



ICD 06 – Interface Control Document for Radioactive, Dangerous Liquid Effluents

Document title:

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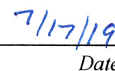
Contract: DE-AC27-01RV14136 **Contract deliverable:** C.9.1

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

Approved by: Taylor, Walt


Signature


Date

BNI Acting Area Project Manager

Issue Status: Approved


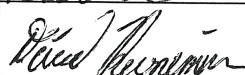
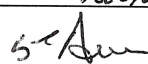
River Protection Project
Waste Treatment Plant
2435 Stevens Center Place
Richland, WA 99354
United States of America
Tel: 509 371 2000

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.

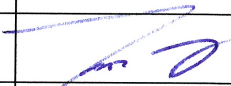
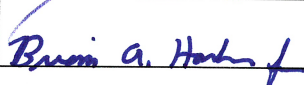
Interface Signature Page

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 06 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 06 Lead	Guy Robertshaw		6/27/19
WTP Contractor	ICD 06 Interface Owner	Dave Reinemann		7-01-19
TOC	ICD 06 Interface Owner	Stuart Arm		6/27/19
MSC	ICD 06 Interface Owner	N/A		
PRC	ICD 06 Interface Owner	N/A		

DOE Approval

Position	Name	Signature	Date
ORP Assistant Manager for Waste Treatment Plant	Tom Fletcher		7/11/19
ORP Assistant Manager for Tank Farms	Rob Hastings		7/15/19

History Sheet

Rev	Date	Reason for revision	Revised by
A	16 Jul 2001	Issued for ORP Concurrence	R Parazin
0	14 Mar 2002	Provided for ORP Contracting Officer to Issue as Operative ICD. Upon issuance this document will supersede BNFL-5193-ID-06, Rev 6	S Zuberi
1	15 Aug 2002	Semi-annual update	S Zuberi
2	15 Feb 2003	Semi-annual update	S Zuberi
3	15 Aug 2003	Annual update	S Lowe
4	06 Jun 2008	Periodic update. Clarified ownership of radioactive liquid effluent transfer lines. Transitioned tracking of all Issues and Action Items to the Action Tracking System (ATS) as follows: I6-30 → 24590-WTP-ATS-QAIS-07-824, Quantify I-129 in liquid effluent based on the WTP forecast and existing source term information I6-31 → 24590-WTP-ATS-QAIS-07-832, Determine type and amounts of organics in the liquid effluent I6-32 → 24590-WTP-ATS-QAIS-07-825, Evaluate dissolved solids quantities in the liquid effluent I6-33 → 24590-WTP-ATS-QAIS-07-822, Evaluate suspended solids quantities in the liquid effluent I6-40 → 24590-WTP-ATS-QAIS-07-831, Determine RLD effluent telecommunications requirements I6-41 → 24590-WTP-ATS-QAIS-07-853, Waste type segregation requirement A6-01 → 24590-WTP-ATS-QAIS-07-826, Perform authorization basis review prior to startup A6-02 → 24590-WTP-ATS-QAIS-07-935, Perform RAMI assessment for LERF / ETF - WTP interface A6-03 → 24590-WTP-ATS-QAIS-07-858, Prepare liquid effluent forecast A6-04 → 24590-WTP-ATS-QAIS-07-996, Schedule production of O&M procedures for RLD	E Strieper
5	14 Mar 2013	ORP Letter to N. F. Grover dated Aug 1, 2008, <i>Contract No. DE-AC27-01RV14136 - Direction to Make Changes and Re- Issue Interface Control Documents (ICD) 5, 6, 9, 11, 12, and 19 (CCN 183784)</i>	E Slaathaug
6	08 Apr 2014	Periodic update. This revision adds new ICD Issue (I6-44, 24590-WTP-ATS-MGT-14-0043, WTP cold commissioning RLD waste does not currently meet LERF / ETF Waste Acceptance Criteria).	E Slaathaug
7	27 Aug 2015	DFLAW incorporation. Total rewrite change bars are not shown	L Goytowski
8	17 Jul 2019	Revised per scope document CCN 311020. Added Sections 3, 4 and 5 based on revised ICD template. This is a major revision and change bars are not shown. Incorporated ICFs 24590-WTP-ICF-MGT-18-0013 and 24590-WTP-ICF-MGT-18-0014.	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.
Figure 1	New block diagram that aids in understanding the WTP and MSC interfaces.
1.3	New section to identify “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 to define “Special Interface Roles,”.
Table 2	Deleted. Configuration Management documents are listed in Section 3.
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.
2.2	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 Schedule,” to reference the One System DFLAW Integrated Program Schedule.
2.3	New subsection, “Acceptance Criteria.”
3	New section, “Requirements,” and subsections to address technical, activity level flow down, and programmatic requirements for ICD 01.
3.1	New section to address Technical Requirements (Design Criteria). Content is from 24590-WTP-ICF-MGT-18-0013.
3.2	New section to address Activity Level Requirements. Content is from 24590-WTP-ICF-MGT-18-0014.
3.3	New section to address Programmatic Requirements. Content is from 24590-WTP-ICF-MGT-18-0014.
4	New section, “Requisite Interface Items,” and subsections to address WTP Contractor, TOC and MSC interface items.

Revision Description

ICD Section	Description
4.1	New section to address WTP Contractor Requisite Interface Items. Content is from 24590-WTP-ICF-MGT-18-0014.
4.2	New section to address TOC Contractor Requisite Interface Items. Content is from 24590-WTP-ICF-MGT-18-0014.
5	New section to address References. Various references were deleted and added to support this revision of ICD 06.
Appendix A	Re-labeled as Issues and Open Items. Changed table format to align with ICD Action Item List. Added Open Item 0004 for TOC to evaluate the projected waste stream composition and determine the need for a new LERF/ETF treatment capability. Added Open Item 0005 for the WTP to complete a trend and design change to update the existing NLD/RLD control system control logic to work with the new ABB system currently being designed and installed at the LERF/ETF facilities.
Appendix B	Deleted. Closed ICD issues to be identified in Appendix A.
Appendix C	Deleted. New open items to be listed in Appendix A.

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Acronyms

ASME	American Society of Mechanical Engineers
BNI	Bechtel National, Incorporated
BOF	Balance of Facilities
DEP	Direct Feed LAW Effluent Management Facility Process System
DFLAW	Direct Feed Low-Activity Waste
DOE	US Department of Energy
EMF	Effluent Management Facility
ETF	Effluent Treatment Facility
FFS	Fluor Federal Services
FH	Fluor Hanford
FRP	fiber reinforced plastic
HLW	High-Level Waste (Facility)
ICD	interface control document
IO	Interface Owner
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LDR	Land Disposal Restrictions
LERF	Liquid Effluent Retention Facility
MSC	Mission Support Contractor
ORP	US Department of Energy, Office of River Protection
PRC	Plateau Remediation Contractor
PT	Pretreatment (Facility)
RAMI	Reliability, Availability, Maintainability, and Inspectability
RL	US Department of Energy, Richland Operations Office
RLD	Radioactive Liquid Waste Disposal System
RPP	River Protection Project
TF	Tank Farms
TLP	Treated LAW Evaporator Process System
TOC	Tank Operations Contractor
WAC	Washington Administrative Code
WRPS	Washington River Protection Solutions
WTP	Hanford Tank Waste Treatment and Immobilization Plant

1 Interface Description

1.1 Interface Scope

This document describes the administrative and physical interfaces required for managing the disposal of radioactive, dangerous liquid effluents generated during the operation of the Hanford Tank Waste Treatment and Immobilization Plant (WTP). The WTP Contractor transfers this effluent to the Liquid Effluent Retention Facility (LERF), which is managed by the Tank Operations Contractor (TOC). The TOC transfers effluent from the LERF to the Effluent Treatment Facility (ETF) for treatment and disposal.

Radioactive, dangerous liquid effluents that meet interface acceptance criteria can be discharged to the LERF for temporary storage and to the ETF for subsequent treatment. The LERF/ETF acceptance criteria includes both environmental limits and a treatability envelope.

For pretreatment operation, effluents are collected in the Radioactive Liquid Waste Disposal System (RLD) Tanks prior to transfer to LERF/ETF.

For DFLAW operation, effluents are collected in the Direct Feed LAW Effluent Management Facility Process System (DEP) Lag Storage Vessels prior to transfer to LERF/ETF.

This ICD focuses on the WTP direct-feed low-activity waste (DFLAW) operating configuration

1.2 System Overview

The interfaces for the radioactive, dangerous liquid effluents are illustrated in Figure 1.

The radioactive, dangerous liquid effluents are derived from secondary waste streams. The effluents consist of condensates from melter off-gas streams: submerged bed scrubber (SBS) condensate, caustic scrubber bottoms, plant wash and wet electrostatic precipitation (WESP).

For pretreatment operation, effluents from the Low-Activity Waste (LAW) and High Level Waste (HLW) Facilities are returned to the Pretreatment (PT) Facility for evaporation by the Treated LAW Evaporator Process System (TLP) evaporator. TLP evaporator condensates are combined with PT condensates and effluents from RLD-VSL-00017 A/B that include the LAW caustic scrubber bottoms in the RLD Process Condensate Tanks.

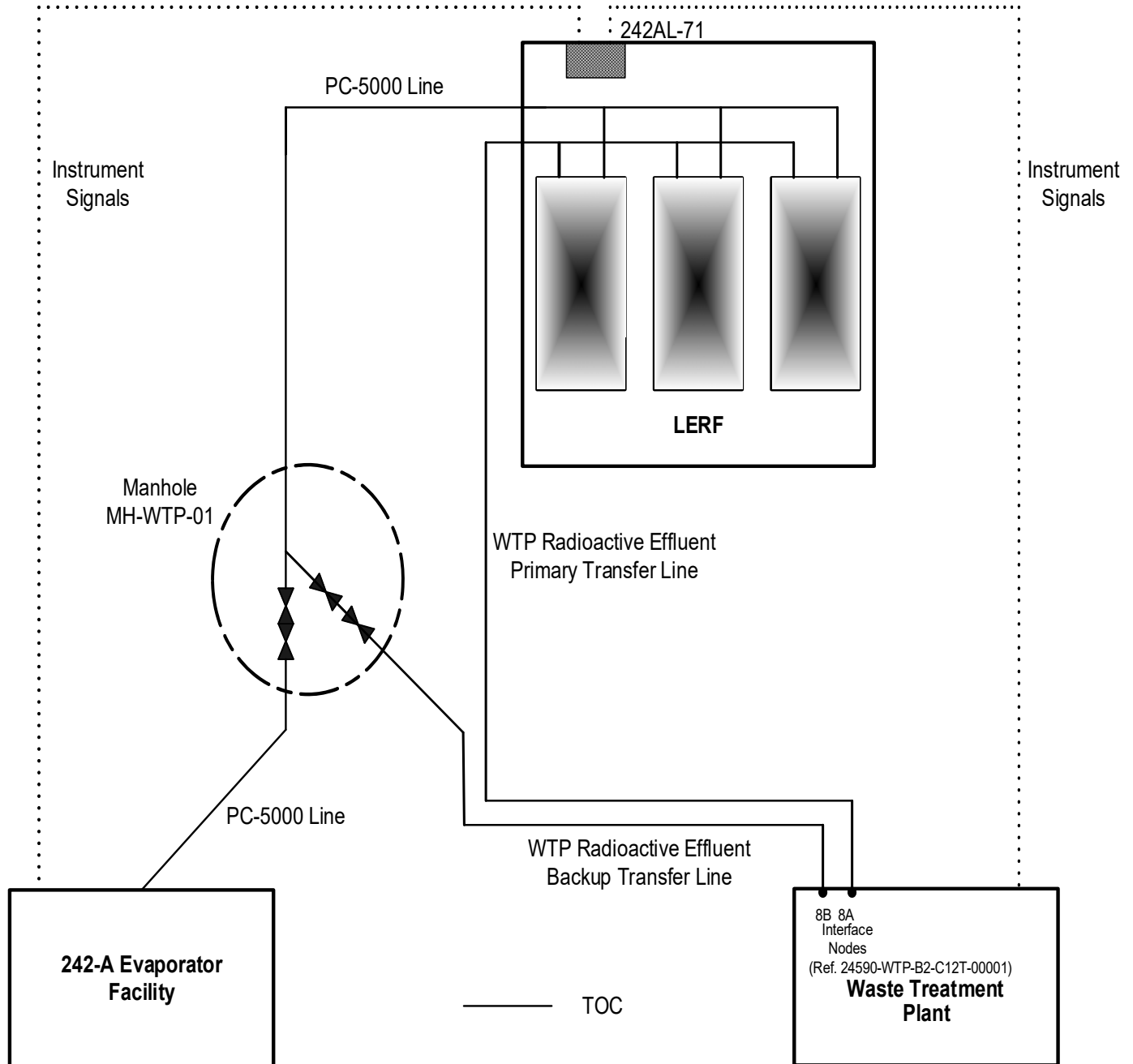
For DFLAW operation, Analytical Laboratory (LAB) waste and LAW off-gas effluents are returned to the Effluent Management Facility (EMF) for evaporation by the Direct Feed LAW Effluent Management Facility Process System (DEP Evaporator Separator Vessel). DEP condensates are combined with effluent from the LAW caustic scrubber in the DEP Overhead Sampling Vessels.

The LERF consists of three 7.8-million-gallon surface reservoirs. Each reservoir is lined and covered. The LERF is designed to receive low-level radioactive, potentially hazard aqueous waste from a variety of sources on the Hanford Site, such as process condensate from the 242-A Evaporator. The LERF stores this aqueous waste and feeds it to the ETF.

The ETF consists of two treatment trains designed to remove contaminants that may be present in wastewater. The main treatment train includes operations that remove or destroy metals, radionuclides

and organics. The treated effluent is stored in verification tanks, where it is sampled to verify it is below permit limits. The treated effluent is then discharged to a state approved land disposal site. The residue from the main treatment train is concentrated and dried in the secondary treatment train. The resulting powder is then packaged and transferred to a disposal facility.

Figure 1 Transfer Line Ownership



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 General Utility Interface

Interface Function	WTP Responsibility	TOC Responsibility
Provide pipelines for RLD transfer	Provide pipelines from the WTP EMF to interface Nodes 8A and 8B as shown on the <i>Interface Control Drawing</i> (BNI 2018g).	Support WTP physical tie in to the liquid effluent transfer lines and testing to verify the integrity of the transfer lines. Operate and maintain the effluent transfer lines from the WTP interface to the LERF
Provide data communication for monitoring RLD transfer	Provide data signals from the WTP control network to interface Node 18 as shown on the <i>Interface Control Drawing</i> (BNI 2018g).	Provide data signals from the LERF leak detection system to Node 18 and connect WTP data signals from Node 18 to the ETF control room.
Establish acceptance criteria for RLD transfer and identify process for exceptions	Provide waste profiles to characterize the effluent.	Evaluate waste profiles submitted by WTP against ETF criteria and authorize effluent transfer.
Support permit modifications	Submit identified technical information and analyses required to modify or comply with affected permits and implementing documents necessary to transfer the radioactive, dangerous liquid effluents to LERF/ETF.	Negotiate any necessary permit changes to transfer, treat, and dispose of the radioactive, dangerous liquid effluents.
Manage operational interruptions	Provide capacity to store radioactive, dangerous liquid effluents without impacting WTP Operations.	Notify the WTP of interruptions of services.
Establish sampling and analysis to support RLD transfer.	Develop a sampling plan to confirm the radioactive, dangerous liquid effluent complies with the ETF treatability envelope.	Review sample results provided by WTP.

1.4 Special Interface Roles

Not Applicable

2 Interface Background Information

This section only contains background information pertinent to the interface. For requirements, along with their basis, implementation, and configuration management, see Section 3. Other actions needed to complete the interface are listed in Section 4.

2.1 Physical Information

2.1.1 Effluent Transfer Pipelines

Two pipelines (a primary and backup) are used to transfer the radioactive, dangerous waste effluent from WTP to LERF/ETF. The physical interface points for these pipelines are shown as Nodes 8A and 8B on the Interface Control Drawing, 24590-WTP-B2-C12T-00001 (BNI 2018g). Node 8A is for the primary pipeline and Node 8B is for the backup.

The interface locations are also defined on drawing H-2-830094, Sheet 1 (FH 2001). The primary pipeline will be used to transfer the effluent. If the primary pipeline is unavailable, effluent can be transferred via the backup pipeline given its availability with respect to 242-A Evaporator operations.

All the piping used to transfer radioactive, dangerous waste effluent from the WTP to LERF/ETF is built to the ASME B31.3 Process Piping normal fluid service. When the piping is in service, Section 301.2.2 of ASME B31.3, Required Pressure Containment or Relief, is satisfied by the containment feature of the pipe-in-pipe design. In addition, the piping is designed and operated to meet the requirements for dangerous waste tank systems ancillary equipment in WAC 173-303-640.

The pipelines have been installed between the LERF/ETF and the WTP interface point. A performance specification was prepared that describes the TOC portion of the liquid effluent transfer systems (FFS 2001). The primary pipeline is a 4-inch diameter, fiber-reinforced plastic (FRP) inner pipe within an 8-inch diameter FRP outer pipe that is operated and maintained by TOC. The backup pipeline is a 3-inch diameter, FRP inner pipe within a 6-inch diameter FRP outer pipe that is also operated and maintained by the TOC. The design pressure for both radioactive, dangerous liquid effluent pipelines is 100 lb./in² gage at 49 °C (120 °F) (FFS 2001).

The WTP portion of the primary transfer pipeline is a coaxial line constructed of 4-inch 316L stainless steel carrier pipe within an 8-inch carbon steel secondary containment pipe. The WTP portion of the backup transfer pipeline is a coaxial line constructed of 3-inch 316L stainless steel carrier pipe within a 6-inch carbon steel secondary containment pipe. Leak detection for the WTP portion of the line is provided by a leak detection system located at the interface point, which is the low point between the EMF Facility and interface. Where the WTP pipelines join with the LERF/ETF TOC pipelines at the interface points, the design is physically compatible with and maintains the physical integrity of each pipeline.

The DFLAW transfer system provides vacuum relief capability through the high-point vents to the DEP Process Condensate Lag Storage Vessels (DEP-VSL-00005A/B) which provide a minimum of 48 hours effluent storage located at the EMF facility.

The backup transfer line connects to the PC-5000 line that connects the 242-A Evaporator to the LERF/ETF. The PC-5000 line is normally used to transfer process condensate from the 242-A Evaporator to LERF. The PC-5000 line has limited capacity and cannot be used by both the WTP and 242-A Evaporator at the same time. Measures to prevent inadvertent backflow to either the WTP or the 242-A Evaporator have been installed. System isolation and backflow prevention is accomplished using isolation valves.

2.1.2 Commissioning

During cold commissioning activities for the LAW Facility in the DFLAW configuration, the EMF will produce non-radioactive effluent. *Disposition Evaluation for Non-Radioactive Secondary Liquid Waste Effluents Generated During Low-Activity Waste Vitrification Facility Cold Commissioning*, 24590-RPT-MGT-18-014 (BNI 2018m), was prepared to evaluate disposition alternatives and recommend a management approach for the secondary liquid effluents generated during LAW Facility cold commissioning. The report provides recommendations for dangerous and non-dangerous effluents, depending on the composition of commissioning simulants. Current agreements are described in One System Decision Document 0019 and One System Decision Document 0020, CCN 312673 (BNI 2019). Since other contract mechanisms will be used to cover this scope, this ICD establishes no requirements or guidance for the disposal of non-radioactive effluents produced during cold commissioning.

2.2 Administrative Information

2.2.1 Safety Information

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

No new hazards or accident scenarios are introduced through this interface that are not adequately controlled by the interface partners and through controls placed across this interface. The physical and administrative controls to mitigate these risks using a graded approach have been adequately addressed through requirements on each participant's authorization basis and no additional physical and administrative controls are necessary.

2.2.2 Regulatory Information

Treated effluent from the LERF/ETF is discharged to a state approved land disposal site in accordance with the WAC 173-216 *State Waste Discharge Permit for the 200 Area Effluent Treatment Facility*, No. ST 4500 (Ecology 2015).

2.2.3 Post-Commissioning/Maintenance

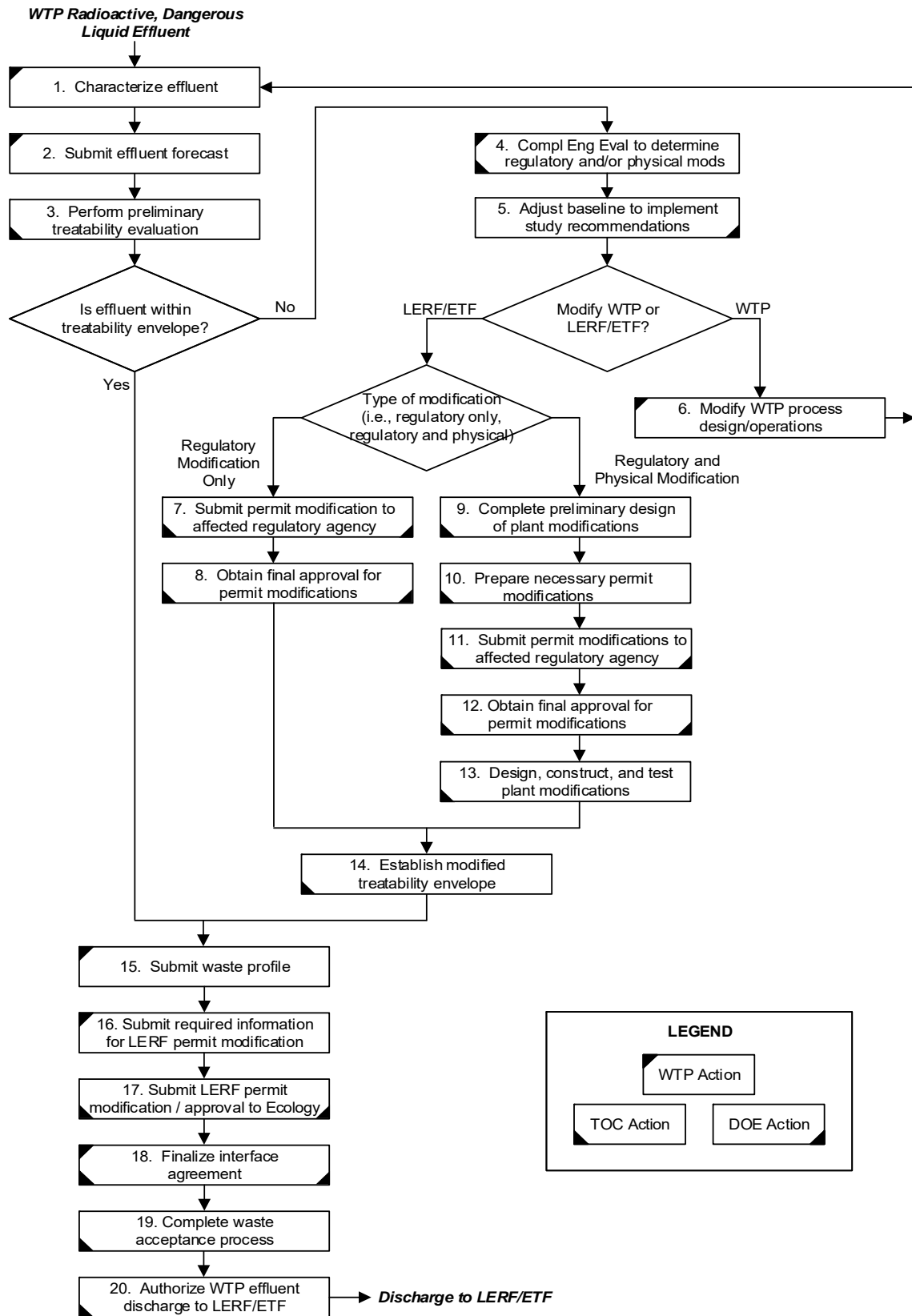
The ICD team has not identified any deactivation or reliability, availability, maintainability, and inspectability (RAMI) considerations that require management across the interface. Systematic RAMI assessments of this interface have not been conducted.

The set of operating instructions for the BOF DEP system, including routine and non-routine operations, operating ranges, authorizations and checklists, will be developed in a future system operating manual.

2.2.3.1 Interface Logic

An interface block diagram is provided in Figure 2. The diagram depicts the planning and preparation performed to support transfer of the WTP liquid effluents to the LERF/ETF. Organizational responsibilities are also shown. The interface activities are further described and correspond to the diagram.

Figure 2 Interface Block Diagram



- 1 Characterize Effluent - The WTP Contractor develops characterization data, based on process knowledge and/or sampling, for the WTP liquid effluents to be discharged to LERF/ETF. (Section 3.3.1.1).
- 2 Submit Effluent Forecast - The WTP Contractor submits the effluent characterization data to the TOC.
- 3 Perform Preliminary Treatability Evaluation - The TOC will perform a treatability evaluation based on the characterization data to determine whether the WTP effluent is within the LERF/ETF treatability envelope. If the WTP effluent is within the LERF/ETF treatability envelope, go to Step 15.
- 4 Complete Engineering Evaluation to Determine Regulatory and/or Physical Modifications - If the WTP effluent is determined to be outside the LERF/ETF treatability envelope during the acceptance process defined by *Liquid Waste Processing Facilities Waste Acceptance Criteria, HNF-3172* (WRPS 2016a), the TOC and WTP Contractor are to prepare an assessment and recommendation (Section 3.3.1.3 and Section 3.3.2.4).
- 5 Adjust Baseline to Implement Recommendations – TOC request a baseline adjustment to implement the modification(s) necessary to accept and treat the WTP effluent at LERF/ETF.
- 6 Modify WTP Process Design/Operations - If physical modification to the WTP process design is needed to allow the LERF/ETF to accept and treat the WTP effluent, the WTP Contractor implements the necessary process design changes using the WTP baseline change approval process.
- 7 Submit Permit Modifications to Affected Regulatory Agency - If modifications (e.g. General Permit Revisions) to the LERF/ETF or 242-A Evaporator regulatory envelope are needed to accept and treat the WTP effluent at the LERF/ETF, the TOC acquires necessary information from the WTP Contractor and submit permit/authorization basis modifications to DOE for submittal to the affected regulatory agency (e.g., State of Washington Department of Ecology, Environmental Protection Agency, Washington State Department of Health) for approval.
- 8 Obtain Final Approval for Permit Modifications - The TOC obtains approval of the permit/authorization basis modifications from the affected regulatory agency.
- 9 Complete Preliminary Design of Plant Modifications - If physical modifications to the LERF/ETF are needed to accept and treat the WTP effluent at the LERF/ETF, the TOC completes preliminary design for the physical modifications to the LERF/ETF.
- 10 Prepare Necessary Permit Modifications - The TOC completes the required permit/authorization basis modifications based on the physical modifications to the LERF/ETF.
- 11 Submit Permit Modifications to Affected Regulatory Agency - If physical modifications to the LERF/ETF or 242-A Evaporator regulatory envelope are needed to accept and treat the WTP effluent at the LERF/ETF, the TOC acquires necessary information from the WTP Contractor and submits permit/authorization basis modifications to DOE for submittal to the affected regulatory agency (e.g. State of Washington Department of Ecology, Environmental Protection Agency, Washington State Department of Health) for approval.
- 12 Obtain Final Approval for Permit Modifications - The TOC obtains approval of the permit/authorization basis modifications from the affected regulatory agency prior to construction.
- 13 Design, Construct, and Test Plant Modifications - The TOC completes definitive design, construct, and test the physical modifications to the LERF/ETF.
- 14 Establish Modified Treatability Envelope - The TOC modifies the LERF/ETF treatability envelope incorporating the approved permit/authorization basis modifications and/or physical modifications.

- 15 Submit Waste Profile - Once the WTP effluent is within the LERF/ETF treatability envelope, the WTP Contractor finalizes the waste profile and submit it to the TOC for approval.
- 16 Submit Required Information for LERF Permit Modification - The WTP Contractor submits to the TOC the information needed to modify the LERF/ 242-A Evaporator Dangerous Waste Permit for the WTP tie-in.
- 17 Submit to Ecology LERF Permit Modification /Approval - The TOC submits the permit modification for the WTP tie-in to LERF and for the PC-5000 transfer line to the DOE.
- 18 Finalize Interface Agreement - The WTP Contractor and the TOC finalize the interface agreement (this ICD or another document) for discharge of the WTP effluent to LERF/ETF.
- 19 Complete Waste Acceptance Process - The TOC finalizes the WTP effluent waste acceptance checklist.
- 20 Authorize WTP Effluent Discharge to LERF/ETF - The TOC authorizes discharge of the WTP effluent to LERF/ETF. The TOC Contractor authorizes the use of the backup transfer line for discharge of the WTP effluent to LERF/ETF.

2.2.4 Interface Schedule

Refer to the Mission Integration DFLAW Integrated Program Schedule for monitoring appropriate interface schedule milestones as listed in Table 2 below:

Table 2 Radioactive, Dangerous Liquid Effluent Service Schedule

Contractor	Schedule Section	Act ID	Title
WTP	1.3.10.1.9.5	1TE0122	WTP Conduct Physical Tie-in at Node 8A & 8B (Primary Pipe)
WTP	1.2.4.4-1	1W5185	(LERF/ETF - Rad Lines Complete (Includes tie-in at Fence))
WTP	1.2.3.3.PC	1W14613EM	(EMF) – Comm - Conduct Water Run Testing
TOC	1.3.10.1.9.5	1TE0134	WRPS Receives IQRPE Fit for Use Determination of 200-E-310/311-PL Lines

2.3 Acceptance Criteria

The waste acceptance process for the LERF/ETF is described in *Liquid Waste Processing Facilities Waste Acceptance Criteria*, HNF-3172 WRPS 2016a and *New Waste Stream Acceptance at LERF/ETF*, TFC-ENG-FACSUP-P-34 WRPS 2017c. The WTP Contractor completes a waste profile sheet (Section 3.3.1.1). Waste profiles include updated information on the liquid waste volume, source description, chemical and physical properties, and regulatory designation per WAC 173-303. In addition, the waste profile includes information on any constituents that require further treatment to comply with the land disposal restrictions (LDR) treatment standards per WAC 173-303-140.

The TOC identifies the technical information required from the WTP Contractor to support permit modifications to LERF/ETF and the 242-A Evaporator, indicating when the information is required.

The WTP Contractor provides a waste effluent forecast to the TOC as mutually agreed to reflect major process modifications. These forecasts are provided until the start of hot operations. The format and content of the forecast are consistent with the waste profile sheet discussed above. Three months after

receipt of the WTP Contractor effluent waste forecast, the TOC provides a letter report to the DOE and the WTP Contractor documenting the treatability of the effluent.

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.

References to implementation documentation in the following section are focused on the Direct Feed Low Activity Waste (DFLAW) operating scenario. Implementation documentation for the PT/HLW operating scenario will be captured in a future ICD 06 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 WTP Contractor Technical Requirements

- 3.1.1.1 WTP shall provide a minimum of 48 hours of storage capacity to store radioactive, dangerous liquid effluent without impacting operations.

Requirement Basis:

A trade-off study was conducted in 1998 (BNFL 1998) which determined that closure of the LERF/ETF for more than a 24-hour period would likely mean there is a major failure at the LERF/ETF and that discharge capability would not be available for an extended duration, thereby requiring the WTP facility to shut down production. The study determined a 24-hour capacity was sufficient for anticipated process conditions, including plant shutdown, however it was necessary to add at least 24 hours of additional reserve capacity for buffer in the event of short-term LERF/ETF unavailability (≤ 24 hours). As a result, the study recommended providing total reserve capacity of at least 48 hours to provide sufficient buffer to allow normal plant operation to continue during short-term LERF/ETF unavailability. Based on this study, DOE provided technical direction to provide a 48-hour lag storage capacity (DOE 1999).

Configuration Management Documents:

Requirement Source(s):

- CCN 004373, *Contract No. DE-AC06-96RL13308 – Limited Authorization to Proceed with Incorporation of the System Optimization Study Results in Part B-1* (DOE 1999)
- 24590-WTP-DB-ENG-01-001, *Basis of Design, Section 6.1.4 and 6.3.6* (BNI 2018a)
- 24590-WTP-RPT-OP-01-001, *Operations Requirements Document, Section 3.5.6* (BNI 2018b)

Implementation:

- 24590-BOF-MVC-DEP-00009, *Batch Sizing Calculation of DEP (Direct Feed LAW Effluent Management Facility Process System) Vessels: DEP-VSL-00001, -00002, -00003A/B/C, -00004A/B, -00005A/B* (BNI 2018k)

- 3.1.1.2 WTP shall provide the motive force (transfer pumps) and the waste transfer pipelines from the WTP facility that connect to the existing LERF/ETF transfer pipelines at the designated TOC/WTP interface points near the WTP site boundary (nodes 8A and 8B).

Requirement Basis:

Two coaxial pipelines, designated as 4"-WTP-001-M17 (primary) and 3"-WTP-002-M17 (backup), have been provided by the TOC for use in transferring radioactive, dangerous waste effluent from the TOC/WTP interface points to the LERF/ETF. The physical TOC/WTP interface points for these existing pipelines are shown as Nodes 8A and 8B on the *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2018g). Node 8A is for the primary pipeline (4"-WTP-001-M17) and Node 8B is for the backup pipeline (3"-WTP-002-M17). Hanford drawings H-2-830094, Sheet 1 (FH 2001) and H-2-830102, Sheet 2 (FH 2001b) show the design of these existing pipelines at the interface points. The primary pipeline (a 4-inch fiber reinforced plastic [FRP] pipe within an 8-inch FRP enclosure) will normally be used to transfer the effluent. If the primary pipeline is unavailable, effluent will be transferred via the backup pipeline (a 3-inch FRP piping within a 6-inch FRP enclosure), subject to its availability with respect to 242-A Evaporator operations.

Configuration Management Documents:

Requirement Source(s):

- 24590-WTP-B2-C12T-00001, *Interface Control Drawing* (BNI 2018g)
- H-2-830094, Sheet 1, *W-519 Site/Utility Systems Plan and Profile Sta 0+400 to Sta 0+800* (FH 2001)
- H-2-830102, Sheet 2, *W-519 Site/Utility Systems Piping Sections and Details* (FH 2001b)

Implementation:

- 24590-PTF-M6-PWD-00058002, P&ID – *PTF Plant Wash and Disposal System Underground Transfer Lines* (BNI 2016a)
- 24590-BOF-M6-DEP-00006003, P&ID – *BOF/EMF Direct Feed LAW EMF Process System Lag Storage Vessel Transfer Pumps, DEP-PMP-00005A/B* (BNI 2018h)

- 3.1.1.3 The WTP transfer system shall ensure that the design pressure of the TOC waste transfer pipelines between the LERF/ETF and the TOC/WTP interface points (Nodes 8A and 8B) is not exceeded. The design pressure for both TOC waste transfer pipelines (primary and backup) is 100 psig at 49 °C (120 °F).

Requirement Basis:

The design pressure for both TOC's primary and backup pipelines is 100 psig at 49 °C (120 °F) per Appendix A of the performance specification (FFS 2001). The TOC fiber-reinforced

pipelines are already installed and most of the WTP piping is steel, therefore, the TOC pipelines are the limiting component for pressure.

Configuration Management Documents:

Requirement Source(s):

- W-519-P1, *Performance Specification, Liquid Effluent Transfer System* (FFS 2001)

Implementation:

- 24590-BOF-M6C-RLD-00002, *Pressure and Temperature for the RLD and DEP Pipelines from the EMF to the ICD 06 and ICD 31 Interface Point Nodes, for DFLAW Operations* (BNI 2018j)
- 24590-BOF-MPC-DEP-00003, *24590-BOF-MP-DEP-PMP-00005A/B Lag Storage Vessel Transfer Pump Sizing* (BNI 2018n)
- 24590-BOF-M6C-DEP-00009, *Design Pressure and Temperature Calculation for the EMF DEP/DVP/AFR/NLD/SHR/SNR Systems*, (BNI 2018o)

3.1.1.4 WTP shall provide interlock(s) or other provisions to stop effluent transfer upon:

- a) An alarm from the WTP portion of the transfer line leak detection system, or
- b) An alarm from the Tank Operating Contractor's (TOCs) LERF/ETF transfer line leak detection or control system.

Requirement Basis:

A means of stopping effluent flow is needed in the event a leak of radioactive, dangerous liquid effluent is detected in either the WTP transfer lines or the LERF/ETF transfer lines during a transfer. Hanford drawings H-2-88766, Sheet 5 (FD 2008) and H-2-88815, Sheet 5 (KEH 2012) show the LERF – WTP telecommunications interface and the related sequential logic diagram, including the LERF/ETF transfer line leak detection.

Configuration Management Documents:

Requirement Source(s):

- 24590-WTP-RPT-OP-01-001, *Operations Requirements Document*, Section 7.1 and 18 (BNI 2018b)
- H-2-88766, Sheet 5, *P&ID – LERF-WTP Interface*, Rev. 2 (FD 2008)
- H-2-88815, Sheet 5, *Instrumentation Sequential Logic Diagram LERF Basin*, (KEH 2012)

Implementation:

- 24590-PTF-M6-PWD-00058002, *P&ID – PTF Plant Wash and Disposal System Underground Transfer Lines* (BNI 2016a)
- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program. The current implementation status can be obtained from the (Engineering) Requirement Area Manager (RAM) as identified in 24590-WTP-

LIST-RARM-001, *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018c).

3.1.1.5 WTP shall provide 5-micron filter(s) in the waste transfer pipeline(s) to LERF/ETF.

Requirement Basis:

To prevent solids accumulation in the LERF basins, wastewaters are required to be filtered through a 5-micron filter before receipt at LERF/ETF (WRPS 2016a, section 3.3.2.1). Filter(s) may be nominal-rated (minimum) or absolute-rated filters.

Configuration Management Documents:

Requirement Source(s):

- HNF-3172, *Liquid Waste Processing Facilities Waste Acceptance Criteria* (WRPS 2016a)

Implementation:

- 24590-BOF-M6-DEP-00006003, *P&ID – BOF/EMF Direct Feed LAW EMF Process System Lag Storage Vessel Transfer Pumps DEP-PMP-00005A/B* (BNI 2018f)
- 24590-BOF-PYD-DEP-00001, *24590-BOF-PY-DEP-FILT-00002 - Process Condensate Filter* (BNI 2017a)

3.1.1.6 WTP shall provide instrumentation for monitoring of radioactive, dangerous liquid effluent flow rate, radioactivity, pH, and conductivity during transfers to LERF/ETF.

Requirement Basis:

Monitoring of discharge flowrate, radioactivity, pH, and conductivity is needed to assist LERF/ETF staff in recognizing if changes are occurring to the effluent composition that may impact LERF/ETF operations.

Configuration Management Documents:

Requirement Source(s):

- CCN 053440, *ICD-05/ICD-06: Establish Telecommunications and Data Transfer Requirements for NLD and RLD Systems to TEDF and LERF/ETF* (BNI 2003b)

Implementation:

- 24590-BOF-M6-DEP-00006003, *P&ID – BOF/EMF Direct Feed LAW EMF Process System Lag Storage Vessel Transfer Pumps DEP-PMP-00005A/B* (BNI 2018f)

3.1.1.7 WTP shall provide fiber optic cable and telecommunications equipment for transmitting monitoring data (flowrate, radioactivity, pH, and conductivity) to the Node 18 telecommunications interface point with LERF/ETF using Process Field Bus (PROFIBUS) communication technology.

Requirement Basis:

Continuous monitoring data for discharge flowrate, radioactivity, pH, and conductivity is necessary at LERF Instrument Building (242AL-71) to assist LERF/ETF staff in recognizing if changes are occurring to the effluent composition that may impact LERF/ETF operations. Data transmission from the WTP instruments to the Node 18 telecommunications interface point is WTP responsibility. Data transmission from the Node 18 telecommunications interface point to LERF Instrument Building (242AL-71) is Tank Operating Contractor (TOC) responsibility. The Node 18 telecommunications interface point is shown on the *Interface Control Drawing* (BNI 2018g) near Pole E2476 in junction box 6FX2 (provided by others). Per Hanford drawing H-2-88766, Sheet 5 (FD 2008) and H-2-88813, Sheet 3 (DOE 2008), a single mode fiber optic cable in conjunction with PROFIBUS digital communications protocol will be used on the TOC side of the interface.

Configuration Management Documents:

Requirement Source(s):

- CCN 053440, *ICD-05/ICD-06: Establish Telecommunications and Data Transfer Requirements for NLD and RLD Systems to TEDF and LERF/ETF* (BNI 2003b)
- 24590-WTP-B2-C12T-00001, *Interface Control Drawing* (BNI 2018g)
- H-2-88766, Sheet 5, *P&ID – LERF-WTP Interface, Rev. 2* (FD 2008)
- H-2-88813, Sheet 3, *Electrical/Instm. Interconn. & Wiring Diag. LERF Inst. Bldg.* (DOE 2008)
- H-2-88815, Sheet 5, *Instrumentation Sequential Logic Diagram LERF Basin*, (KEH 2012)

Implementation:

- The implementing mechanism(s) and traceability shall 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 2018c).

3.1.1.8 WTP shall provide sample points to allow for sampling of radioactive, dangerous liquid effluent to confirm compliance with the LERF/ETF treatability envelope.

Requirement Basis:

Per the *Liquid Waste Processing Facilities Waste Acceptance Criteria*, Section 3.5 (HNF-3172, WRPS 2016a), the generator (i.e., WTP) has responsibility to demonstrate that wastewater remains consistent with the certified waste profile through periodic sampling. To accomplish this, sample points are required.

Configuration Management Documents:

Requirement Source(s):

- HNF-3172, *Liquid Waste Processing Facilities Waste Acceptance Criteria* (WRPS 2016a)

- 24590-WTP-RPT-OP-01-001, *Operations Requirements Document* (BNI 2018b)
- 24590-WTP-ORDX-OP-15-0049, *Exception to Automatic Process Sampling Requirement* (BNI 2015b)

Implementation:

- 24590-BOF-M6-DEP-00006004, *P&ID – BOF/EMF Direct Feed LAW EMF Process System Lag Storage Vessel Recirc Pumps DEP-PMP-00015A/B/C* (BNI 2018e)
- 24590-BOF-M6-DEP-00004003, *P&ID – BOF/EMF Direct Feed LAW EMF Process System Overhead Sampling VSL Pumps DEP-PMP-00004A/B* (BNI 2018l)
- 24590-BOF-M0D-DEP-00001, *BOF/EMF Sampling Fume Hood* (BNI 2018d)

3.1.2 TOC Technical Requirements

- 3.1.2.1 TOC shall provide fiber optic cable and telecommunications equipment for transmitting WTP monitoring data (flowrate, radioactivity, pH, and conductivity) from the Node 18 telecommunications interface point to ETF Building 2025E and the LERF Instrument Building 242AL-71 using Process Field Bus (PROFIBUS) communication technology.

Requirement Basis:

Continuous monitoring data for discharge flowrate, radioactivity, pH, and conductivity is necessary at LERF Instrument Building (242AL-71) to assist LERF/ETF staff in recognizing if changes are occurring to the effluent composition that may impact LERF/ETF operations. Data transmission from the WTP instruments to the Node 18 telecommunications interface point is WTP responsibility. Data transmission from the Node 18 telecommunications interface point to ETF Building 2025E and the LERF Instrument Building (242AL-71) is Tank Operating Contractor (TOC) responsibility. The Node 18 telecommunications interface point is shown on the *Interface Control Drawing* (BNI 2018g) near Pole E2476 in junction box 6FX2.

Configuration Management Documents:

Requirement Source(s):

- CCN 053440, *ICD-05/ICD-06: Establish Telecommunications and Data Transfer Requirements for NLD and RLD Systems to TEDF and LERF/ETF* (BNI 2003b)
- 24590-WTP-B2-C12T-00001, *Interface Control Drawing* (BNI 2018g)

Implementation:

- H-2-88766, *Sheet 5, P&ID – LERF-WTP Interface, Rev. 2* (FD 2008)
- H-2-88813, *Sheet 3, Electrical/Instm. Interconn. & Wiring Diag. LERF Inst. Bldg.* (DOE 2008)
- H-2-88815, *Sheet 5, Instrumentation Sequential Logic Diagram LERF Basin* (KEH 2012)

3.2 Activity Level Requirements

Activity level requirements are facility and functional requirements that require incorporation into the work planning process. These include repetitive use requirements that are typically implemented in an operating technical procedure or preventative maintenance work package. They may also include task specific requirements that must be complied with when completing a specific scope of work, such as a repair or replacement of a component. These are typically performed within a maintenance work control document.

3.2.1 WTP Contractor Activity Level Requirements

3.2.1.1 In the event the radioactivity, pH, or conductivity monitoring is inoperable for greater than 24 hours, alternative monitoring and reporting will be performed as follows:

- 1) The inoperable parameter (radioactivity, pH, or conductivity) will be established through alternate means and logged.
- 2) The results will be reported to the ETF control room at least once per day during transfers until the lost parameter(s) can be restored.

If flow monitoring is lost, WTP will notify the ETF control room when a transfer begins, estimated flow, and when the transfer ends.

Requirement Basis:

When the continuous monitoring systems for flow, radioactivity, pH, or conductivity are interrupted, alternative monitoring methods shall be used to capture the data. This will allow effluent transfers to be uninterrupted due to a failure of the monitoring system. The use of alternative monitoring methods allows the needed data to be acquired and reported to the ETF Control Room to assist LERF/ETF staff in recognizing if changes are occurring to the effluent composition that may impact LERF/ETF operations.

Configuration Management Document(s):

Requirement Source(s):

- None

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 2018c).

3.2.2 TOC 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 Complete a Waste Profile Sheet for each unique waste stream to be sent to LERF. Provide the Waste Profile Sheet to the TOC.

Requirement Basis:

The Waste Profile Sheet and its instructions are included in *Liquid Waste Processing Facilities Waste Acceptance Criteria (WRPS 2016a)*.

Configuration Management Document(s):

Requirement Source(s):

- Liquid Waste Processing Facilities Waste Acceptance Criteria (WRPS 2016a)

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 2018c)*.

3.3.1.2 At the start of hot commissioning, the initial ten batches of radioactive, dangerous liquid effluent will be sampled and analyzed to confirm compliance with the LERF/ETF treatability envelope and the sampled tank will be discharged to the LERF prior to sample results availability. If these initial batches of waste comply with the LERF/ETF treatability envelope, the frequency of sampling and analysis of the radioactive, dangerous liquid effluent will be decreased to once every tenth batch. Additional sampling and analysis will be performed under any one of the following conditions:

- A process upset condition occurs that could result in a change in the composition of the radioactive, dangerous liquid effluent.
- A different feed stream, such as a feed from a different source tank, is introduced into the LAW Facility.
- The WTP Contractor and the TOC agree to additional sampling and analysis; for example, trend analysis or off-normal situations.
- Additional sampling and analysis is required for regulatory or permit compliance at WTP and/or LERF/ETF.
- Complete or partial loss of data, controls, and monitoring interface.

Requirement Basis:

Waste characterization is required by *Dangerous Waste Regulations, WAC 173-303*, which is invoked by the Hanford Facility RCRA permit WA7890008967.

Configuration Management Document(s):

Requirement Source(s):

- *Dangerous Waste Regulations, WAC 173-303*

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 RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018c).

- 3.3.1.3 If the WTP effluent is determined to be outside the LERF/ETF treatability envelope limits during the acceptance process defined by *Liquid Waste Processing Facilities Waste Acceptance Criteria*, the TOC and WTP Contractor are to prepare an assessment and recommend the preferred method(s), if possible and practical, to correct any feed composition or property deficiencies for DOE review and approval for subsequent LERF/ETF acceptance of WTP effluent.

Requirement Basis:

The LERF/ETF treatability envelope limits may need to be revised to accommodate the WTP effluent. The preparation of an assessment is a first step to investigate the impact to the permit and facilities. The complete sequence of activities required for effluent that does not meet the LERF/ETF treatability envelope is included in *Liquid Waste Processing Facilities Waste Acceptance Criteria* (WRPS 2016a).

Configuration Management Document(s):

Requirement Source(s):

- *Liquid Waste Processing Facilities Waste Acceptance Criteria, (WRPS 2016a)*

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 RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018c).

3.3.2 TOC Programmatic Requirements

- 3.3.2.1 Complete a Waste Acceptance Approval (WAA) for each Waste Profile Sheet submitted by WTP for each unique waste stream to be sent to LERF that meets the acceptance criteria. Provide Waste Acceptance Approval to WTP.

Requirement Basis:

The use of the Waste Acceptance Approval form is included in *Liquid Waste Processing Facilities Waste Acceptance Criteria* (WRPS 2016a).

Configuration Management Document(s):

Requirement Source(s):

- *Liquid Waste Processing Facilities Waste Acceptance Criteria*, (WRPS 2016a)

Implementation:

- *Liquid Waste Processing Facilities Waste Acceptance Criteria*, (WRPS 2016a)

3.3.2.2 Notify the WTP Contractor at least 15 days in advance of planned LERF/ETF shutdowns.

Requirement Basis:

Advance notice of pending LERF shutdowns will give WTP time to make accommodations to minimize adverse impacts to WTP operations.

Configuration Management Document(s):

Requirement Source(s):

- None

Implementation:

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

3.3.2.3 Coordinate WTP's access and use of the backup liquid effluent transfer line.

Requirement Basis:

The TOC contractor operates and maintains pipeline 3"-WTP-002-M17 that is designated as the backup liquid effluent transfer line for WTP.

Configuration Management Document(s):

Requirement Source(s):

- None

Implementation:

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

3.3.2.4 If the WTP effluent is determined to be outside the LERF/ETF treatability envelope limits during the acceptance process defined by *Liquid Waste Processing Facilities Waste Acceptance Criteria*, the TOC and WTP Contractor are to prepare an assessment and recommend the preferred method(s), if possible and practical, to correct any feed composition or property deficiencies for DOE review and approval for subsequent LERF/ETF acceptance of WTP effluent.

Requirement Basis:

The LERF/ETF treatability envelope limits may need to be revised to accommodate the WTP effluent. The preparation of an assessment is a first step to investigate the impact to the permit and facilities. The complete sequence of activities required for effluent that does not meet the LERF/ETF treatability envelope is included in *Liquid Waste Processing Facilities Waste Acceptance Criteria* (WRPS 2016a).

Configuration Management Document(s):

Requirement Source(s):

- Liquid Waste Processing Facilities Waste Acceptance Criteria, (WRPS 2016a)

Implementation:

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 Mission Integration Requirements Area Manager may use the requirements management tool to track requisite interface items.

4.1 WTP Contractor Requisite Interface Items

- 4.1.1 Develop DFLAW effluent management facility process system (DEP system) cold commissioning waste disposal strategy with TOC once waste stream characterization data is available.
- 4.1.2 Develop a procedure to test and verify the integrity of the primary and backup liquid effluent lines with TOC.
- 4.1.3 Coordinate the final tie-in (physical connection, permitting, testing) of the WTP liquid effluent transfer lines with the TOC contractor. This shall be completed once a modification of Hanford Facility RCRA permit incorporating TOC waste transfer lines 4"-WTP-001-M17 (primary) and 3"-WTP-002-M17 (backup) is complete.

4.2 TOC Requisite Interface Items

- 4.2.1 Provide support to WTP to develop a procedure to test and verify the integrity of the primary and backup liquid effluent lines.
- 4.2.2 Modify the Hanford Facility RCRA permit WA7890008987 (Ecology 2010) to incorporate the TOC waste discharge lines 4"-WTP-001-M17 (primary) and 3"-WTP-002-M17 (backup) as described in WRPS-1700395 (WRPS 2017a), WRPS-1701388 (WRPS 2017b), and One System Decision Document 0011 (*BNI 2017b*).
- 4.2.3 Complete the construction and testing of leak detection upgrades under Tank Farm Project T1P191.

5 References

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WRPS. 2017b. Letter WRPS-1701388, “*Contract Number DE-AC27-08RV14800 – U.S. Department of Energy, Office of River Protection Determination on Ownership for the 200-E-310-PL and 200-E-311-PL Transfer Lines*”, WE Hader, DOE/ORP to KA Downing, WRPS, 18 April 2017, Washington River Protection Solutions, Richland, Washington.

WRPS. 2017c. *New Waste Stream Acceptance at LERF/ETF*, TFC-ENG-FACSUP-P-34, Rev A-2, 15 August 2017. Washington River Protection Systems, Inc., Richland, Washington.

Appendix A - ICD 06 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
I6-42	WTP Interface Nodes 8A and 8B to LERF/ETF Primary and Back-up Line Leak Detectors Upgrade	WRPS-ONESYSTEM-2012-0004	TOC	Jeff Van Meighem	N/A	Open 5/31/2021	Issues 16-42 and 16-43 remain as is. A contract action may change the status of both issues, but at present, no specific action for ICD 06 is required.	Update 04/01/19: This upgrade project is identified as item 1TE0164 and 1TE0166 on Direct Feed Low Activity Waste (DFLAW) Integrated Schedule. Also, under project number T1P191 in WRPS Project Navigator. This open issue will be closed at the completion of this project.
I6-43	Integrate WTP to LERF/ETF Back-up Line Leak Detection with WTP Effluent Discharge Controls	WRPS-ONESYSTEM-2012-0003	TOC	Jeff Van Meighem	N/A	Open 5/31/2021	Issues 16-42 and 16-43 remain as is. A contract action may change the status of both issues, but at present, no specific action for ICD 06 is required.	Update 04/01/19: This upgrade project is identified as item 1TE0164 and 1TE0166 on Direct Feed Low Activity Waste (DFLAW) Integrated Schedule. Also, under project number T1P191 in WRPS Project Navigator. This open issue will be closed at the completion of this project.
I6-45	Revision 7 of ICD 06 only supports design scope for the DFLAW project. Table 1 and Sections 2.1.1, 2.1.2.1, 2.1.3.1, 2.2.2.1, 2.1.3.1, 2.2.2.2, 2.3.1.1, 2.3.3.1, and 2.3.5.1 of this ICD contain scope that is beyond the design phase for DFLAW. For implementation of these sections, complete a WTP contract modification to include DFLAW procurement, construction, start-up and commissioning scope that is currently outside the current specification in the WTP contract.	24590-WTP-ATS-MGT-15-0440	WTP	Bruce Schappell Robert Henckel		Closed 3/29/17	The DFLAW Project has been fully incorporated into the WTP Contract (DE-AC27-01RV14136) Rev. 384 signed 12/15/16. Transmittal letter CCN 293870	
Open Item 0004	Based on its projected composition, the DFLAW radioactive dangerous liquid effluent cannot be accepted into ETF. A new treatment capability is needed for ETF.	ESTARS: WRPS-ARM_STUARTT-2019-0001	TOC	Stuart Arm Tom Sackett	TOC	Open 09/30/2019	TOC is targeting September 30, 2019 to finalize project planning (cost and schedule) for the new treatment capability.	

Issue/Action/ Open Item No.	Description	Tracking No	Responsible Org.	Responsible Actionee	Originator	Status/ Due Date	Support Information / Basis for Closure	Comments
Open Item 0005	Integrate the WTP controls system interface with the LERF new ABB System. This strategy changes the control signals to include handshake signals (e.g. Ready to Transfer, Ready to Receive, Transfer in Progress, Terminate Transfer, etc.), and Communication Watchdog signals from Node 18 telecommunications. This change is in-part implemented to be consistent with the TOC.	24590-WTP-ATS- MGT-19-0024 PAIL 19-1666	WTP	Robert Steele John Schwenker	Guy Robertshaw	Open 06/30/2020	Develop a ROM/Trend to revise the existing control system design to communicate with the new ABB system being installed by the WRPS contractor for the NLD system (ICD 005), RLD system (ICD 006), Direct Feed LAW (ICD 030), & DFLAW Effluent Returns to Double-Shell Tanks (ICD 031)	
Refer to the ICD Action Item List for ICD 06 Open Items that were created in previous revisions.								