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ENGINEERING DATA TRANSMITTAL

Page 1 of 2

1. EDT 627153

2. To: (Receiving Organization)		3. From: (Originating Organization)		4. Related EDT No.:							
Project Development/Implementaton		Project Definition		625287							
5. Proj./Prog./Dept./Div.:		6. Design Authority/Design Agent/Cog. Engr.:		7. Purchase Order No.:							
RPP		Gary A. Hofferber		N/A							
8. Originator Remarks:				9. Equip./Component No.:							
Please review and approve the attached Interface Control Document for transfer of waste from the Waste Encapsulation and Storage Facility (WESF) to the Double-Shell Tank (DST) System				N/A							
11. Receiver Remarks:				10. System/Bldg./Facility:							
11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				WESF/DST							
				12. Major Assm. Dwg. No.:							
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Approval Designator (F)		Reason for Transmittal (G)			Disposition (H) & (I)						
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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
		Design Authority				1	1	B. Oldfield	S6-81	4/18/00	
		Design Agent				1	1	J.J. Badden	S5-07	4/13/00	
1	1	Cog. Eng.	G.A. Hofferber	4/5/00	B1-45	1	1	G.C. DeWeese	R3-73	4/13/00	
1	1	Cog. Mgr.	T.J. Conrads	4/6/00	R3-73	1	1	C. DeFigh-Price	R2-12	4/10/00	R2-12
1	1	QA	J. F. Bores	4/6/00	R2-89						
1	1	Safety	R.E. DeBusk	4/6/00	S7-86						
1	1	Env.	W.T. Dixon	4/1/00	R1-51						
18. Signature of EDT Originator		Date		19. Authorized Representative for Receiving Organization		Date		20. Design Authority/Cognizant Manager		Date	
G.A. Hofferber		4/5/00		T.J. Conrads		4/14/00		21. DOE APPROVAL (if required)			
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Continuation sheet for EDT 627153
DST/WESF
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Pg 2 of 2

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Interface Control Document Between the Double-Shell Tanks (DST) System and the Waste Encapsulation and Storage Facility (WESF)

CH2MHILL
Hanford Group, Inc.

Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

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Interface Control Document Between the Double-Shell Tank (DST) System and the Waste Encapsulation and Storage Facility (WESF)

G. A. Hofferber

TRW Inc. for CH2MHill Hanford Group, Inc.

Richland, WA 99352

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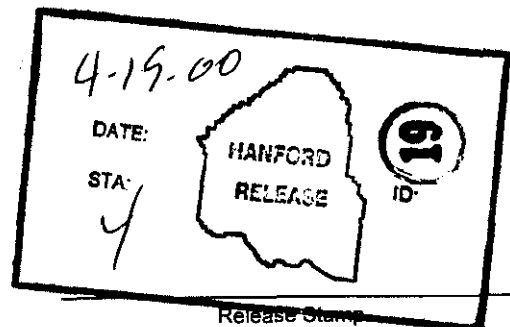
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Interface Control Document Between the Double-Shell Tanks (DST) System and the Waste Encapsulation and Storage Facility (WESF)

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TRW, Inc.

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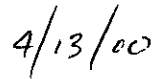
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INTERFACE CONTROL DOCUMENT FOR THE DOUBLE-SHELL TANKS SYSTEM AND WASTE ENCAPSULATION AND STORAGE FACILITY



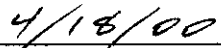
J. J. Badden
Tank Farm Facility Operations



Date



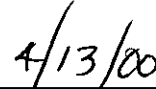
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WESF Project Manager



Date



G. C. DeWeese
Waste Feed Delivery Project Definition



Date

HNF-3396
Revision 0

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CONTENTS

1.0	SCOPE/PURPOSE	1
2.0	INTERFACE DESCRIPTION	2
3.0	ITEMS PASSED ACROSS THE INTERFACE	2
3.1	WESF WASTE.....	2
3.1.1	Volume of Waste	2
3.2	OFF-NORMAL CONDITION	2
3.2.1	Volume of Waste	3
3.3	TERMINAL CLEAN OUT WASTE	3
3.3.1	Maximum Volume of TCO Waste	3
3.4	WASTE PROPERTIES	3
3.5	TRANSFER FACILITY.....	3
4.0	ISSUES LIST.....	4
4.1	CAPSULE FAILURE SCENARIO.....	4
4.2	WASTE DELIVERY COORDINATION	4
4.3	AIR PERMIT RESPONSIBILITY.....	4
5.0	INTERFACE DIAGRAMS	5
5.1	MC312 TANKER TRUCK TO 204-AR WASTE UNLOADING FACILITY	5
5.2	MC312 TANKER TRUCK TO WESF	5
6.0	REFERENCES	6

HNF-3396

Revision 0

TERMS

DST	Double-shell tank
ETF	Effluent Treatment Facility
ICD	Interface Control Document
OWVP	Operational Waste Volume Projection
PHMC	Project Hanford Management Contractor
RPP	River Protection Project
TBR	To Be Refined
TCO	Terminal Clean Out
WESF	Waste Encapsulation and Storage Facility

INTERFACE CONTROL DOCUMENT FOR THE DOUBLE-SHELL TANKS SYSTEM AND THE WASTE ENCAPSULATION AND STORAGE FACILITY

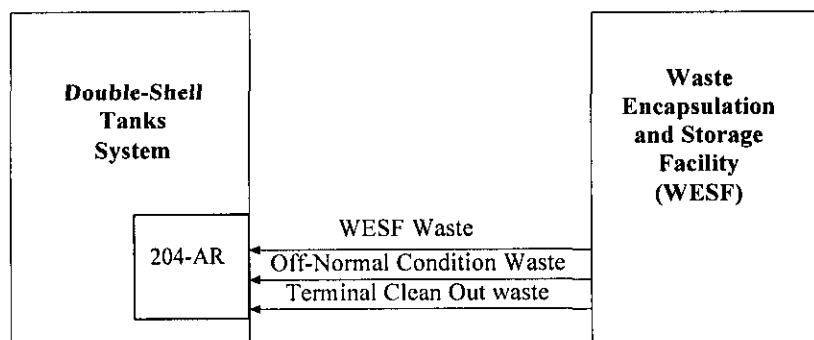
1.0 SCOPE/PURPOSE

This Interface Control Document (ICD) describes interfaces between the Double-Shell Tanks (DST) System and Waste Encapsulation and Storage Facility (WESF) (figure 1). WESF is currently operational as a storage facility for cesium and strontium capsules. This ICD covers current operational interfaces and those envisioned during Terminal Clean Out (TCO) activities in the future. WESF and the DST System do not have a direct physical interface. The waste will be moved by tank trailer to the 204-AR waste unloading facility.

The purpose of the ICD process is to formalize working agreements between the River Protection Project (RPP) DST System and systems/facilities operated by organizations or companies internal and external to RPP. This ICD has been developed as part of the requirements basis for design of the DST System to support the Phase I Privatization effort.

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.

Figure 1. Interface Between the Double-Shell Tanks System and the Waste Encapsulation and Storage Facility.



2.0 INTERFACE DESCRIPTION

Liquid waste generated during normal operations at WESF is collected in a storage tank (designated TK-100) and is typically shipped to the Effluent Treatment Facility (ETF). In the event that the contamination level of the contents of the TK-100 tank that exceeds ETF limits, transfers to the DST system will be necessary.

After the WESF operations are complete and the capsules are removed from the facility, a Terminal Clean Out process will begin. Wastes will be produced in the TCO process that could be transferred to the DST system if necessary.

An Off-normal condition involving the failure of a capsule would result in the need to move contaminated water generated as part of pool cell decontamination to the DST System (see Section 4.1).

WESF plans to utilize tank trailers (MC 312 designated trailers) to move waste to the DST system. This ICD defines the functional interface and requirements regarding the amount, timing and properties of the waste to be delivered to the DST system from WESF.

3.0 ITEMS PASSED ACROSS THE INTERFACE

This section contains the item descriptions and interface requirements associated with each item passed across the interface as defined in section 2.0 above. These interface requirements are intended to be bounding requirements for design purposes. For current operational estimates of waste volumes and timing, refer to the most recent revision of the *Operational Waste Volume Projection* (Strode 1999).

3.1 WESF WASTE

Waste collected during normal operations at WESF in tank TK-100 that exceeds ETF limits.

3.1.1 Volume of Waste

The DST system shall accept up to 19 m³ (5.0 kgal) per year of waste from WESF at the 204-AR waste unloading facility.

3.2 OFF-NORMAL CONDITION

Waste collected in the event of a failure of a capsule or other event that causes contamination of the WESF pool cells.

3.2.1 Volume of Waste

The DST system shall accept up to 340 m³ (90 kgal) shipped from WESF. (TBR) (see Section 4.1)

3.3 TERMINAL CLEAN OUT WASTE

This item is the waste generated during the Terminal Clean Out operations at WESF.

3.3.1 Maximum Volume of TCO Waste

The DST system shall accept a maximum of 76 m³ (20 kgal) of waste shipped from WESF through the 204-AR waste unloading facility. This waste will be delivered between years 2017 and 2021 (TBR).

3.4 WASTE PROPERTIES

For waste shipments defined in 3.1, 3.2, and 3.3 above WESF shall follow the established DST waste acceptance process as described in the *Double Shell Tank System Waste Analysis Plan* (Mulkey 1998), subject to the waste acceptance criteria in place at the time of the waste shipment. DST waste acceptance criteria requirements are specified in the most recent revisions of Mulkey 1998, *Data Quality Objectives for Tank Farms Waste Compatibility Program* (Banning 1999) and *Tank Farm Waste Transfer Compatibility Program* (Fowler 1999). Incoming waste streams are evaluated against all applicable waste acceptance criteria prior to transfer. If all criteria are met, the recommendation for transfer is documented in a waste compatibility assessment.

Additionally, WESF waste chemical and radionuclide compositions shall meet the acceptance requirements contained in *Operating Specification for the 204-AR Waste Unloading Facility* (FDH, 1998a) before the waste can be received at the 204-AR facility.

3.5 TRANSFER FACILITY

The DST System shall maintain the capability to interface with the MC-312 designated tank trailer at the 204-AR waste unloading facility to accept the WESF waste shipments defined in sections 3.1, 3.2, 3.3 and 3.4 above.

4.0 ISSUES LIST

4.1 CAPSULE FAILURE SCENARIO

In the event of a capsule failure in the WESF pool cells, it is possible that waste transfer to the DST system would become necessary. The actual volume of waste to be shipped depends on the decontamination strategy employed. The 90,000 gallon estimate used in section 3.2 is based upon the total pool volume and represents a worst case upper bound. There is also a possibility that the contamination associated with a capsule failure would not meet the 204-AR acceptance limits due to chloride content, therefore, an alternate transfer strategy may require further evaluation. Timing of shipments associated with this scenario is undetermined, but would likely be time urgent shipments.

4.2 WASTE DELIVERY COORDINATION

The 204-AR waste unloading facility receives waste from a number of sources including T-Plant, Building 325, and Building 324. Since the 204-AR waste unloading facility can receive only one truck at a time, delivery of waste from these sources must be scheduled and coordinated.

4.3 AIR PERMIT RESPONSIBILITY

The shipping contractor needs to certify that the MC-312 Cargo Tank is sealed airtight or prepare the appropriate Notice of Construction (air permit) for this tank. Either the certification that the vessel is airtight or the Notice of Construction must be approved by the Washington State Department of Health prior to shipment to the double-shell tank system.

5.0 INTERFACE DIAGRAMS

This section provides a 'roadmap' to lower level ICDs that have been, or will be, developed to define and control the specific physical interfaces and interface requirements between specific elements of the DST system and WESF.

For this interface, there are no lower level ICDs. However, the physical interfaces between the MC312 tanker truck and both the 204-AR Waste Unloading Facility as well as WESF subsystems are discussed here for reference.

5.1 MC312 TANKER TRUCK TO 204-AR WASTE UNLOADING FACILITY

The current baseline is to use a MC312 designated tank trailer. The unloading facility has been configured to interface with this tank trailer, however there is not an ICD that controls this interface. Current drawings (H-2-71506/7 and H-2-79957) support transfers using this tank trailer. Requirement 3.5 of this ICD requires that this capability be retained.

5.2 MC312 TANKER TRUCK TO WESF

The interface between the MC312 designated tank trailer and WESF are prescribed in *Plant Operating Procedure, WESF, Operate the Low Level Liquid Waste System* (FDH, 1998b). This procedure is written for transfers to ETF, but would be revised to cover transfers to DST.

6.0 REFERENCES

- Banning, D.L., 1999, *Data Quality Objectives for Tank Farms Waste Compatibility Program*, HNF-SD-WM-DQO-001, Rev. 3, Lockheed Martin Hanford, Corp., Richland, Washington.
- FDH, 1998a, *Operating Specification for the 204-AR Waste Unloading Facility*, OSD-T-151-0008, Rev. E-3, Project Hanford Management Contractor, Fluor Daniel Hanford, Inc., Richland, Washington.
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- Strode, J. N., 1999, *Operational Waste Volume Projection*, HNF-SD-WM-ER-029, Rev. 25, Lockheed Martin Hanford Corporation, Richland, Washington.