



# ICD 03 – Interface Control Document for Radioactive Solid Waste

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**NOTE:** Obtain concurrence and approval signatures on the following page prior to approval of this ICD.

**Approved by:** Walt Taylor

  
\_\_\_\_\_  
*Signature*

10/25/19  
\_\_\_\_\_  
*Date*

**BNI Area Project Manager**

**Issue Status:** Approved

River Protection Project  
Waste Treatment Plant  
2435 Stevens Center Place  
Richland, WA 99354  
United States of America  
Tel: 509 371 2000

**NOTE: This document defines current service needs, future needs, and service gaps. The identified service levels do not represent contractual obligations between service recipient and providers. Future contractual and funding actions to close service gaps will be accomplished by integration between the federal offices as part of the budget planning process.**

### Interface Signature Page

Interface organizations, as appropriate, sign this sheet indicating concurrence and approval with the ICD contents. These signatures signify that the ICD accurately reflects the current baselines of interface organization's contracts, except as indicated in Appendix A, ICD 03 Issues and Open Items. The BNI APM does not approve this ICD until all required signatures on this page have been obtained.

#### Contractor Concurrence

Organization	Position	Name	Signature	Date
WTP Contractor	ICD 03 Lead	Guy Robertshaw	<i>Guy Robertshaw</i>	10/8/19
WTP Contractor	ICD 03 Interface Owner	Dave Reinemann	<i>Dave Reinemann</i>	10-8-19
TOC	ICD 03 Interface Owner	Rick Tedeschi	<i>Rick Tedeschi</i>	10-8-19
MSC	ICD 03 Interface Owner	N/A		
PRC	ICD 03 Interface Owner	Tommy Hobbs Craig Larson	<i>Tommy Hobbs</i>	10/8/19

#### DOE Approval

Position	Name	Signature	Date
ORP Assistant Manager for Waste Treatment Plant	Tom Fletcher	<i>Tom Fletcher</i>	10/16/19
ORP Assistant Manager for Tank Farms	Rob Hastings	<i>Rob Hastings</i>	10/12/19
RL Assistant Manager for Mission Support / River and Plateau	Bill Hamel	<i>Bill Hamel</i>	10/22/19

## History Sheet

Rev	Date	Reason for revision	Revised by
A	16 Jul 2001	Issued for ORP concurrence	R Calmus
0	14 Mar 2002	Provided for ORP Contracting Officer to Issue as Operative ICDs. Upon issuance, this document will supersede BNFL-5193-ID-03, Rev 7	R Calmus
1	15 Aug 2002	Semi-annual update	R Calmus
2	15 Feb 2003	Semi-annual update	S Zuberi
3	15 Aug 2003	Annual update	S Lowe
4	31 Oct 2012	Periodic update. This revision implements 24590-WTP-ICF-ENG-04-0002.	M. Miller
5	17 Sep 2014	Periodic update.	M. Miller
6	04 Mar 2016	Periodic update. DFLAW Incorporation. Document is transposed into the new template in accordance with the Interface Control Procedure (24590-WTP-GPP-MGT-003, Rev 10). This revision is considered a total re-write therefore, no revision bars are shown. Closed ICD Issues I3-47, I3-48, I3-51. Added Issue I3-53. Closed Action Items A3-08 and A3-09. Closed Open Items 0001, 0002, and 0005. Added Open Items 0006, 0007, 0008, and 0009.	L. Goytowski.
7	09 Oct 2019	Revised per scope document CCN 314461. Added Sections 3, 4 and 5 based on revised ICD template. This is a major revision, and change bars are not shown.  Incorporated ICF 24590-WTP-ICF-MGT-19-0001; schedule activities were deleted.	G. Robertshaw

## Revision Description

ICD Section	Description
All	The ICD has been reformatted in accordance with the requirements of <i>Interface Control Documents</i> (24590-WTP-GPP-RAOS-OS-0001, Rev 3).
Acronyms	Updated list.
1.1	Renamed section to “Interface Scope” and added new content.
1.2	Renamed section to “System Overview”, added new content and a block diagram.
1.3	New section to “Interface Functions”.
Table 1	Renamed table to “Functions of the Radioactive, Dangerous Liquid Effluent Interface” and revised content to consider aspects that need to be in place for a complete interface.
1.4	New section, “Special Interface Roles”.
2	Moved references to new Section 5 and renamed section, “Interface Background Information,” with expanded subsection discussions.
2.1	New subsection, “Physical Information,” with discussion to address consideration of construction and commissioning activities.
2.1.1	New subsection, “RSW Loading and Transportation”
2.1.2	New subsection, “LAW Melter Characteristic”
Table 2	Revised Table 2 to show only LAW Melter information. The HLW Melter information has been moved to Appendix B.
2.1.3	New Subsection, “LAW Melter Transport”
2.2	New subsection, “Administrative Information”.
2.2.1	New subsection, “Safety Information,” with discussion to address potential safety-related issues associated with the interface.
2.2.2	New subsection, “Regulatory Information,” with discussion to provide background regulatory information related to the interface.
2.2.3	New subsection, “Post-Commissioning/Maintenance,” with discussion to provide background information associated with the operation and maintenance aspects of the interface.
2.2.4	New subsection, “Interface Logic”
2.2.5	New subsection, “Interface Schedule,” to reference the Mission Integration DFLAW Integrated Program Schedule.
2.3	New subsection, “Acceptance Criteria.”
3.0	New section, “Requirements,” and subsections to address technical, activity level flow down, and programmatic requirements for ICD 03.
3.1	New section to address “Technical Requirements” (Design Criteria). Content is from 24590-WTP-ICF-MGT-19-0001.

## Revision Description

ICD Section	Description
3.2	New section to address “Activity Level Requirements”. Content is from 24590-WTP-ICF-MGT-19-0001.
3.3	New section to address “Programmatic Requirements”. Content is from 24590-WTP-ICF-MGT-19-0001.
4	New section, “Requisite Interface Items,” and subsections to address WTP Contractor, TOC and MSC interface items.
4.1	New section to address “WTP Contractor Requisite Interface Items”. Content is from 24590-WTP-ICF-MGT-19-0001.
4.2	New section to address “TOC Requisite Interface Items” as a placeholder.
4.3	New section to address “PRC Contractor Requisite Interface Items”. Content is from 24590-WTP-ICF-MGT-19-0001.
5	New section to address References. Various references were deleted and added to support this revision of ICD 03.
Appendix A	Re-labeled as Issues and Open Items. Changed table format to align with ICD Action Items List.
Appendix B	Re-labeled as HLW/PF Radioactive Solid Waste
Appendix C	Deleted. New open items to be listed in Appendix A.

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## Acronyms

BNI	Bechtel National, Incorporated
CCN	Correspondence Control Number
CHPRC	CH2M Hill Plateau Remediation Contractor
CWC	Central Waste Complex
DFLAW	Direct feed low-activity waste
DOE	US Department of Energy
DSA	Documented Safety Analysis
DWPF	Defense Waste Processing Facility
ORP	Office of River Protection
DOT	US Department of Transportation
HSSWAC	Hanford Site Solid Waste Acceptance Criteria
HLW	High-level waste
ICD	Interface Control Document
IDF	Integrated Disposal Facility
IDFWAC	Integrated disposal facility waste acceptance criteria
IHLW	Immobilized high-level waste
ILAW	Immobilized low-activity waste
LDR	Land Disposal Restrictions
LAW	Low-activity waste
LLW	Low-level waste
MLLW	Mixed low-level waste
NOC	Notice of Construction
PRC	Plateau Remediation Contractor
PT	Pretreatment Facility
RAM	Requirement Area Manager
RH	Remote handled
RSW	Radioactive solid waste
TOC	Tank Operations Contractor
TRU	Transuranic waste
TRUM	Transuranic mixed waste
TSD	Transportation safety document
WAC	Washington Administrative Code
WDOH	Washington State Department of Health
WIR	Waste incidental to reprocessing
WTP	Hanford Tank Waste Treatment and Immobilization Plant
WVHLW	West Valley High-Level Waste

# 1 Interface Description

## 1.1 Interface Scope

This document describes the administrative and physical interfaces required for managing the disposal of radioactive solid waste (RSW) generated during the operation of the Hanford Tank Waste Treatment and Immobilization Plant (WTP), which includes the direct feed low-activity waste (DFLAW) configuration.

Radioactive solid waste (RSW) includes low-level waste (LLW), mixed low-level waste (MLLW), derived from the treatment of US Department of Energy (DOE) Hanford tank waste. RSW is expected to be generated as a result of providing immobilized low-activity waste (ILAW) waste treatment services, which includes spent or failed melters.

This document describes the interface roles between the WTP Contractor, Tank Operations Contractor (TOC), and the Plateau Remediation Contractor (PRC) for the disposal of RSW and equipment generated during DFLAW operations. During normal operations, the WTP-generated RSW is collected at multiple locations on the WTP site for removal and disposal. The TOC coordinates transportation, treatment, and disposal/storage of the RSW. The PRC provides facilities and unloading equipment for the transfer of the RSW that is slated for storage and disposal.

**Note: This document revision focuses on DFLAW operations with all references to High-Level Waste (HLW) and Pretreatment Facility (PT) processes captured in Appendix B for future consideration. The PT/HLW operating scenario will be addressed in a future ICD 03 revision.**

## 1.2 System Overview

The function of the RSW system is to collect and package radioactive solid waste at the point of generation for shipment and disposal. This waste does not include the LAW glass containers, but it does include any vitrified glass due to cleaning, failed pumps, vessels, melters and any other components that have come in contact with radioactive material. The waste is packaged for disposal in approved containers as specified by TOC then transferred to the storage and export areas, located throughout facilities as shown on *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2019d).

The waste is then transported by the TOC from the designated collection points on the WTP. The TOC coordinates shipping of WTP RSW through adherence to federal, state, and site regulatory and transportation requirements, and PRC waste acceptance criteria. All WTP transportation and packaging activities involving DOE nuclear facilities comply with Department of Transportation (DOT) regulations, or with a 10 CFR 830 compliant transport safety document (TSD) developed in accordance with DOE Order 460.1C, *Packaging and Transportation Safety* (DOE 2010). The TOC coordinates transportation, treatment, and disposal/storage of WTP Contractor RSW and failed or spent melters. Treatment of RSW may be completed by offsite treatment subcontractors as coordinated, arranged and transported by the TOC. Most of the radioactive waste generated by the WTP project requires further treatment before disposal, which may include macro-encapsulation, micro-encapsulation, size reduction, or volume reduction.

The Plateau Remediation Contractor (PRC) establishes and maintains the Integrated Disposal Facility Waste Acceptance Criteria (IDFWAC). PRC provides the facilities and unloading equipment for the transfer of RSW from TOC transport equipment for RSW generated by the WTP.



### **1.3 Interface Functions**

Table 1 presents the general interface functions and corresponding responsibilities for each interfacing contractor. Requirements derived from these functions are listed in Section 3 for each contractor.

**Table 1 Functions of the Radioactive Solid Waste Interface**

<b>Interface Function</b>	<b>WTP Responsibility</b>	<b>TOC Responsibility</b>	<b>MSC/PRC Responsibility</b>
Provide transfer of WTP secondary solid waste to TOC for disposal including loading, transport, and unloading.	Provide resources to load the RSW onto TOC arranged and coordinated transport vehicles.	Determine disposal destination and provide transport vehicles.	For RSW transported to the IDF, provide resources for unloading RSW from transport vehicles and processing for disposal
Establish acceptance criteria and provisions for exceptions.	Provide information to support the IDF Waste Acceptance Criteria. Maintain the <i>WTP Radioactive Waste Management Basis</i> , 24590-WTP-PL-RACW-WM-0008 (BNI 2018e). Communicate changes to the LAW Documented Safety Analysis that affect this interface.	Develop transportation safety documentation.	Manage the Hanford site Transportation Safety Document (TSD). Prepare the IDF Waste Acceptance Criteria. Maintain the IDF Performance Assessment and the IDF/disposal sites Radioactive Waste Management Basis.
Characterize and certify RSW waste streams.	Provide waste characterization data to support disposal of RSW.	Advise the WTP Contractor for characterization data needed to evaluate disposal options. Review characterization data from the WTP Contractor to support disposal.	Review characterization data from the WTP Contractor to support waste acceptance for disposal at IDF.
Provide forecast and planning data for RSW generation.	Provide updates of the RSW forecast.	Evaluate the RSW forecast for transport and disposal planning.	Evaluate the RSW forecast for IDF disposal planning.
Provide permit modifications for treatment, storage, and disposal of WTP RSW.	Provide permit modifications for treatment and storage of WTP RSW.	Provide permit modifications for transportation of WTP RSW.	Provide permit modifications for disposal of WTP RSW at the IDF.
Provide packaging for RSW.	Package RSW according to TOC instructions	Provide materials and instructions to the WTP Contractor for packaging RSW.	No action.
Develop procedures for loading, transport, and unloading.	Develop procedures for loading RSW. Review the TOC's loading/unloading procedures and	Develop procedures for transporting WTP RSW	Develop procedures for unloading WTP RSW at the IDF. Review the TOC's

<b>Interface Function</b>	<b>WTP Responsibility</b>	<b>TOC Responsibility</b>	<b>MSC/PRC Responsibility</b>
	the equipment data for transport systems utilized for WTP RSW.		loading/unloading procedures and the equipment data for transport systems utilized for WTP generated RSW.
Provide storage and communication for interruptions of transportation.	Provide permitted storage capability to support planning of RSW transfers. Notify the other contractors of any events that may impact RSW transportation and/or subsequent disposal operations.	Notify the other contractors of any events that may impact RSW transportation and/or subsequent disposal operations.	Notify the other contractors of any events that may impact RSW transportation and/or subsequent disposal operations.

## 1.4 Special Interface Roles

N/A

# 2 Interface Background Information

This section provides background information pertinent to the interfaces for managing WTP RSW. Requirements related to the interfaces, along with their basis, implementation, and configuration management are presented in Section 3. Other actions needed to complete the interfaces are listed in Section 4

## 2.1 Physical Information

The RSW generated is packaged and moved to the storage and export areas located throughout the DFLAW facilities and the ILAW Transport Storage area during commissioning and operations. These RSW storage and export areas are located at:

- Northeast side of Building 25, the LAW Effluent Processing Building
- Southeast corner of Building 60, the Analytical Laboratory
- Northeast corner of Building 20, the LAW Vitrification Building
- Permitted Waste Storage Area southeast of Building 20 (identified as 90A/B on the *RPP-WTP Plot Plan*, 24590-BOF-P1-50-00001) (BNI 2019i)
- Permitted Transportation Staging Area

Movement of waste between facilities can be completed as an intra-facility transfer. This is accomplished by WTP administered vehicles that are to be used to move RSW between WTP facilities and any WTP RSW storage area within the WTP boundary fence line.

The second transfer process is a Hanford sitewide (inter-facility) transfer that is accomplished by non-WTP administered vehicles being used to remove RSW from the WTP site. The physical interface points for the transfer of RSW onto TOC-supplied transporter trailers are the same locations sited above.

Note that the *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2019d) depicts potential pick-up locations of RSW for the bulk of RSW. However, for large failed process equipment requiring special handling features, exchange methods, and/or transport systems, other transfer areas may be identified by WTP Waste Management personnel as the project becomes operational.

### 2.1.1 RSW Loading and Transportation

#### 2.1.1.1 Process RSW

The RSW generated during DFLAW commissioning and operations is collected at the waste pick-up locations marked on *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2019d) for transport to the final disposal location using transport vehicles arranged by TOC. Loading of TOC-arranged transport vehicles with WTP generated RSW occurs at the WTP-provided waste handling facilities, using WTP Contractor-provided lifting equipment and personnel. For large failed process equipment (such as the melters) requiring special handling features, exchange methods, and/or transport systems, other transfer areas may be identified as the project becomes operational.

Based on the waste profile information provided by the WTP Contractor and the waste acceptance criteria of the intended disposal facility, the TOC determines the appropriate treatment and disposal path. TOC may transport RSW offsite for treatment prior to disposal. Treatment may include processing to meet land disposal restrictions, volume reduction, or stabilization.

**2.1.1.2 Spent or Failed Melters**

The physical interface point for transport of the melter by the TOC is at the south side of the LAW Facility on the melter assembly pad/failed melter pad. The spent or failed LAW melters are moved to the failed melter pad using the existing rail system that is designed to move the melters in and out of the LAW Facility. The melters are staged on the failed melter pad in preparation for transport. The TOC provides a transport system capable of transporting the LAW melters from the physical interface point to the treatment, storage, and disposal location.

The interface effort (both requirements and any open action items/issues) for spent melter handling and disposition assumes a key schedule strategy: the completion of all activities for readiness to handle and disposition spent melters are not required prior to start of either WTP cold or hot commissioning. This relates to specific spent/failed melter criteria in WTP requirement 3.3.1.4, TOC requirements 3.3.2.2 and 3.3.2.4, and PRC requirement 3.3.3.5. Melters are considered a consumable item with a minimum operating life of five years, based upon general design functional requirements in section 15.3.1 of the *WTP Basis of Design* (BNI 2019m). Actual operating life may vary; from either premature failure during initial melter heat up and commissioning, to ten or more years. Because this is such a large schedule range, and there is a potential for significantly varied conditions upon failure, it is not practical to require a complete set of plant systems, personnel readiness, and documentation, covering all contingencies, prior to melter heat up. Also supporting this strategy is the practicality that the earliest a replacement melter for WTP can be ready is mid FY24, based upon updated schedule information initially depicted in the *Low-Activity Waste Melter Replacement and Disposition Logistics Alternatives Analysis*, RPP-RPT-60058 (WRPS 2017). This date is well after start of planned WTP hot commissioning. This does not imply that no effort is in progress to support spent melter disposition; the DFLAW Mission Integration program is coordinating scope to ensure plant systems, personnel and documentation are integrated with the replacement melter completion schedule.

**2.1.2 LAW Melter Characteristics**

Table 2 summarizes the current melter design envelope. LAW melter data is as designed for installation, without consideration for disposal packaging (e.g. fabrication to seal, void fill, etc.).

**Table 2 LAW Melter Characteristics**

Melter Type	Height	Length	Width	Melter Weight (Empty)	Melter Weight (Full of glass)	Overpack Weight (Empty)	Overpack Weight (Loaded)
LAW	190-in	256-in	367-in	650,000 lbs.	700,000 lbs.	N/A	N/A

Eighteen LAW melters require disposal over the mission of the WTP, assuming a 40-year plant life, including a contingency of two LAW melters.

The *Low-Activity Waste Melter Replacement and Disposition Logistics Alternatives Analysis*, RPP-RPT-60058, (WRPS 2017) was completed to provide a recommended life-cycle management approach during the operational phase of the LAW Facility for replacement and disposition of the used melters. This study documents the process of identifying and screening options to arrive at a set of alternatives for melter replacement and disposition using criteria important to successfully supporting LAW Vitrification Facility continued operation.

The LAW melter radiological and physical characteristics are provided by the WTP Contractor to the TOC and the PRC to support the development of transportation requirements, treatment methodology, disposal permits, and disposal site performance assessments. Examples of information include: amount of radionuclides and hazardous materials by chemical form, dose map, melter components and compositions of components, physical form of waste remaining in melter, composition of waste form remaining in melter, estimate of cooling profiles after melter failure, and amount and type of any filler material placed in the melters.

### 2.1.3 LAW Melter Transport

The TOC melter transport vehicle will be hydraulically controlled heavy haul trailer as described in the *Spent/Failed Low-Activity Transport System Evaluation Report*, RPP-RPT-58204, (WRPS 2014). The LAW melter characteristics are listed in Table 2 of Section 2.1.2. The LAW melter characteristics for transport are expected to be impacted by melter disposal preparation and thus different from those presented in Table 2. Therefore, the determination of the packaged-melter characteristics, which are needed to specify equipment for melter loading and transport, are dependent on the finalization of WTP melter packaging details (e.g. void fill, amount of glass disposed with melter, additional plating, etc.). Actions that determine the physical configuration of the LAW melters for disposal are being tracked by Open Item 0007 in the ICD Action Items List. The *Spent/Failed Low-Activity Melter Transport System Evaluation Report*, (WRPS 2014) document examines options for loading the spent/failed LAW melters at the WTP, transportation alternatives, required transportation documentation, transportation routes, and configurations for unloading the melters at the IDF. Disposal of the WTP LAW melters requires close interface partner cooperation and communication.

## 2.2 Administrative Information

This section describes the administrative activities necessary to ensure the proper execution of the physical interfaces associated with transfer of RSW from the WTP Contractor to the TOC.

### 2.2.1 Safety Information

The design processes for the WTP, TOC and PRC interface contractors include integrated safety management principles and are communicated through the interface in the configuration management documents identified in Section 3.

The *Documented Safety Analysis for the Low-Activity Waste Facility*, 24590-LAW-DSA-NS-18-0001 (BNI 2019e), includes the results of *Process Hazards Analysis in Support of the LAW DSA*, 24590-LAW-ES-NS-17-004 (BNI 2019l) which evaluates the transport of RSW product packages within the WTP DFLAW site. For DFLAW operations there are two types of RSW movement envisioned. The first is intra-facility transfer. This is to be accomplished by WTP administered vehicles that are to be used to move RSW between DFLAW facilities and any RSW storage area within the DFLAW operating island. This first type of RSW movement is governed by the DSA, *Documented Safety Analysis for the Low-Activity Waste Facility*, 24590-LAW-DSA-NS-18-0001 (BNI 2019e).

The second is a Hanford sitewide (inter-facility) transfer that is accomplished by non-WTP administered vehicles being used to remove RSW from the DFLAW site. It is expected that RSW sitewide shipments comply with either DOT regulations or with a 10 CFR 830 compliant transport safety document (TSD) equivalent requirements developed under a DOE Order 460.1C, *Packaging and Transportation Safety* (DOE 2010) compliant Hanford Sitewide Transportation Safety Program. The *Hanford Sitewide Transportation Safety Document* (DOE 2017) is issued and maintained by DOE to ensure consistent safe transport by all contractors on the Hanford Site. The Hanford TSD describes the methodology and compliance process used to provide equivalent safety to the DOT regulations for onsite shipments.

## 2.2.2 Regulatory Information

All onsite transportation and packaging activities involving DOE nuclear facilities comply with DOT regulations, or with 10 CFR 830. At Hanford, all onsite RSW shipments either comply with DOT regulations or the *Hanford Sitewide Transportation Safety Document* (DOE 2017). Department of Transportation (DOT) compliant packages are shipped in accordance with 49 CFR 173.

All WTP radioactive solid waste can be disposed of as LLW because the WTP LAW Vitrification Facility is not reprocessing spent nuclear fuel, and thus per DOE M 435.1-1 HLW definition (Chapter II) (DOE 2011b), no wastes from it are HLW. This basis will be added to the DOE-approved WTP facility Radioactive Waste Management Basis (RWMB) document.

## 2.2.3 Post-Commissioning/Maintenance

Transfers of routine RSW from the WTP to treatment, storage, or disposal facilities are planned to minimize the amount of storage required at the WTP per 24590-WTP-GPP-RACW-WM-0001, *Commissioning Radioactive Waste Management* (BNI 2018a, preliminary status). Packages authorized for shipment by the *Hanford Sitewide Transportation Safety Document*, DOE/RL-2001-36 (DOE 2017) may occasionally require longer lead times for regulatory concurrence. The frequency of waste transfer requires dedicated TOC support for waste acceptance, receipt, verification, and treatment.

## 2.2.4 Interface Logic

The solid waste acceptance process ensures that waste sent to waste management units complies with all environmental, safety, and operational requirements.

The process for accepting RSW from the WTP is shown in the Radioactive Solid Waste Management Process Diagram (Figure 1). Each of the statements below with numbers in parentheses (#) corresponds to the numbered blocks in Figure 1.

- (1) **Perform Waste Planning** – WTP and TOC perform waste identification and waste management decisions using the *Waste Planning Checklist*.
- (2) **Characterize the RSW Streams** – WTP and TOC determines the physical and chemical characteristics of the waste to properly designate and manage the waste in accordance with state and federal regulations.
- (3) **Develop and Submit a Waste Profile** – With support of the WTP, TOC develops and submits a waste profile to the treatment, storage, and/or disposal facility.
- (4) **Package Waste in Approved Containers for Transport** – WTP packages the waste in approved containers as supplied by TOC to meet the transportation requirements.

- (5) **Offsite Treatment or Direct Hanford Disposal Determination** – TOC determines the RSW disposal path based the waste characteristics and the waste acceptance criteria for IDF.

If the RSW does not meet the IDF waste acceptance criteria for disposal, the RSW is sent to an offsite vendor for treatment and disposal. Go to step 6

Or

If RSW meets the IDF waste acceptance criteria for disposal of onsite, it is sent to IDF. Go to Step 10.

- (6) **Ship Waste** – TOC ships the waste to the vendors facility  
(7) **RSW Treatment for Disposal** – The offsite vendor evaluates and repackages the waste for disposal is in accordance with the disposal facilities waste acceptance criteria.  
(8) **Offsite or Onsite Disposal?** – Once the RSW has been evaluated and treated by the offsite disposal facility it is re-evaluated for onsite disposal at the IDF disposal facility.

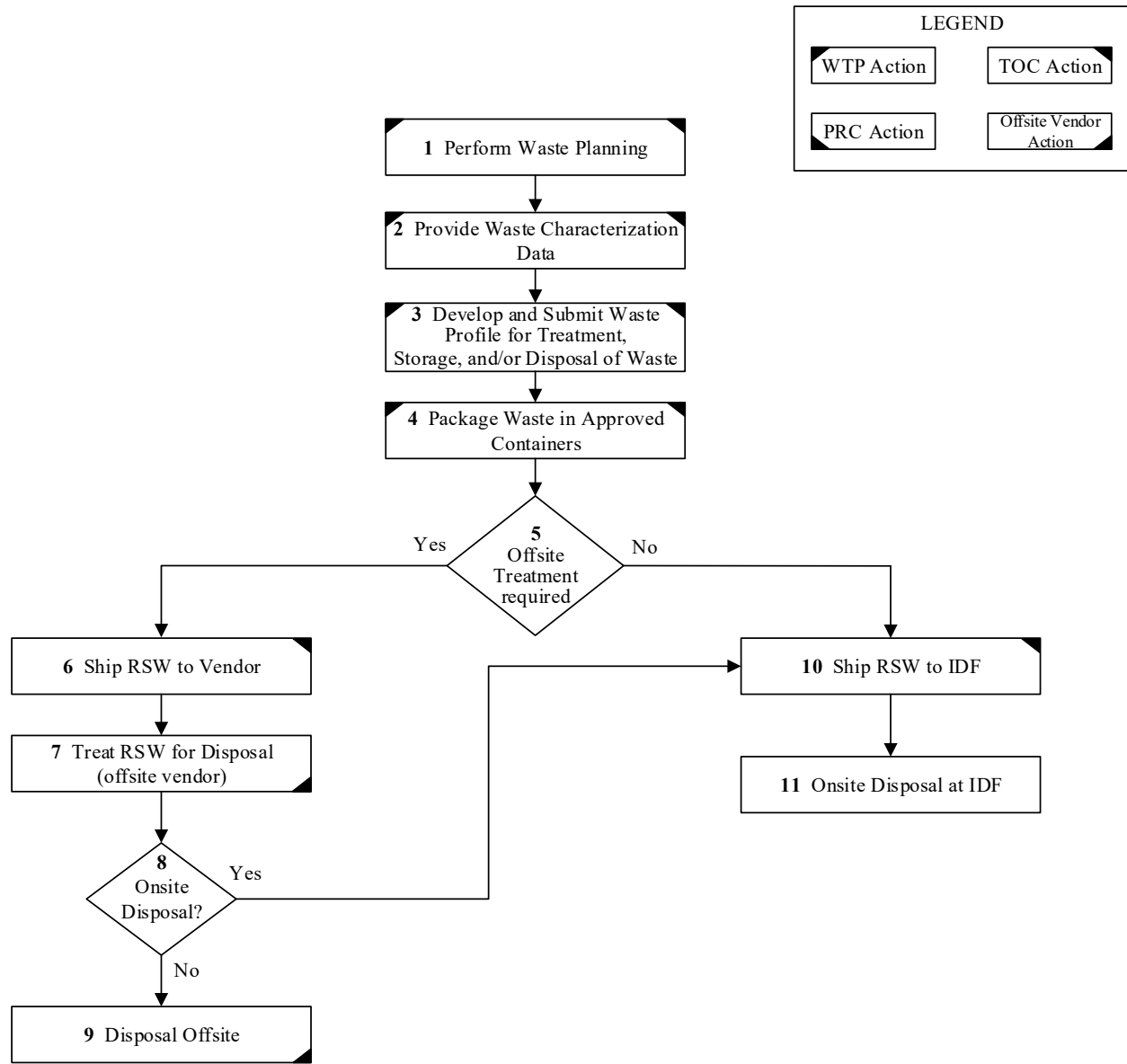
If onsite disposal is still not acceptable go to step (9).

If Onsite disposal is acceptable go to step10.

- (9) **Offsite Disposal** – Offsite vendor is responsible to ensure RSW is packaged for disposal in accordance to the offsite disposal facilities waste acceptance criteria.  
(10) **Ship Waste** – TOC ships the waste to the IDF facility  
(11) **Onsite Disposal** – Waste disposed of at the Hanford facility managed by PRC.



Figure 1 Radioactive Solid Waste Management Process Diagram



### 2.2.5 Interface Schedule

Refer to the Mission Integration DFLAW Integrated Program Schedule for monitoring appropriate interface schedule milestones as listed in Table 3 below:

Table 3 Radioactive Solid Waste Service Schedule

Contractor	Schedule Section	Act ID	Title
WTP	1.2.3.3 Hot	1W1500	LAW – Ops – Start Hot Commissioning
WTP	1.2.3.3 Hot	1W7487	Initial waste Delivery
TOC	1.3.7.5.1	1T26124	Process IDF PA Rev 1 for Public Release

Contractor	Schedule Section	Act ID	Title
PRC	1.4.1.2	1CP01E1	IDF RCRA Treatment, Storage, or Disposal Permit Approved
PRC	1.4.1.3	1T26145	Update IDF PA Waste Acceptance Criteria and Obtain Low- Level Waste Disposal Facility Federal Review Group Concurrence
PRC	1.4.1.4.6	1C1155	IDF Readiness Approval

### 2.2.6 Acceptance Criteria

For waste to be accepted for disposal at Hanford, all RSW waste streams are characterized and certified as meeting the requirements and/or the Waste Acceptance Criteria for the Integrated Disposal Facility (IDFWAC) (still under development), depending on where the RSW is to be disposed. The IDFWAC at the time of waste shipment defines the acceptance criteria for treatment, storage, and/or disposal of RSW. The IDFWAC includes requirements on the waste package, descriptions of the contents of the waste package, the radionuclide content, physical size, and chemical composition. Section 2.2.4 above provides explanation of the Radioactive Solid Waste Management Process.

Although RSW from WTP to be processed for disposal include both mixed solid waste forms and the LAW melters, the melters present unique waste disposal issues. It must be determined if the internals of the LAW melter will require void fill or grouting before final burial. (Open Item 0007) The best location to treat melters to meet land disposal requirements is dependent upon this determination.

In accordance with the baseline planning assumption, the spent/failed melters must comply with the current IDFWAC (at time of disposal) prior to disposal on site. Use of the IDFWAC is the current baseline planning enabling assumption. Any exceptions to those requirements can be obtained as defined in the current IDFWAC. Waste acceptance criteria specific to the selected melter disposal location is implemented by the PRC at the time of disposal. TOC evaluates the intended melter disposal package against the disposal facility waste acceptance criteria.

The PRC is contractually obligated (Plateau Remediation Contract Section J, Appendix C, paragraph 4.d) to comply with DOE O 435.1. DOE O 435.1 defines the technical and administrative requirements for acceptance of waste for treatment, storage, and disposal facilities and covers disposal of the waste product package at the IDF. The order states: "All radioactive waste shall be managed in accordance with the requirements of DOE M 435.1-1, *Radioactive Waste Management Manual*."

Preliminary waste acceptance criteria for the IDF are identified in the *Waste Acceptance Criteria for the Immobilized Low-Activity Waste Disposal Facility*, RPP-8402 (CH2 2002) and were approved by ORP per letter 02-REQ-029 (DOE 2002). Final IDF waste acceptance criteria have yet to be approved and must be in place prior to receipt of any waste at IDF. Exceptions to acceptance criteria that require a DOE waiver or approval of a safety document revision are submitted by the PRC to the DOE.

## 3 Requirements

This section identifies all Technical (Design Criteria), Activity Level, and Programmatic requirements associated with the interfaces defined by the ICD. Specific requirements for implementation by the appropriate contractors are listed in this section only. In addition to the requirement statement, each requirement includes a basis for that requirement, the requirement source document(s), and the implementing document(s) (if known at the time of revision). Source and implementing documents are listed as configuration management items for each requirement.

Note #1: Some of the WTP implementing mechanisms identified in the following sections are identified as being in “preliminary status” (i.e., alphanumeric revision status) or those currently “under development”. Final traceability for implementation of the requirements ultimately established within the WTP Requirements Management Program based on numeric revisions of these documents, or successors, being formally issued.

Note #2: The following sections are focused on the Direct Feed Low Activity Waste (DFLAW) operating scenario. Requirements and implementation documentation for the PT/HLW operating scenario will be captured in a future ICD 03 revision.

### 3.1 Technical Requirements (Design Criteria)

Technical requirements are requirements managed by engineering organizations according to engineering procedures and work processes.

#### 3.1.1 Waste Treatment Plant WTP Contractor Technical Requirements

3.1.1.1 The WTP Contractor shall provide an interim storage area (e.g., central accumulation area, permitted storage) for temporarily storing WTP radioactive solid waste (RSW).

##### Requirement Basis:

Before radioactive solid waste (RSW) can be delivered from the Waste Treatment Plant to a Treatment, Storage, and Disposal (TSD) facility, it may require interim storage while it undergoes identification/characterization and packaging prior to being delivered to a TSD facility. An interim storage area is also needed because the WTP does not have significant waste management areas to provide for the accumulation of waste during normal operations and maintenance outages. New waste streams could take several months to characterize, package, and ship for final disposal, while delays in shipping imposed by the offsite treatment facility(s) based on their licenses and business needs to be accommodated. Therefore, waste treatment and storage capabilities are critical to a successful waste management program. See the *Commissioning Waste Management Program Description* (BNI 2018d) and assumption 4.1.1.5 of the *Radioactive Waste Management Basis* (BNI 2018e) for anticipated storage durations for Low Level Waste (LLW) and Mixed Low-Level Waste (MLLW).

##### Configuration Management Document(s):

Requirement Source(s):

- 24590-WTP-RPT-ENG-13-030, *One System Consolidated Waste Management Facility Site Evaluation* (BNI 2015a)
- CCN 259609, One System Decision Document 0003, *Consolidated Waste Management Approach* (BNI 2015b)
- 24590-WTP-PD-RACW-WM-00001, *Commissioning Waste Management Program Description* (BNI 2018d)
- 24590-WTP-PL-RACW-WM-0008, *Radioactive Waste Management Basis (RWMB)* (BNI 2018e)
- CCN 268897, *Building 32 and Pad 90A/B Requirements – To Gather Input from NSE, Engineering, Operations, Permitting, and One System to Decide if Building 32 & Pad 90A/B Should Stay Part of the Project Scope* (BNI 2018f)

- WAC 173-303, *Dangerous Waste Regulations*
- DOE M 435.1-1, *Radioactive Waste Management Manual* (DOE 2011b)

Implementation:

- 24590-BOF-P1-50-00001, *RPP-WTP Plot Plan* (BNI 2019i)
- 24590-BOF-P1-50-00011, *Balance of Facilities General Arrangement High Consequence Material 90A and 90B Storage Areas at Elevation 681'-9"* (BNI 2019j)

### **3.1.2 Tank Operating Contractor (TOC) Technical Requirements**

Not Applicable

### **3.1.3 Plateau Remediation Contractor (PRC) Technical Requirements**

Not Applicable

## **3.2 Activity Level Requirements**

### **3.2.1 WTP Contractor Activity Level Requirements**

Not Applicable

### **3.2.2 TOC Activity Level Requirements**

Not Applicable

### **3.2.3 PRC Activity Level Requirements**

Not Applicable

## **3.3 Programmatic Requirements**

Programmatic requirements include those specified through the contract; federal, state, and local laws and regulations; DOE directives; and negotiated agreements such as memorandums of agreement, commitments and permits.

### **3.3.1 WTP Contractor Programmatic Requirements**

- 3.3.1.1 The WTP Contractor shall provide the Plateau Remediation Contractor (PRC) and the Tank Operating Contractor (TOC) an annual update of the RSW forecast as requested in written data call(s) from PRC.

#### **Requirement Basis:**

Reference requirement 3.3.3.3 for the PRC data call interface. PRC will use the annual waste forecast(s) from generators to obtain waste planning information for estimated quantities of RSW expected to be managed by PRC. A copy of the forecast may also be used by the TOC to support budgetary planning for expected waste services.

**Configuration Management Document(s):**

Requirement Source(s):

- DOE M 435.1-1, Radioactive Waste Management Manual (DOE 2011b)
- HNF-EP-0063, *Hanford Site Solid Waste Acceptance Criteria, Section 1.4.4* (CHPRC 2017a)
- IDF-00002, *Waste Acceptance Criteria for the Integrated Disposal Facility* (under development)

Implementation:

- 24590-WTP-GPP-RACW-WM-0001, *Commissioning Radioactive Waste Management*, Sections 3.3, 6.1.2.e.4 and 7.1.2.d.4 (BNI 2018a, preliminary status)  
Implementation Examples:
  - CCN 310467, *2019 Solid Waste Information Tracking System (SWITS) -WTP Waste Forecast Data* (BNI 2019h)
  - CCN 310749, *Fiscal Year 2019 Life Cycle Solid Waste Forecast Data for the Hanford Tank Waste Treatment and Immobilization Plant* (BNI 2019a)

3.3.1.2 The WTP Contractor shall characterize RSW streams to:

1. Determine the physical characteristics and chemical characterization of the waste with sufficient accuracy and detail to properly designate and manage waste in accordance with state and federal regulations, and
2. Ensure the requirements for major radionuclides and the concentration of each major radionuclide are established with sufficient sensitivity and accuracy to properly classify and manage the waste as required by DOE M 435.1-1.
3. Ensure all RSW streams being transported to applicable Treatment, Storage, and Disposal (TSD) facility(s) are certified in accordance with DOE M 435.1-1.

Provide the waste characterization and certification information to the Tank Operating Contractor (TOC).

**Requirement Basis:**

WTP is the waste generator and is responsible to properly identify waste characteristics through process knowledge and/or sampling and analysis. This information is needed by the TOC to determine the appropriate disposal path for the waste (i.e., Hanford onsite or offsite) based on the waste acceptance criteria of the Treatment, Storage, and Disposal (TSD) facility(s).

**Configuration Management Document(s):**

Requirement Source(s):

- DOE M 435.1-1, Radioactive Waste Management Manual (DOE 2011b)
- WAC 173-303, Dangerous Waste Regulations

Implementation:

- 24590-WTP-GPP-RACW-WM-0001, Commissioning Radioactive Waste Management (BNI 2018a, preliminary status)
- 24590-WTP-GPP-RACW-WM-1004, *Waste Designation* (BNI 2018b)
- 24590-WTP-PL-RACW-WM-0006 *Commissioning Solid Waste Radionuclide Characterization Plan* (under development).

3.3.1.3 The WTP Contractor shall package, mark, and label RSW generated on the WTP site in accordance with TOC instructions. The packaging, marking, and labeling process shall:

1. Be closely coordinated with the TOC to ensure all transportation safety requirements and TSD facility waste acceptance criteria are met.
2. Allow overview by TOC staff at any time.
3. Ensure spent carbon bed media is stored in DOT 7A Type A steel drums as required by 24590-LAW-TSR-NS-18-0001, *Low Activity Waste Facility Technical Safety Requirements, Limiting Condition for Operation* (LCO) 3.7.18-1 (BNI 2018i).

**Requirement Basis:**

The WTP Contractor is responsible for physically packaging, labeling and marking RSW during waste generation activities to control and minimize contamination, to protect human health and the environment, and to ideally package waste once in accordance with the TOC requirements which incorporate the receiving TSD facility's waste acceptance criteria and 49 CFR DOT, WAC 173-303, DOE O 460.1D (DOE 2016a), and DOE O 461.1C (DOE 2016b) requirements. Packaging materials are typically provided by the TOC (see requirement 3.3.2.1). Close coordination with the TOC is necessary to avoid re-packaging and re-handling of waste prior to transportation. Due to combustible load limits, a LAW Facility Technical Safety Requirements Limiting Condition for Operation (LCO 3.7.18-1) requires spent carbon bed media to be stored in DOT 7A Type A steel drums.

**Configuration Management Document(s):**

Requirement Source(s):

- 49 CFR, Title 49 – *Transportation*
- DOE O 460.1D, *Hazardous Materials Packaging and Transportation Safety* (DOE 2016a)
- DOE/RL-2001-36, *Hanford Sitewide Transportation Safety Document* (DOE 2017)
- TFC-OPS-WM-C-19, *Onsite Hazardous Material Shipments* (WRPS 2018a)
- TFC-OPS-WM-C-20, *Offsite Hazardous Material Shipments* (WRPS 2018b)
- 24590-LAW-TSR-NS-18-0001, *Low-Activity Waste Facility Technical Safety Requirements* (BNI 2018i)

Implementation:

- 24590-WTP-GPP-RACW-WM-0001, Commissioning Radioactive Waste Management Section 6.2 and 7.2 (BNI 2018a, preliminary status)
- 24590-WTP-GPP-RACW-WM-1001, *Generation, Segregation and Accumulation of Radioactive and Mixed Waste* (under development)

- 24590-WTP-GPP-RARP-RP-3014, *Radioactive Material Packaging and Labeling* (WTCC 2019)

3.3.1.4 When a LAW melter has either failed or expended its operating life, the WTP Contractor shall:

1. Seal-weld or weld closure plates on all penetrations on the existing enclosure before it is moved out of the LAW Facility, unless PRC requests specific ports/flanges to allow inspection or void filling at the Integrated Disposal Facility (IDF).
2. Conduct radiological survey(s) and control any surface contamination as required per TOC packaging instructions before it is moved out of the LAW Facility.
3. Move the LAW melter to the pickup location/interface point at the end of the melter rails on the melter assembly pad outside of the LAW Facility.

**Requirement Basis:**

The WTP Contractor has the responsibility for preparing the melter for transportation in accordance with TOC instructions. Final TOC melter preparation instructions are not available at this time and are dependent on any Special Packaging Authorization(s) or Package-Specific Safety Documents (PSSDs) approved by DOE (see requirement 3.3.2.2 and 3.3.2.3). Preparation includes sealing all penetrations; and could include an external strong-tight cover (e.g., flexible wrap), or an applied fixative, as required to prevent the release of radioactive or hazardous contaminants during storage, transportation, and disposal.

ICD 03 Open Item 0008 was created to determine the specific location (physical interface) for loading the spent/failed LAW melters onto TOC-provided transporters. This open item was closed by WTCC Plant Engineering on September 27, 2018 (BNI 2018g) by concurring with the recommendation made by TOC in RPP-RPT-58204, (WRPS 2014). Specifically, the interface point was determined to be at the end of the melter rails on the melter assembly pad outside of the LAW Facility. See 24590-LAW-M7-LMH-00001001, *LAW Vitrification System LMH Mechanical Handling Diagram – Melter Handling System* (BNI 2018h) for a mechanical handling diagram of the LAW melter handling system showing the melter assembly pad and rails.

**Configuration Management Document(s):**

Requirement Source(s):

- NOC 1055, *WDOH Radioactive Air Emissions NOC Approval for the WTP LV-S1 Stack for the C3V Exhaust System of the Low Activity Waste Facility (LAW) Construction* (Emission Unit 549), Condition 2 (WDOH 2017)
- WA7890008967, *Hanford Facility RCRA Permit Dangerous Waste Portion, Waste Treatment & Immobilization Plant Operating Unit Group 10 (OUG-10)*, Sections 4E.2.4, 4E.2.7, and 4E.3.1
- CCN 308341, *24590-WTP-ATS-MGT-16-0033* (BNI 2018g)

Implementation:

- The implementing mechanism(s) and traceability will be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Mission Integration Requirement Area Manager (RAM) as identified in 24590-

WTP-LIST-RARM-RM-0001, *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019b).

- 3.3.1.5 The WTP Contractor shall notify the Tank Operations Contractor (TOC) when waste staging has reached 50% of the regulatory clock for the specific waste type, and the associated WTP waste staging location.

**Requirement Basis:**

There are various regulatory clocks for different waste types, and it is necessary that TOC be notified in sufficient time to allow TOC work scope to occur without exceeding the regulatory time limit(s).

**Configuration Management Document(s):**

Requirement Source(s):

- WAC 173-303, Dangerous Waste Regulations
- 40 CFR 268, *Title 40 – Protection of the Environment – Land Disposal Restrictions*
- DOE O 435.1, Radioactive Waste Management (DOE 2001)

Implementation:

- The implementing mechanism(s) and traceability will be established within the WTP Requirements Management Program. The current implementation status can be obtained from the Mission Integration Requirement Area Manager (RAM) as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2019b).

- 3.3.1.6 The WTP Contractor shall provide the necessary resources to load WTP-generated RSW onto TOC transport equipment.

**Requirement Basis:**

RSW will be stored and packaged on the WTP site until it is authorized for transport by the TOC. Transport equipment will be provided by TOC, however, WTP is responsible for providing necessary resources to load the waste onto the TOC transport equipment.

**Configuration Management Document(s):**

Requirement Source(s):

- 24590-WTP-ICD-MG-01-003, ICD 03 – *Interface Control Document for Radioactive Solid Waste*, Rev. 0, section 2, table 1, item 6 (BNI 2002)

Implementation:

- 24590-WTP-GPP-RACW-WM-0001, Commissioning Radioactive Waste Management Section 6.6.4.b and 7.6 (BNI 2018a, preliminary status)
- 24590-WTP-GPP-RAMN-WC-0001, *Work Control Process* (BNI 2019c)

### 3.3.2 TOC Programmatic Requirements

- 3.3.2.1 The Tank Operating Contractor (TOC) shall provide the WTP Contractor materials/supplies necessary to support compliant management of RSW generated by WTP. These



material/supplies shall conform to applicable WAC 173-303, 49 CFR (Parts 100 through 185), DOE M 435-1.1(DOE 2011b), DOE O 460.1D (DOE 2016a), and DOE O 461.1C (DOE 2016b) requirements. Examples of materials necessary include:

1. U. S. Department of Transportation (DOT) approved containers, various types and sizes (including, but not limited to DOT 7A Type A steel drums). The drums are to be of previously unused, new condition.
2. Container liners (various types and sizes).
3. RCRA-compliant spill pallets.
4. Container label and marking supplies as necessary to conform with solid and dangerous waste accumulation and DOT shipping requirements (e.g., hazardous waste labels, major risk labels, DOT hazard class labels, etc.).
5. Absorbents and/or void space fillers necessary to conform with packaging and shipping requirements.

**Requirement Basis:**

The TOC is responsible for ensuring the appropriate packaging, marking and labeling materials for radioactive solid waste are used prior to transporting the waste to a TSD facility.

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC27-08RV14800 as amended, *Tank Operations Contract* (DOE 2008)
- 49 CFR, Title 49 – Transportation
- WAC 173-303, Dangerous Waste Regulations

Implementation:

- TFC-OPS-WM-C-19, Onsite Hazardous Material Shipments (WRPS 2018a)
- TFC-OPS-WM-C-20, Offsite Hazardous Material Shipments (WRPS 2018b)
- Memorandum of Agreement TOC-MOA-BNI-006 Task Order 2017-01, *Solid Waste Handling Services* (BNI 2018c)

- 3.3.2.2 The Tank Operating Contractor (TOC) shall provide the WTP Contractor written packaging instructions/criteria to prepare WTP RSW for transportation. This includes packaging instructions/criteria for LAW spent/failed melters (and any other non-standard transportation packages) as determined necessary by the Hanford Sitewide Transportation Safety Document (DOE/RL-2001-36).

**Requirement Basis:**

The TOC is the Shipper for all WTP RSW. Close coordination between the WTP (generating the waste) and the TOC (shipping the waste) is essential for ensuring compliant management, transportation, treatment, and/or disposal.

Note that transport of LAW spent/failed melters from WTP to the IDF cannot be accomplished as a DOT compliant shipment due to the size, weight, and configuration of the melter. The Hanford Sitewide Transportation Safety Document (DOE 2017) provides for the transportation of risk-based packages that demonstrates “equivalent safety”. Any packaging instructions derived from Special Packaging Authorizations (SPAs) or Package-Specific

Safety Documents (PSSDs) that are developed by TOC and approved by DOE per the Transportation Safety Document will need to be communicated to, and coordinated with, WTP for implementation.

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC27-08RV14800 as amended, Tank Operations Contract (DOE 2008)
- 49 CFR, Title 49 – Transportation
- DOE/RL-2001-36, Hanford Sitewide Transportation Safety Document (DOE 2017)

Implementation:

- Implementing mechanisms for this requirement shall be established by the TOC.

3.3.2.3 The Tank Operating Contractor (TOC) shall provide shipping-related services for the transportation of WTP RSW from the WTP site to applicable Treatment, Storage, and Disposal (TSD) facility. These services include, but are not limited to:

1. Assisting the WTP Contractor in the characterization of the waste, waste designations, and pre-determinations, as necessary.
2. Determining the appropriate transportation system.
3. Determining the waste treatment or disposal path based on the waste characteristics and the waste acceptance criteria of potential Treatment, Storage, and Disposal (TSD) facility(s).
4. Developing and submitting a Waste Profile to the applicable Treatment, Storage, and Disposal (TSD) facility.
5. Obtaining necessary DOE approval(s) for any non-standard transportation packages, Package-Specific Safety Documents (PSSDs) and/or Special Packaging Authorization(s).
6. Preparation of marking and labeling instructions and RCRA and DOT-required shipment documentation (e.g., Uniform Hazardous Waste Manifests, Land Disposal Restriction notifications, and Hazardous Material Shipment records).
7. Pre-shipment verification services.
8. Coordination of Hanford road closures.
9. Shipping services within the regulatory clock time limits for the specific waste type by DOT-trained and certified shippers and drivers using DOT-compliant transportation systems, as required. This includes shipments between onsite contractors and shipments to offsite locations.

**Requirement Basis:**

The TOC is the Shipper for all WTP RSW. Close coordination between the WTP (generating the waste) and the TOC (shipping the waste) is essential for ensuring compliant management, transportation, treatment, and/or disposal. Note that the *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2019d) depicts potential pick-up locations of RSW for the bulk of RSW. However, for large failed process equipment requiring special handling features, exchange methods, and/or transport systems, other transfer areas may be identified by WTP Waste Management personnel as the project becomes operational.

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC27-08RV14800 as amended, Tank Operations Contract (DOE 2008)
- 49 CFR, Title 49 – Transportation
- DOE/RL-2001-36, Hanford Sitewide Transportation Safety Document (DOE 2017)

Implementation:

- TFC-OPS-WM-C-19, Onsite Hazardous Material Shipments (WRPS 2018a)
- TFC-OPS-WM-C-20, Offsite Hazardous Material Shipments (WRPS 2018b)
- Memorandum of Agreement TOC-MOA-BNI-006 Task Order 2017-01, Solid Waste Handling Services (BNI 2018c)

- 3.3.2.4 The TOC shall provide transportation vehicles/systems for the transport of all WTP RSW, including LAW spent/failed melters, from the WTP jobsite to the applicable Treatment, Storage, and Disposal (TSD) facility.

**Requirement Basis:**

The TOC is the Shipper for all WTP RSW per the Tank Operations Contract (DOE 2008). As such, TOC has the responsibility for providing shipping-related transportation systems. Current TOC strategy for LAW melter transport is to subcontract the loading, transport, and unloading of the melters as documented in RPP-RPT-58204 (WRPS 2014).

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC27-08RV14800 as amended, Tank Operations Contract (DOE 2008)

Implementation:

- Implementing mechanisms for this requirement shall be established by the TOC.

- 3.3.2.5 The TOC shall follow the WTP jobsite access process for general access to the WTP jobsite. Access into any central accumulation or storage areas for RSW shall be specifically coordinated with, and authorized by, WTP Waste Management staff prior to entry.

**Requirement Basis:**

The WTP site access process (BNI 2019f) is followed to obtain access to the WTP jobsite. Access into RSW central accumulation or storage areas on the WTP site will be controlled by WTP, and access into these areas must be specifically authorized by WTP waste management staff prior to entry.

**Configuration Management Document(s):**

Requirement Source(s):

- 24590-WTP-GPP-RAGS-GS-0001, *WTP Jobsite Access and Conduct* (BNI 2019f)
- 24590-WTP-GPP-RASS-SB-0001, *WTP Security Badge and Access Requirements* (BNI 2019k)

Implementation:

- Implementing mechanisms for this requirement shall be established by the TOC.

### 3.3.3 (PRC) Programmatic Requirements

- 3.3.3.1 The PRC shall establish and/or maintain Waste Acceptance Criteria document(s) to allow receipt of radioactive solid waste from WTP. Coordinate any changes to the Waste Acceptance Criteria document(s) with the TOC and the WTP Contractor.

**Requirement Basis:**

DOE O 435.1, Radioactive Waste Management (DOE 2001), requires each treatment, storage, and/or disposal facility to maintain waste acceptance criteria. Revisions/modifications to these criteria needs to be coordinated with, and reviewed by, the TOC and WTP Contractor for impacts.

**Configuration Management Document(s):**

Requirement Source(s):

- DOE M 435.1-1, Radioactive Waste Management Manual (DOE 2011b)

Implementation:

- HNF-EP-0063, *Hanford Site Solid Waste Acceptance Criteria* (CHPRC 2017a)
- IDF-00002, Waste Acceptance Criteria for the Integrated Disposal Facility (under development)

- 3.3.3.2 The PRC shall prepare modifications to existing permits, and/or develop new permits, as required to receive WTP-generated waste for disposal.

**Requirement Basis:**

DOE Contract No. DE-AC06-08RL14788 (DOE 2004) assigns the PRC responsibility for modifying existing and/or developing new permits required for waste disposal operations.

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC06-08RL14788, Plateau Remediation Contract, Section C.2.3.12 (DOE 2004)

Implementation:

- Implementing mechanisms for this requirement shall be established by the PRC.

- 3.3.3.3 The PRC shall provide the WTP Contractor a written data call requesting updates to the solid waste forecast that:

1. Provides guidance on the format and content expected, and
2. Provides a requested timeframe for the WTP forecast submittal, allowing a minimum of 45 days to provide the requested input.

**Requirement Basis:**

PRC will use annual waste forecast(s) from generators to obtain waste planning information regarding estimated quantities of RSW to be managed by PRC. Written data calls from PRC will provide guidance to generators on the format, content, and timing of these annual forecasts.

**Configuration Management Document(s):**

Requirement Source(s):

- DOE M 435.1-1, Radioactive Waste Management Manual (DOE 2011b)
- HNF-EP-0063, Hanford Site Solid Waste Acceptance Criteria, Section 1.4.4 (CHPRC 2017a)
- IDF-00002, Waste Acceptance Criteria for the Integrated Disposal Facility (under development)

Implementation:

- Implementing mechanisms for this requirement shall be established by the PRC.

- 3.3.3.4 The PRC shall provide the resources necessary to unload WTP-generated RSW shipments that are delivered to PRC by the TOC.

**Requirement Basis:**

RSW will be stored and packaged on the WTP site until it is authorized for transport by the TOC. PRC is responsible for providing resources to unload the waste from the TOC transport equipment for loads destined for Hanford TSD facilities.

**Configuration Management Document(s):**

Requirement Source(s):

- Contract No. DE-AC06-08RL14788, Plateau Remediation Contract, (DOE 2004)
- 24590-WTP-ICD-MG-01-003, ICD 03 – Interface Control Document for Radioactive Solid Waste, Rev. 4, section 2.1, table 1, item 6 (configure)

Implementation:

- Implementing mechanisms for this requirement shall be established by the PRC.

- 3.3.3.5 The PRC shall prepare spent/failed LAW melter for disposal at the IDF upon delivery of the used melter by the TOC. Preparation for disposal includes the following, as necessary:

1. Void-filling used LAW melter to meet DOE LLW requirements.
2. Treating used LAW melter to meet RCRA Land Disposal Restrictions (LDRs).

**Requirement Basis:**

One System Decision Document 0016 (DOE 2018) established that used LAW melter would be prepared for disposal at the IDF after delivery at the IDF by the TOC. Preparation of the used melter for disposal at the IDF would include void-filled and treatment via an immobilization technology, as necessary, to meet IDF disposal requirements.

**Configuration Management Document(s):**

Requirement Source(s):

- 18-WSC-0048, *One System Decision Document 0016, IDF Pad to Prepare LAW Melter for Disposal* Provided by PRC (DOE 2018)

Implementation:

- Implementing mechanisms for this requirement shall be established by the PRC.

3.3.3.6 The PRC shall notify WTP, TOC, and ORP at least 30 calendar days in advance of scheduled interruptions to RSW disposal services affecting this interface.

**Requirement Basis:**

Interruption of RSW disposal receipt activities by PRC will impact other Hanford contractors that participate in the generation, transportation, and shipping of the waste. Prompt communication of interruptions is needed to minimize the impact to other contractors.

**Configuration Management Document(s):**

Requirement Source(s):

- 24590-WTP-ICD-MG-01-003, ICD 03 – Interface Control Document for Radioactive Solid Waste, Rev. 0, section 2, table 1, item 7 (BNI 2002).

Implementation:

- Implementing mechanisms for this requirement shall be established by the PRC.

## 4 Requisite Interface Items

Some interfaces may have additional actions to be performed to establish a complete interface. Any of these actions that do not fall into the above requirements categories are listed as requisite interface items. These items are typically single actions to be performed prior to commissioning. A requisite interface item is considered completed when objective evidence is provided to verify the action was performed. The requisite interface items are excluded from the WTP Requirements Management Program and associated procedures. The One System Requirements Area Manager may use the requirements management tool to track requisite interface items.

### 4.1 WTP Contractor Requisite Interface Items

Not Applicable

### 4.2 TOC Requisite Interface Items

Not Applicable

### 4.3 PRC Requisite Interface Items

Not Applicable

## 5 References

- 10 CFR 830. *Energy - Nuclear Safety Management*, Code of Federal Regulations, as amended.
- 40 CFR. *Title 40 – Protection of the Environment*, as amended.
- 40 CFR 268, *Title 40 – Protection of the Environment – Land Disposal Restrictions*, Code of Federal Regulations, as amended.
- 49 CFR. *Title 49 – Transportation*, Code of Federal Regulations, as amended.
- 49 CFR 173. *Shippers – General Requirements for Shipments and Packaging’s*, Code of Federal Regulations, as amended.
- BNI. 2002. *ICD 03 – Interface Control Document for Radioactive Solid Waste*, 24590-WTP-ICD-MG-01-003, Rev. 0, 14 March 2002. Bechtel National, Inc., Richland, Washington.
- BNI. 2015a. 24590-WTP-RPT-ENG-13-030, Rev. 1 (RPP-54688, Rev. 1), *One System Consolidated Waste Management Facility Site Evaluation*, 01 July 2015. Bechtel National, Inc. and Washington River Protection Solutions, Richland, Washington.
- BNI. 2015b. CCN 259609, *One System Decision Document 0003, Consolidated Solid Waste Management Approach*, 06 August 2015. Bechtel National, Inc., Richland, Washington.
- BNI. 2018a. 24590-WTP-GPP-RACW-WM-0001, Rev. P0B, *Commissioning Radioactive Waste Management*, 09 September 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018b. 24590-WTP-GPP-RACW-WM-1004, Rev. 5, *Waste Designation*, 08 October 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018c. TOC-MOA-BNI-0006 Task Order 2017-001 Rev. 6 (sensitive), *Solid Waste Handling Services*, 01 October 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018d. 24590-WTP-PD-RACW-WM-00001, Rev. 2, *Commissioning Waste Management Program Description*, 09 July 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018e. 24590-WTP-PL-RACW-WM-0008, Rev. 2, *Radioactive Waste Management Basis (RWMB)*, 06 August 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018f. CCN 268897, *Building 32 and Pad 90A/B Requirements – To Gather Input from NSE, Engineering, Operations, Permitting, and One System to Decide if Building 32 & Pad 90A/B Should Stay Part of the Project Scope*, 23 May 2018. Bechtel National, Inc. Richland Washington.
- BNI. 2018g. CCN 308341, 24590-WTP-ATS-MGT-16-0033, 27 September 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2018h. 24590-LAW-M7-LMH-00001001, Rev. 3, *LAW Vitrification System LMH Mechanical Handling Diagram – Melter Handling System*, 15 March 2018. Bechtel National, Inc., Richland, Washington.

- BNI. 2018i. 24590-LAW-TSR-NS-18-0001, Rev. 0a, *Low-Activity Waste Facility Technical Safety Requirements*, 22 May 2018. Bechtel National, Inc., Richland, Washington.
- BNI. 2019a. CCN 310749, *Fiscal Year 2019 Life Cycle Solid Waste Forecast Data for the Hanford Tank Waste Treatment and Immobilization Plant*, 03 January 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019b. 24590-WTP-LIST-RARM-RM-0001, Rev. 68 as amended, *Designation of Requirement Area Managers and Subject Matter Experts*, 13 March 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019c. 24590-WTP-GPP-RAMN-WC-0001, Rev. 1, *Work Control Process*, 28 February 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019d. 24590-WTP-B2-C12T-00001, Rev. 5, *Interface Control Drawing*, 07 July 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019e. 24590-LAW-DSA-NS-18-0001, Rev 00C, *Documented Safety Analysis for the Low-Activity Waste Facility*, 24 April 2019. Bechtel National, Inc., Richland, WA.
- BNI. 2019f. 24590-WTP-GPP-RAGS-GS-0001, Rev.5, 08 March 2019. *WTP Jobsite Access and Conduct*, Bechtel National, Inc., Richland, Washington.
- BNI. 2019g. 24590-WTP-PL-PENG-14-0006, Rev 3, *Secondary Wastes Compliance Plan*, 22 February 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019h. CCN 310467, *2019 Solid Waste Information Tracking System (SWITS) - WTP Waste Forecast Data*, 08 January 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019i. 24590-BOF-P1-50-00001, Rev 12, *RPP-WTP Plot Plan*, 31 May 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019j. 24590-BOF-P1-50-00011, Rev 3, *Balance of Facilities General Arrangement WTP Central Waste Storage Areas 90A/90B at Elevation 681'-9"*, 04 June 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019k. 24590-WTP-GPP-RASS-SB-0001, *WTP Security Badge and Access Requirements*. Bechtel National, Inc., Richland, Washington.
- BNI. 2019l. 24590-LAW-ES-NS-17-004, Rev 6, *Process Hazards Analysis in Support of the LAW DSA*, 30 July 2019. Bechtel National, Inc., Richland, Washington.
- BNI. 2019m 24590-WTP-DB-ENG-01-001, Rev 10, *Basis of Design*, Bechtel National, Inc., Richland, Washington.
- CH2. 2002. RPP-8402, Rev 0, *Waste Acceptance Criteria for the Immobilized Low-Activity Waste Disposal Facility*. CH2M HILL Hanford Group, Inc., Richland, WA.
- CHPRC. 2017a. HNF-EP-0063, Rev. 17, *Hanford Site Solid Waste Acceptance Criteria*, 07 December 2017. CH2M HILL Plateau Remediation Company, Richland, Washington.



DOE. 2001. DOE O 435.1 Chg 1, DOE Order – *Radioactive Waste Management Manual*, US Department of Energy, Washington DC.

DOE. 2002. DOE-ORP Letter 02-REQ-029, *Transmittal of ‘Waste Acceptance Criteria Immobilized Low Activity Waste (ILAW) Disposal Facility’, RPP-8402, Rev. 0, for Approval*. US Department of Energy, Richland, WA.

DOE. 2004. *Plateau Remediation Contract*, CH2M Hill Plateau Remediation Company, LLC. Contract No. DE-AC06-08RL14788 as amended, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE. 2008. *Tank Operations Contract*, Washington River Protection Solutions LLC. Contract DE-AC27-08RV14800 as amended, U.S. Department of Energy, Office of River Protection, Richland, Washington.

DOE. 2010. DOE Order 460.1C, *Packaging and Transportation Safety*, US Department of Energy, Washington DC.

DOE. 2011a. *Hanford Sitewide Transportation Safety Document*, DOE/RL-2001-36, US Department of Energy, Richland Operations Office, Richland, Washington.

DOE. 2011b. DOE M 435.1-1 Chg 2, DOE Order – *Radioactive Waste Management Manual*, US Department of Energy, Washington DC.

DOE. 2013. 1302391/13-ECD-0066, Waste Determination and Citation List for Hanford Secondary Wastes, US Department of Energy, Richland Operations Office, Richland, Washington.

DOE. 2016a. DOE Order 460.1D, Hazardous Material Packaging and Transportation Safety, US Department of Energy, Washington DC.

DOE. 2016b. DOE Order 461.1C, Packaging and Transportation for Offsite Shipment of Materials of National Security Interest, US Department of Energy, Washington DC.

DOE. 2017. Hanford Sitewide Transportation Safety Document, DOE/RL-2001-36, Revision 2, US Department of Energy, Richland Operations Office, Richland, Washington.

DOE. 2018. CCN 307792, *One System Decision Document 0016, IDF Pad to Prepare LAW Melter for Disposal Provided by PRC*, 18-WSC-0048, 19 June 2018. U.S. Department of Energy, Office of River Protection, Richland, Washington.

WA7890008967. *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion, Waste Treatment & Immobilization Plant Operating Unit Group 10 (OUG-10)*, Rev. 8C as amended. Washington State Department of Ecology.

WAC 173-303, *Dangerous Waste Regulations*, 18 December 2014, or as amended.

WDOH. 2017, NOC 1055, *Approval of Notice of Construction (NOC) 1055 for the Hanford Tank Waste Treatment and Immobilization Plant WTP*, 24 April 2017. State of Washington Department of Health, Richland, Washington.

WRPS. 2014, RPP-RPT-58204, Revision 0, *Spent/Failed Low-Activity Melter Transport System Evaluation Report*, 28 October 2014, Washington River Protection Solutions, Richland, Washington.

WRPS. 2017, RPP-RPT-60058, Rev 0, *Low-Activity Waste Melter Replacement and Disposition Logistics Alternatives Analysis*, 07 August 2017. Washington River Protection Solutions, Richland, Washington.

WRPS. 2018a. TFC-OPS-WM-C-19, Rev. A-9, *Onsite Hazardous Material Shipments*, 29 October 2018. Washington River Protection Solutions, Richland, Washington.

WRPS. 2018b. TFC-OPS-WM-C-20, Rev. A-7, *Offsite Hazardous Material Shipments*, 30 July 2018. Washington River Protection Solutions, Richland, Washington.

WTCC. 2019. 24590-WTP-GPP-RARP-RP-3014, Rev 0, *Radioactive Material Packaging and Labeling*, 15 August 2018. Bechtel National, Inc., Richland, Washington

## Appendix A - ICD 03 Issues and Open Items

NOTE: This appendix lists open ICD issues, ICD issues that have been closed since the last revision, and new ICD open items. New open items are added to each ICD revision with a tracking number or schedule activity to track their completion outside the ICD. Open items are removed from the ICD in the next revision following their introduction.

Issue/Action/ Open Item No.	Description	Tracking No	Responsible Org.	Responsible Actionee	Originator	Status/ Due Date	Support Information / Basis for Closure	Comments
I3-46	Investigate alternatives for storing and shipping RH MLLW and RH-TRU waste so as to allow return and re-use of the shielded overpacks used to transport the waste.	24590-WTP-GCA-MGT-18-01090	WTP	Chris Musick	N/A	Open: Action Due Date 9-15-2020	Status - During the ICD 03 revision process, it was originally thought that the ICD issue tied to this ATS item may be closed. However, this issue has been tabled for this revision as it is specific to HLW and PTF. Refer to CCN 277569 which documents the recommendation to table the issue. This extension request is a result of Plant Engineering HLW and PTF funding/budget restrictions in FY16 and FY17. We do not have hours to support this HLW/PTF activity.	This Open Issue is not pertinent to DFLAW - it will be addressed in ICD 03 when PT Facility and HLW are re-baselined.  CR 24590-WTP-GCA-MGT-18-01090 has been created to replace 24590-WTP-ATS-QAIS-07-1103. The existing ATS action has been closed but remains an action to be addressed for ICD 03.
I3-52	Design and procure sufficient remote handled containers and overpacks for use through the end of hot commissioning. Provide the design and quantity data to the TOC (ICD 03 TOC Interface Owner) for use in determining type and quantity of containers that will be needed during the WTP Operations phase.	24590-WTP-ATS-MGT-14-0003	WTP	Marshall Miller	N/A	Open; Target Date: 12/31/2021	See CCN 260217, Meeting Minutes (Item 2) from limited ICD 03 meeting held on 01/08/2014.	Discussions with Marshall Miller (PENG) and Chris Musick (WTP HLW): This Open Issue supports HLW - there is currently not a scope in the internal forecast for executing this activity. Will not execute this scope until 2021.
I3-53	It is expected that RSW transported as Hanford sitewide shipments comply with either DOT regulations or equivalent requirements developed under a DOE Order 460.1C-compliant <i>Hanford Sitewide Transportation Safety Program</i> (DOE/RL-2001-0036). The WTP Contractor's Waste Management Program should be in accordance with the applicable elements of DOE Order 460.1C, Packaging and Transportation Safety for scope associated with packaging. The WTP contractor will incorporate the applicable portions of the order for packaging into its baseline, for incorporation into the Waste Management Program.	24590-WTP-ATS-MGT-16-0038	WTP	Dan Saueressig, Bob Haggard	N/A	Closed 6/13/2019	07/02/2018: A formal request was submitted to DOE to add DOE order 460.1D to the WTP contract. DOE requested a detailed proposal for what it would cost to implement the requirements of 460.1D at the WTP. The detailed cost proposal has been submitted to DOE for review and we are waiting for a response.  09/24/2018: DOE has the proposal and are challenging the costs. DOE believes that implementation of 49 CFR (DOT) requirements is already within the scope of the WTP contract.	Addition of DOE Order 460.1D (or 460.1C) to the WTP contract continues in DOE review.  DOE Order 460.1D (or 460.1C) will not be added to the WTP contract, therefore, this open issue has been closed. ORP concurrence for closure of Open Issue I3-53 was provided by email (Ronald Cone to Robert Henckel and Thomas Fletcher; 06/13/2019) - CCN 309417.
<b>Refer to the ICD Action Item List for open items created in previous revisions of this ICD.</b>								

## Appendix B - HLW/PT Radioactive Solid Waste

### Interface Definition

Radioactive solid waste (RSW) for High Level waste operations includes transuranic waste (TRU), and transuranic mixed waste (TRUM) derived from the treatment of US Department of Energy (DOE) Hanford tank waste. RSW is expected to be generated as a result of providing immobilized high-level waste (IHLW) treatment services, which includes spent or failed melters.

**Table Requirements for the Radioactive Solid Waste Interface**

Interface Functional Requirement	The Waste Treatment Plant Contractor Shall...	The Tank Operations Contractor Shall...	Plateau Remediation Contractor Shall ...
The high-level waste (HLW) melters will need to be considered in a future WIR evaluation when more information is available.	“If Possible” Provide the TOC with assistance and information necessary to Develop a Waste Incidental to Reprocessing (WIR) Citation for RSW that has been in contact with Hanford tank waste.	Develop a WIR evaluation for the HLW melters for DOE to submit to obtain a WIR Determination.	No Action.

### Physical Information

For large failed process equipment requiring special handling features, exchange methods, and/or transport systems, other transfer areas may be identified as the project becomes operational. The physical interface point for the melter transport by the TOC will be at HLW (Building 30) vitrification facilities.

The TOC will provide a transport system capable of transporting the HLW melters to the treatment, storage, or disposal location from both of the physical interface points for melter transport noted above.

### Melter Transport

The HLW melter with melter overpack characteristics are listed in the Table below for HLW melter characteristics for transport are expected to be impacted by melter disposal preparation (thus differ from those presented in the Table).

### Melter Characteristics

The HLW melter overpack is currently designed as a carbon steel container to be discarded with the melter. The overpack will provide the necessary shielding, contamination control, and structural rigidity to allow direct burial of spent or failed HLW melters as MLLW by a future WIR evaluation. The final melter preparation needed for disposal has not been determined and is being tracked by ATS 24590-WTP-ATS-MGT-16-0033 (Item 0007). The HLW Melter (With Overpack) Characteristics table below summarizes the current melter design envelope: HLW melter data incorporates the overpack as described above.

**HLW Melter (With Overpack) Characteristics**

<b>Melter Type</b>	<b>Height</b>	<b>Length</b>	<b>Width</b>	<b>Melter Weight (Empty)</b>	<b>Melter Weight (Full of glass)</b>	<b>Overpack Weight (Empty)</b>	<b>Overpack Weight (Loaded)</b>
HLW <sup>1</sup>	172-in	208-in	208-in	200,000 lbs.	240,000 lbs.	500,000 lbs.	740,000 lbs.

<sup>1</sup> The HLW melter dimensions and weights are from the Engineering Specification for System HMH Shield Doors, Containment Doors, and HLW Overpack (BNI 2010c) and include the melter overpack, including the overpack closure door.

Thirty-six melters will require disposal over the mission of the WTP, assuming a 40-year plant life: 18 HLW melters and 18 LAW melters, including a contingency of two HLW melters. The HLW melter radiological and physical characteristics (for example, amount of radionuclides and hazardous materials by chemical form, dose map, melter components and compositions of components, physical form of waste remaining in melter, composition of waste form remaining in melter, estimate of cooling profiles after melter failure, amount and type of any filler material placed in melters, and such) will be provided by the WTP Contractor to the TOC and the PRC to support the development of transportation requirements, treatment methodology, disposal permits, and disposal site performance assessments. The WTP has an opportunity to work with ORP to obtain HLW melter disposal strategies developed for West Valley High-Level Waste (WVHLW) and the Savana River Defense Waste Processing Facility (DWPF) to aid in the development of the HLW melter treatment and disposal process.

**Melter Transport**

The HLW melter with melter overpack characteristics are listed in the Table above.

**Radioactive Solid Waste Management Process**

HLW melter wastes will need to be considered in a future WIR evaluation when more information is available.

**Interface Logic**

The PRC operates waste treatment, storage, and disposal facilities for the various types of RSW. The Solid Waste Acceptance Process ensures that waste sent to waste management units complies with all environmental, safety, and operational requirements. A TOC-developed Waste Incidental to Reprocessing (WIR) evaluation is necessary for the HLW melter wastes that will need to be considered in a future WIR evaluation when more information is available.

**NOTE: Based on DOE M 435.1 a determination will be made for all WTP TRU waste for storage at Central Waste Complex (CWC) and high-level waste for disposal at an HLW repository.**

**Permit Modification**

WTP RSW will be transferred to existing storage (TRU waste) or disposal sites (LLW, MLLW). The current DOE permits (TOC and PRC operating facilities) will be modified to support the treatment, storage, and disposal of WTP RSW. The IDF is the planned final disposal location for all low-level RSW

generated by WTP. This includes routine operational and maintenance waste (e.g., failed equipment, contaminated protective gear, spent filters and ion exchange resins).

### Acceptance Criteria

A waste determination is also needed for the HLW melter disposal as the project design progresses towards IHLW processing.

### Melter Interface Configuration Management Items

<b>WTP Documents</b>	<b>Interfacing Organization Documents</b>
24590-WTP-PL-PENG-14-0006, Rev 3, Secondary Wastes Compliance Plan (BNI 2019g)	HSSWAC, HNF-EP-0063 (CHPRC 2017a) System Specification for the Integrated Disposal Facility, RPP-15833 (CH2 2003)
<b>WTP Drawings</b>	<b>Interfacing Organization Drawings</b>
24590-HLW-M0-HMH-00004001, Rev 1, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling (BNI 2004a) 24590-HLW-M0-HMH-00004002, Rev 1, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling Details, (BNI 2004b) 24590-HLW-M0-HMH-00004003 Rev 0, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling Details, (BNI 2004c) 24590-HLW-M0D-HMP-00001, Rev 2, Data Sheet, High Level Waste Melter 1 (BNI 2009a) 24590-HLW-M0D-HMP-00002, Rev 2, Data Sheet, High Level Waste Melter 2 (BNI 2009b) 24590-WTP-B2-C12T-00001, Rev 5, Interface Control Drawing (BNI 2019d)	

### Overpack Re-Use

RSW overpacks used solely for shielding purposes (i.e., not needed to meet disposal requirements) will be specifically designated for re-use. The WTP Contractor will provide sufficient availability to support commissioning activities. After the overpacks are unloaded, the TOC will return the decontaminated overpacks to the WTP Contractor.

### References

BNI. 2004a. 24590-HLW-M0-HMH-00004001, Rev 1, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling, 28 May 2004. Bechtel National, Inc., Richland, Washington.

BNI. 2004b. 24590-HLW-M0-HMH-00004002, Rev 1, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling Details, 28 May 2004. Bechtel National, Inc., Richland, Washington.

BNI. 2004c. 24590-HLW-M0-HMH-00004003, Rev 0, HLW Vitrification System HMH Design Proposal Drawing HLW Overpack Melter Handling Details, 28 May 2004. Bechtel National, Inc., Richland, Washington.

BNI. 2009a. 24590-HLW-M0D-HMP-P0001, Rev 2, *High Level Waste Melter 1 Data Sheet*, 9 March, 2009. Bechtel National, Inc., Richland, Washington.

BNI. 2009b. 24590-HLW-M0D-HMP-P0002, Rev 2, *High Level Waste Melter 2 Data Sheet*, 9 March, 2009. Bechtel National, Inc., Richland, Washington.

BNI. 2010c. 24590-HLW-3PS-ADDH-T0001, *Engineering Specification for System HMH Shield Doors, Containment Doors, and HLW Overpack*. Dated 30 March 2010. Bechtel National, Inc., Richland, Washington.

CH2. 2004. *System Specification for the Integrated Disposal Facility*, RPP-15833, Rev 0B, April 2004, CH2M Hill Hanford Group Inc., Richland, Washington.