own Type A permit from Ecology. Liquid waste from Tank D5 in 241-Z is transferred to the 241-TX DCRT via underground transfer lines HSW-202 and HSW-203 (See Figures 1 and 2).

Figure 1: PFP to SY-Farm Waste Transfer Route



1.1.2 DST System

The 244-TX DCRT is a concrete vault located approximately one mile north of PFP. It is carbon steel lined and contains a carbon steel tank. This DCRT supports 241-T, 241-TX, and 241-TY saltwell pumping, as well as support for transfers from PFP. SY Tank Farm is the only DST waste storage destination available for waste being directly transferred from 244-TX DCRT.

1.1.3 Waste Transfer Schedule Considerations

In the attempt to facilitate the PFP cleanout schedule, the DST System shall be kept in place as long as possible under the DST current regulatory commitments to maintain the capability to receive waste from PFP through the 244-TX DCRT until April 01, 2005. The final DST transfers and flushes by Tank Farms Operations from 244-TX to SY Tank Farm will take place

between April 01 and June 01, 2005. This allows 30 days for the DST System to remove the components involved in this transfer route from service.

1.2 PFP TRANSFER WASTE VOLUME LIMITATIONS

PFP expects to transfer the contents of their D-5 tank (5000 gallons) to the DST System quarterly between now and April 1, 2005, (see HNF-SD-WM-ER-029, *Operational Waste Volume Projection*) provided it meets DST Waste Acceptance Requirements. During the SY Tank Farm shut down for upgrades, PFP will be limited to a total waste transfer of approximately 26,000 gallons, which is the usable volume of 244-TX. DST systems will attempt to perform at least one transfer of 244-TX to the SY Tank Farm during the outage per the schedule in Table 1, provided a route can be identified and the transfer can be performed safely.

1.3 PFP WASTE ACCEPTANCE INTO THE DST SYSTEM

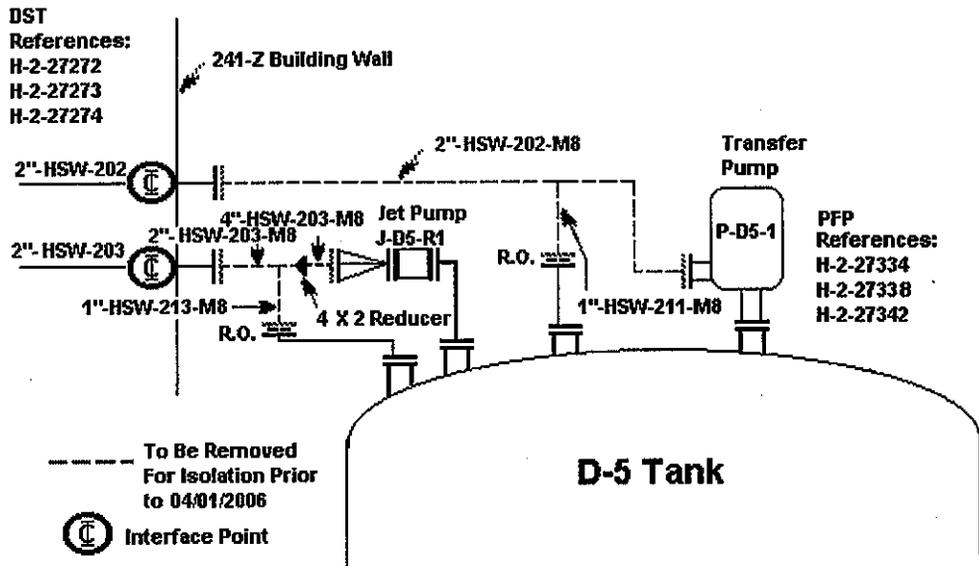
The waste acceptance requirements for receipt of waste into the DST System are specified in RPP-10726, *Requirements for Discharge from Non-Tank Farm Waste Generators into the DST System*. Waste transfers to the DST System shall be governed by existing CHG procedures and guidelines.

1.4 PFP REMOVAL FROM SERVICE/ISOLATION ACTIVITIES

Upon completion of the final transfer, PFP shall permanently remove the HSW-202 and HSW-203 waste transfer lines from service. This shall be accomplished by the physical removal of the ability to provide motive force to move waste through these lines. PFP shall provide documentation of this action per the schedule in Table 1 in the form of copies of the completed work packages. This will permit the DST System to provide documentation to Ecology declaring the lines out-of-service.

Subsequent to declaring these lines out of service, PFP shall remove the spool pieces between the wall of their facility and their D-5 tank for transfer lines HSW-202 and HSW-203 (See Figure 2). PFP shall place blind flanges on the wall flanges for HSW-202 and HSW-203 (see Figure 3) and provide RPP with documentation of the completion of work in the form of copies of completed work packages. PFP shall establish administrative controls to prohibit any future connections to HSW-202 or HSW-203. This will permit the DST System to declare the lines isolated.

Figure 2: PFP Isolation Details



2.0 RESPONSIBILITIES

The following sections identify all responsibilities for the DST and PFP.

2.1 DST SYSTEM RESPONSIBILITIES

1. Operate and maintain the DST System in compliance with requirements in the latest revisions of HNF-SD-WM-SAR-067, *Tank Farms Final Safety Analysis Report (FSAR)*, and HNF-SD-WM-TSR-006, *Tank Farms Technical Safety Requirements (TSRs)*.
2. Establish and maintain this ICD.
3. Establish and maintain the tank farms waste acceptance criteria.
4. Notify PFP 60 calendar days prior to shutting down SY Tank Farm for upgrades.
5. Empty 244-TX DCRT prior to shutting down SY Tank Farm for upgrades.
6. Prepare a waste compatibility assessment that authorizes shipment of waste to 244-TX per HNF-SD-WM-OCD-015, *Tank Farm Waste Transfer Compatibility Program*.
7. Operate and maintain the 244-TX facility.
8. Accept PFP waste shipments to 244-TX DCRT during the SY Tank Farm outage up to the tank capacity of approximately 24,700 gallons and 3,940 grams of plutonium.

9. Empty 244-TX to the SY system during the SY Tank Farm outage per the schedule in Table 1, provided a route can be established and the transfer can be performed safely.
10. Communicate all relevant DST document changes and outage schedules to 241-Z Operations Manager.
11. Beginning at the SY Farm outage initiation, provide monthly status to 241-Z Operations Manager including: 244-TX availability, outage estimated completion date (ECD), and ECD for emptying 244-TX.
12. Subsequent to the final transfer from PFP to 244-TX to SY, and upon receipt of documentation from PFP, remove from service the entire transfer route from PFP to 241-SY-A/B valve pits. This will include the HSW-202 and HSW-203 lines, 244-TX, and 244-S DCRTs and associated exhaust stacks. Declare the transfer route, including HSW-202 and HSW-203, out of service.
13. Upon receipt of PFP documentation, declare the HSW-202 and HSW-203 lines isolated.
14. DST System will provide support to PFP for lock and tag removal for the work package to remove the D-5 tank transfer pump and jet pump from service. Both pumps have controlled equipment locks that are in the custody of DST System personnel.

2.2 PFP RESPONSIBILITIES

1. Operate and maintain the 241-Z facility in accordance with OSD-Z-184-00010, *Operating Specifications for the Plutonium Finishing Plant: 241-Z Waste Facility*.
2. Establish and maintain this ICD per HNF-PRO-10472, *Configuration Management of Interface Management Documentation*.
3. Maintain a schedule in conjunction with DST Systems Process Control Group for waste transfer planning.
4. Meet DST waste acceptance requirements for all waste to be transferred. Sample waste from tank TK-D5 and analyze per RPP-10726.
5. Prepare a complete Waste Profile sheet per RPP-10726. Forward Waste Profile to the Process Control Group no later than 30 days prior to the planned transfer.
6. Provide annual input to the Operations Waste Volume Projections.
7. Complete the last shipment of waste from 241-Z to 244-TX, flush the transfer route to the extent practical (per existing practices/procedures), and remove the transfer route HSW-202 and HSW-203 from service. Provide documentation to DST Facilities Director.

8. Complete isolation of the HSW-202 and HSW-203 transfer lines, and provide documentation to DST.

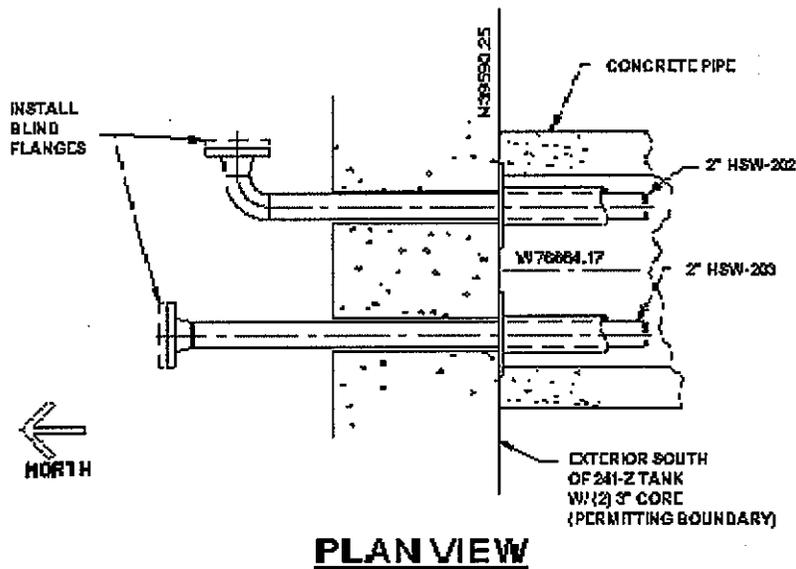
3.0 INTERFACE INFORMATION

This section identifies the location of each point where one facility component touches another project or existing facility component, and defines where each physical and administrative interface begins and ends. The interface point(s) may be changed with the approval of both representatives of the DST System and the PFP.

3.1 PHYSICAL INTERFACE

The actual physical interface point, and the point where the environmental permits meet, between these facilities has been defined as the point where pipes HSW-202 and HSW-203 exit the 241-Z building (the outside wall of 241-Z building). Refer to Figures 1 and 3.

Figure 3: Physical Interface Boundary at 241-Z Building



3.2 ADMINISTRATIVE INTERFACES

Bounding design requirements for the DST System are contained in HNF-SD-WM-TRD-007, *System Specification for the Double-Shell Tanks System*. Operational estimates of waste volumes and timing are provided in the most current revision of HNF-SD-WM-ER-029. All transfers shall comply with the controls contained in the FSAR, the TSRs and the Waste Acceptance Requirements. Additionally, the Tank Farm administrative lock, which controls the transfer from PFP, is placed on the 241-Z transfer pump. The key to the lock is maintained at the West Area shift office.

3.2.1 Permit Requirements

PPF waste shall be subjected to the DST waste acceptance process described in RPP-10726, and must be approved by the DST System Process Control Group before transfer of PPF waste into the DST System can begin.

3.2.2 Documentation Requirements

All waste transfers and/or system modifications will be documented in accordance with approved procedures and/or guidelines.

3.2.3 Authorization Basis Requirements

The 200 Area Tank Farm has limited ability to adjust waste composition. Waste compatibility between existing waste and new waste must be closely controlled. Therefore, strict control of waste composition at the waste generator is essential to operate in compliance with the requirements of the FSAR and the TSRs.

3.3 INTERFACE ASSUMPTIONS

A general assumption underlying this ICD is that both PPF and DST Systems are able to undertake the necessary activities on the agreed upon schedule.

3.3.1 Empty 244-TX at Start of SY Outage

DST Systems shall empty 244-TX prior to shutting down the SY tank farm for upgrades. If this turns out not to be possible, then PPF will be limited in the amount of waste it can transfer during the SY outage to the available volume in 244-TX. This can cause operational problems for PPF.

3.3.2 No Processing of 244-TX waste during the SY Outage

The actual start and duration of the SY outage for upgrades is not finalized. However, the current assumption is that it starts on October 1, 2003 and completes 12 months later. During this outage, it is assumed that no wastes that have been accumulated in 244-TX can be processed to the SY farm.

3.3.3 Complete SY Outage by September 30, 2004

It is assumed that the SY tank farm outage is completed by October 1, 2004. If the outage extends beyond October 1, 2004, the ability of PPF to transfer waste to 244-TX may be restricted depending on the available space in 244-TX or the ability of DST Systems to process 244-TX waste to SY farm.

3.3.4 PFP Removes HSW-202 and HSW-203 from Service by April 1, 2005

Regardless of whether the assumptions described above prove to be accurate, the underlining assumption is that DST Systems will not accept waste transfers from PFP after April 1, 2005, and PFP will take the necessary actions to take the lines HSW-202 and HSW-203 out of service by June 20, 2005.

3.4 SCHEDULE

Table 1. Summary Schedule

Date	Task Description
9/30/03	DST System to empty 244-TX DCRT prior to shutting down SY Tank Farm for W-314/E-525 upgrades.
4/01/04 to 10/01/04	DST System to empty 244-TX DCRT if 244-TX volume is $\geq 7,000$ gallons on 4/1/04.
5/31/04	PFP shall complete stabilization and packaging of plutonium-bearing materials in accordance with schedules in the Implementation Plan for DNFSB Recommendation 2000-1.
10/01/04	DST System to complete 241-SY outage. Start processing PFP waste accumulated in 244-TX to SY farms.
10/01/04 to 1/01/05	DST System to empty 244-TX.
4/01/05	The final PFP transfer to 244-TX, including tank flushes, shall be completed. The 244-TX DCRT facility will stop receiving waste from PFP.
4/01/05 to 6/01/05	DST System to transfer waste in 244-TX including flushes to SY farms.
Prior to 6/20/05	PFP shall remove the systems, structures and components (SSCs) necessary to transfer waste to 244-TX from service. PFP shall provide DST documentation of transfer line isolation in the form of copies of the completed work packages.
Prior to 6/30/05	DST System shall declare the entire route from PFP through 244-TX, including HSW-202 and HSW-203 to the 241-SY-A valve pit and 241-SY-B valve pit out of service.
6/30/05 to 12/01/05	DST System to install passive ventilation on 244-TX and 244-S DCRTs.
Prior to 12/31/05	DST System to declare the active exhausts associated with 244-TX and 244-S out of service.
Prior to 4/01/06 *	PFP shall remove the spool pieces between the wall of their facility and their D-5 tank for transfer lines HSW-202 and HSW-203. PFP shall place blind flanges on the wall flanges for HSW-202 and HSW-203. PFP shall provide RPP with documentation of the completion of work in the form of copies of completed work packages. PFP shall establish administrative controls to prohibit any future connections to HSW-202 or HSW-203.
Prior to 6/30/06 **	DST System declares lines HSW-202 and HSW-203 isolated.

* Within 11 months of PFP removal from service

** Within 12 months of DST System removal from service

4.0 CONFIGURATION MANAGEMENT

This ICD will be maintained under a joint agreement control and placed into a bilaterally accepted release system. If an agreement cannot be reached, each party is responsible for placing the identified documents under its existing control systems.

4.1 INTERFACE DEFINITION

This ICD identifies the actual interface point with PFP as the pipes at the outer wall of the 241-Z building. However, the FSAR Section 2.3.3 and subsequent figures and tables clearly identify that the interface point is at the exterior wall of 244-TX. During the normal revision process, the FSAR will be updated to agree with this document.

4.2 OPERATING DOCUMENT SUMMARY TABLE

The following table lists operating documents applicable to this interface.

Table 2. Operating Documents

Double-Shell Tank System	Plutonium Finishing Plant
OSD-T-151-00007, Rev. H-25, <i>Operating Specification for 241-AN, AP, AW, AY, AZ & SY Tank Farms</i>	OSD-Z-184-00010, Rev. H-1, <i>Operating Specification for the Plutonium Finishing Plant: 241-Z Waste Facility</i> (released as HNF-SD-CP-OCD-036)
CPS-T-149-00012, Rev. A-3, <i>Criticality Prevention Specification for Tank Farm Operations</i>	CPS-Z-165-80741, Rev. D-1, <i>PFP Criticality Prevention Specification: 241-Z Solution Disposal Facility</i>
HNF-SD-WM-OCD-015, Rev. 4-D, <i>Tank Farm Waste Transfer Compatibility Program</i>	ZO-101-010, Rev. F, <i>Plutonium Finishing Plant Surveillance Technical Procedure: TK-D5 to Tank Farms Transfer</i>
TO-430-480, Rev. K-2, <i>244-TX DCRT to Tank SY-102 Slipstream Transfer Via 244-S DCRT</i>	RPP-10726, Rev. 0, <i>Requirements for Discharge from Non Tank Farm Waste Generators into the DST System</i>
TO-470-962, Rev. H-14, <i>Transfer from the PFP 241-Z Tank D-5 to 244-TX DCRT</i>	

5.0 ISSUES

No open issues have been identified at this time.

6.0 ACCEPTANCE TEST METHODS AND STANDARDS

This section is not applicable to this ICD.

7.0 REFERENCES

40 CFR 61, Subpart H, “*National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*,” Title 40, Code of Federal Regulations, Part 61, Subpart H (Parts 61.90-61.93), et seq.

CHG-FMOA-2001, *Memorandum of Agreement* between Fluor Hanford, Inc. and CH2M HILL Hanford Group, Inc.

CPS-T-149-00012, 2002, *Criticality Prevention Specification for Tank Farm Operations*, Rev. A-3, CH2M HILL Hanford Group Incorporated, Richland, Washington

CPS-Z-165-80741, 2002, *PFP Criticality Prevention Specification: 241-Z Solution Disposal Facility*, Rev. D-1, Fluor Hanford, Inc., Richland, Washington.

Hanford Site Drawings

- H-2-27272, Civil Plan & Profile High Salt Waste Transfer Lines
- H-2-27273, Civil Plan & Profile High Salt Waste Transfer Lines
- H-2-27274, Civil Encasement Drawings High Salt Waste Transfer Lines
- H-2-27334, Engineering Flow Diagram high & Low Salt Aqueous Waste Treatment
- H-2-27338, Piping Arrangement HSW & LSW Collection Plan & Sections
- H-2-27342, Piping HSW & LSW Collection Plan, Sections & Details

HNF-PRO-10472, 2002, *Configuration Management of Interface Management Documentation*, Rev. 1, Fluor Hanford Inc., Richland, Washington.

HNF-SD-WM-ER-029, 2000, *Operational Waste Volume Projection*, Rev. 26-A, CH2M HILL Hanford Group Incorporated, Richland, Washington

HNF-SD-WM-OCD-015, 2002, *Tank Farm Waste Transfer Compatibility Program*, Rev. 4-D, CH2M HILL Hanford Group Inc., Richland, Washington

HNF-SD-WM-SAR-067, 2002, *Tank Farms Final Safety Analysis Report (FSAR)*, Rev. 3-E, CH2M HILL Hanford Group Inc., Richland, Washington

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HNF-SD-WM-TSR-006, 2002, *Tank Farms Technical Safety Requirements (TSR)*, Rev. 2-I, CH2M HILL Hanford Group Inc., Richland, Washington

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APPENDIX A

**SUMMARY OF THE REGULATIONS AND COMPLIANCE AGREEMENTS
RELEVANT TO THIS ICD**

The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement or TPA) major milestone M-43-00 *Upgrades Complete* (M43) requires that all waste transfers will be performed through RCRA compliant SSCs by 6/30/05. The transfer route from PFP, through lines HSW-202 and HSW-203, the 244-TX and 244-S DCRTs, to the SY Tank Farm is not RCRA compliant.

As a part of M-43-00 and the work committed to in TPA Milestones M-48-01 (DST Transfer System), and M-48-07 (Isolation Complete) RPP identified those components of the DST System that will be removed from service by 6/30/05 and subsequently isolated within twelve months of removal from service. The entire route from PFP through the 244-TX and 244-S DCRTs and to the 241-SY-A and 241-SY-B valve pits was identified as being non-compliant and it was decided to remove it from service by 6/30/05. This transfer route is defined in RPP-8925, *Double-Shell Tank Transfer System Modifications Project Preliminary Engineering Report*.

The Federal Facility Compliance Agreement (FFCA) requires the DOE to complete the installation of upgraded stack monitoring systems for stacks designated as major stacks to comply with 40 CFR 61, Subpart H by 12/31/05. The exhaustor stacks on the 244-TX DCRT, and 244-S DCRT do not comply with 40 CFR 61, Subpart H. As noted above, these two DCRTs are a part of the waste transfer line taking liquid PFP waste to SY tank farm.

Of the 17 Hanford Site stacks that were the subject of the FFCA, 11 stacks have been brought into compliance with the NESHAP regulations and the FFCA, and 6 stacks have compliance milestones pending under the FFCA. Each of these 6 stacks serves various underground waste tanks and tank vaults in the 200 East and 200 West Area Tank Farms on the Hanford Site.

An engineering evaluation concluded that the tanks and vaults served by these 6 ventilation stacks would be removed from service prior to 12/31/05. Two of these stacks are those associated with DCRTs 244-TX and 244-S. Because of the commitment to take these DCRTs out-of-service by 6/30/05, the associated stacks must also be taken out-of-service by 6/30/05.

Proposed TPA Milestone M-83-31 for PFP states that after 6/30/05, no liquid waste discharges from the 241-Z Liquid Waste Treatment Facility will be made via underground transfer lines to 244-TX.

Defense Nuclear Facilities Safety Board (DNFSB) Milestone TRP-05-500 requires PFP to complete the thermal stabilization or otherwise disposition all nonmetallic, non-liquid, non-polycube plutonium-bearing materials (oxides) with a Pu/U content of at least 30 weight percent by 5/31/04. A portion of the applicable inventory for this milestone will rely on the 241-Z waste path to disposition the effluent from a chloride wash process in fiscal years 2003 and 2004.