Document title: # ICD 05 – Interface Control Document for Nonradioactive, Nondangerous, Liquid Effluents

Document number: 24590-WTP-ICD-MG-01-005, Rev 8

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

Department: Project Management

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

Approved by: Scott Monson

Scott K Monson 10/22/2018

Signature *Date*

BNI Area Project Manager

Issue Status: Approved

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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 05 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 05 Lead	David Reinemann	David Reinemann	10-3-18
WTP Contractor	ICD 05 Interface Owner	David Reinemann	David Reinemann	10-3-18
TOC	ICD 05 Interface Owner	Rick Tedeschi	Rick Tedeschi	10-4-18
MSC	ICD 05 Interface Owner	N/A		
PRC	ICD 05 Interface Owner	N/A		

DOE Approval

Position	Name	Signature	Date
ORP Assistant Manager for Waste Treatment Plant	Tom Fletcher		10/10/18
ORP Assistant Manager for Tank Farms	Rob Hastings	Rob Hastings	10/17/18

History Sheet

Rev	Date	Reason for revision	Revised by
0	14 Mar 2002	Provided for ORP Contracting Officer to Issue as Operative ICD. Upon issuance this document will supersede BNFL-5193-ID-05, 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	07 Jan 2008	Periodic update. Transitioned tracking of all Issues and Action Items to the Action Tracking System (ATS). (See revision for details.)	K Cleveland
5	16 Apr 2012	ORP Letter to N. F. Grover dated Aug 1, 2008, *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)	K Cleveland
6	26 Feb 2014	Periodic update.	K Cleveland
7	03 Feb 2016	Periodic update. Reformatted document in accordance with updated *Interface Control Procedure* (24590-WTP-GPP-MGT-003, Rev 10). No revision bars are used to indicate changes; however, changes are described in the Revision Description. Opened Item #001 (Appendix C). Incorporated 24590-WTP-ICF-ENG-14-0001 with changes.	K Cleveland
8	22 Oct 2018	Revised per scope document CCN 305683. 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-16-0001, 24590-WTP-ICF-MGT-18-0001, 24590-WTP-ICF-MGT-18-0002, and 24590-WTP-ICF-MGT-18-0003.	D Reinemann

Revision Description

ICD Section	Description
All	The ICD has been reformatted in accordance with the requirements of procedure for *Interface Control Documents* (24590-WTP-GPP-RAOS-OS-0001, Rev 2).
Acronyms	Updated list
1.1	Renamed section to "Interface Scope" and added new content.
1.2	Inserted new section, "System Overview", added new content and a block diagram (Figure 1).
1.3	Renamed Rev 7 Section 1.2 to "Interface Functions" and revised statement.
Table 1	Renamed table to "Functions of the Nonradioactive, Nondangerous Liquid Effluents Interface" and simplified content.
2	Renamed section to "Interface Background Information" and inserted introductory paragraph.
2.1	Renamed subsection to "Physical Information". Deleted all statements that are now covered as requirements in Section 3. Revised content to reflect new format.
2.2	Renamed subsection to "Administrative Information" and revised subsection discussions to address Safety (Section 2.2.1), Regulatory (Section 2.2.2), Post-Commissioning/Maintenance (Section 2.2.3), and Schedule (Section 2.2.4). Configuration management is covered in Section 3.
2.2.1	Renamed subsection to "Safety Information". Moved appropriate paragraphs into this section. Interface Schedule moved to Section 2.2.4.
2.2.2	Renamed subsection to "Regulatory Information". Moved appropriate paragraphs into this section. Updated effluent volume.
2.2.3	Renamed subsection to "Post-Commissiong/Maintenance". Any requirements listed in this section in Rev 7 were moved to Section 3. Added statements on reliability, availability, maintainability, and inspectability (RAMI), and added reference for the WTP NLD operating manual.
2.2.4	Added statement to reference the DFLAW Integrated Program Schedule. Deleted Rev 7 milestones as project schedules have changed signficantly.
2.2.5	Deleted. Interface logic from Rev 7 is no longer applicable.
2.2.6	Deleted. RAMI is covered in Section 2.2.3.
2.3	Renamed subsection to "Acceptance Criteria". Deleted bullet for TEDF Table 1, which is not acceptance criteria. Deleted specific requirements that are covered in Section 3.
2.3.1	Deleted. Content moved to Section 2.2.2.
2.4	Deleted. Configuration management is covered in Section 3. Deleted Rev 7 Table 3.
3	Added new section, "Requirements," and subsections to address technical, activity level flow down, and programmatic requirements for ICD 05.
3.1	Added to address Technical Requirements (Design Criteria). Content is from 24590-WTP-ICF-MGT-18-0001.
3.2	Added to address Activity Level Requirements. Content is from 24590-WTP-ICF-MGT-18-0002.
3.3	Added to address Programmatic Requirements. Content is from 24590-WTP-ICF-MGT-18-0003.
4	Added new section, "Requisite Interface Items," and subsections to address WTP Contractor and TOC interface items.
4.1	Added to address WTP Contractor Requisite Interface Items. Content is from 24590-WTP-ICF-MGT-18-0003.

Revision Description

ICD Section	Description
4.2	Added to address TOC Interface Items as a placeholder.
5	Moved “References” from Section 3 in Rev 7.
5 and throughout the ICD	Various references were deleted and added to support the update of this revision.
Appendix A	Re-labeled as Issues and Open Items. Changed table format to align with ICD Action Item List.
Appendix B	Deleted. Closed ICD issues to be identified in Appendix A.
Appendix C	Deleted. New open items to be listed in Appendix A.

Contents

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Acronyms

ARP	alarm response procedure
BAT/AKART	best available technology/all known, available, and reasonable treatment
BNI	Bechtel National, Incorporated
BOF	Balance of Facilities
DFLAW	direct feed low-activity waste
DOE	US Department of Energy
ETF	Effluent Treatment Facility
FFS	Fluor Federal Services
ICD	interface control document
LERF	Liquid Effluent Retention Facility
MSC	Mission Support Contractor
NLD	Non-Radioactive Liquid Waste Disposal System
ORP	US Department of Energy, Office of River Protection
P&ID	piping and instrumentation diagram
PRC	Plateau Remediation Contractor
PROFIBUS	process field bus
RAM	requirement area manager
RAMI	reliability, availability, maintainability, and inspectability
SOM	system operating manual
TEDF	Treated Effluent Disposal Facility
TOC	Tank Operations Contractor
WAC	Washington Administrative Code
WRPS	Washington River Protection Solutions
WTCC	Waste Treatment Completion Company
WTP	Hanford Tank Waste Treatment and Immobilization Plant

1 Interface Description

1.1 Interface Scope

This Interface Control Document (ICD) describes the physical and administrative interactions for managing the transfer of nonradioactive, nondangerous liquid effluent from the Hanford Tank Waste Treatment and Immobilization Plant (WTP) to the 200 Area Treated Effluent Disposal Facility (TEDF). The WTP Contractor interfaces with the Tank Operations Contractor (TOC) for this transfer.

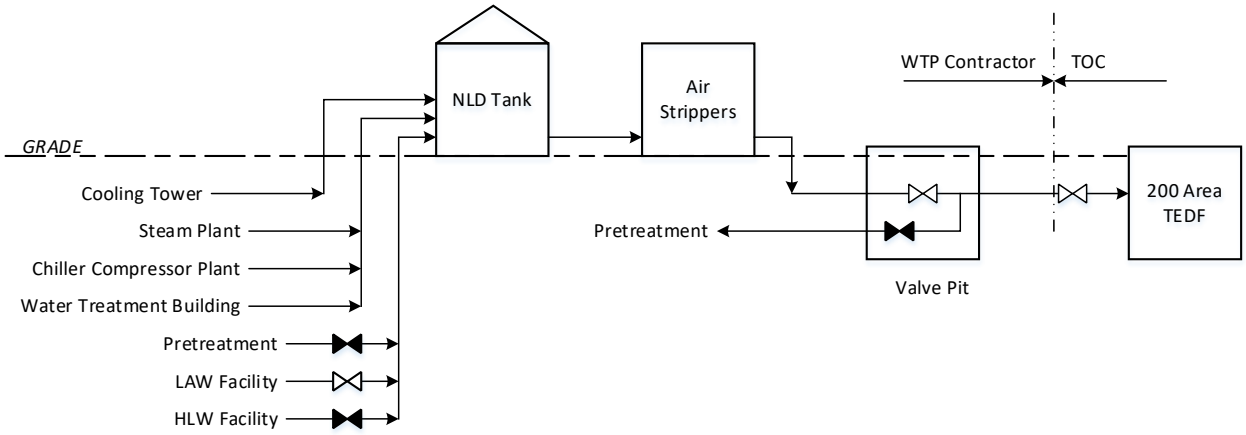
Nonradioactive, nondangerous liquid effluent is non-contaminated effluent that meets interface acceptance criteria for discharge directly to the TEDF. The WTP Contractor manages the nonradioactive, nondangerous liquid effluent discharges using the Balance of Facilities (BOF) nonradioactive liquid waste disposal (NLD) system. For the purposes of this ICD, nonradioactive, nondangerous liquid effluent is referred to as "NLD effluent".

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

1.2 System Overview

The interface for the transfer of NLD effluent during DFLAW operation is illustrated in Figure 1.

Figure 1 Interface Block Diagram



The BOF NLD system receives NLD effluent from the Low-Activity Waste Facility and other BOF buildings through underground headers. During DFLAW operations, the Pretreatment Facility and the High-Level Waste Facility are isolated from the BOF NLD system. The effluent is collected in the NLD storage tank. The BOF NLD system relies on the upstream facilities to ensure the effluent it receives is uncontaminated. When the effluent is discharged from the NLD storage tank, it is pumped through an air stripper to remove trihalomethanes generated from water treatment processes. The effluent pump is controlled on the NLD storage tank high and low level setpoints with a preset flow rate. The outlet of the air stripper is pumped directly to the TEDF.

The NLD effluent discharged from the WTP consists of reverse osmosis reject stream, cooling tower blowdown, boiler blowdown, and miscellaneous uncontaminated drains. The predominant sources of the NLD effluents are potable and raw water (supplied by the US Department of Energy [DOE]) that the

WTP Contractor will condition (for example, add biocide, corrosion inhibitor, caustic solution) for use at the WTP.

The TEDF is an underground pipe wastewater collection system that receives, conveys, and disposes of uncontaminated or treated effluent from the Hanford 200 East and 200 West Area facilities. The major components of the TEDF include three pumping stations, one disposal sample station, two five-acre disposal ponds, and interconnecting piping. The TEDF does not have any treatment capability or retention capacity. The TEDF is operated by the TOC's Effluent Treatment Facility (ETF) organization. The document that defines requirements and responsibilities for organizations connected to the TEDF is the *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117 (WRPS 2016a), which is referred to as the TEDF ICD.

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 Nonradioactive, Nondangerous, Liquid Effluents Interface

Interface Function	WTP Responsibility	TOC Responsibility
Provide pipeline for NLD effluent transfer	Provide pipeline from WTP NLD system to interface Node 9 as identified on the *Interface Control Drawing* (BNI 2018c).	Provide pipeline from interface Node 9 to the TEDF.
Provide data communication for NLD effluent transfer	Provide data signals from the WTP control network to interface Node 18 as identified on the *Interface Control Drawing* (BNI 2018c).	Connect data signals from interface Node 18 to the ETF control room. Advise the WTP Contractor to modify or suspend discharges based on data received.
Establish acceptance criteria for NLD effluent transfer	Ensure effluent transfers meet acceptance criteria as listed in the TEDF ICD (WRPS 2016a).	Modify the TEDF ICD (WRPS 2016a) as needed.
Establish sampling and analysis to support NLD effluent transfer	Provide sampling location(s) in the NLD system. Collect and analyze samples per the TEDF ICD (WRPS 2016a). Provide results to TOC.	Review sample results.
Communicate changes to NLD effluent	Request TEDF approval for changed and new sources.	Review and approve changes submitted by the WTP Contractor.
Facilitate NLD effluent transfers during WTP construction	Submit batch discharge requests.	Review and approve batch discharge requests.
Coordinate operational changes/shutdowns	Notify the TOC of off-normal events affecting the TEDF.	Notify the WTP Contractor of the TEDF unavailability.

1.4 Special Interface Roles

N/A

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

The *Interface Control Drawing*, 24590-WTP-B2-C12T-00001 (BNI 2018c), provides the physical interface location for connection of the WTP effluent pipeline to TEDF, shown as Node 9. Hydrostatic testing of the WTP tie-in to TEDF was completed under test package BPT0010 and documented on pressure test data sheet 24590-BOF-PPTR-CON-04-0074 (BNI 2004b). The test was performed on October 11, 2004.

The physical point of connection between the WTP Contractor fiber-optic telecommunication lines and the fiber-optic telecommunication lines provided by the TOC is shown as Node 18 on the *Interface Control Drawing* (BNI 2018c). The connection point for the fiber-optic telecommunications lines between Node 18 and TOC ETF operations is in Room 207 of the ETF (2025E).

The performance specification (FFS 2001) for the liquid effluent transfer systems identifies the control and administrative interface system architecture. Drawings H-2-88766 Sheet 5, *P&ID LERF-WTP Interface* (FDN 2008) and H-2-88813 Sheet 3, *Electrical/Instm Interconn & Wiring Diag LERF Instm Bldg* (DOE 2008) depict the control interface between the WTP and the TEDF.

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 management 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

The TEDF is regulated by Washington State Department of Ecology *State Waste Discharge Permit Number ST0004502* (Ecology 2012). A Best Available Technology/All Known, Available, and Reasonable Treatment (BAT/AKART) report for the WTP nonradioactive, nondangerous liquid effluents has been issued (BNI 2003a). The BAT/AKART engineering study was subsequently amended (BNI 2003b and BNI 2004a) to support revisions to the TEDF *State Waste Discharge Permit ST0004502* (Ecology 2012). Addendum No. 3 to the BAT/AKART (BNI 2010) was submitted in December of 2010.

The *State Waste Discharge Permit ST0004502* (Ecology 2012) was revised and issued on June 25, 2012 to include WTP as a waste generator.

Strict controls at the generating facilities are essential to operate in compliance with the *State Waste Discharge Permit ST0004502* (Ecology 2012). The TEDF ICD (WRPS 2016a) defines the requirements and responsibilities for operation of TEDF and the generators that currently discharge liquid effluents to TEDF. The TEDF ICD is typically updated to reflect changes in permit conditions and wastewater sources. The requirements which apply to the WTP discharges are contained in the TEDF ICD.

Hydrotesting, construction, maintenance and startup activities at the WTP are expected to generate wastewater for disposal. These discharges are covered by the *State Waste Discharge Permit Number ST0004511* (Ecology 2014a). The types of discharges allowed are described in the *Fact Sheet for State Waste Discharge Permit No. ST0004511* (Ecology 2014b). Wastewater from these activities is discharged to the soil column subject to the permit limitations, unless it meets the TEDF waste acceptance criteria and can reasonably be discharged to TEDF.

The estimated total annual volume of effluent discharged to TEDF during DFLAW operation is ~63 million gallons. During WTP Pretreatment operation, the total annual volume is estimated to be ~209 million gallons (BNI 2017g).

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 manuals for the WTP NLD system, including routine and non-routine operations, operating ranges, authorizations and checklists, is listed in *BOF Non-Radioactive Liquid Waste Disposal System Operating Manual*, 24590-BOF-NLD-SOM-0001 (WTCC 2018b).

2.2.4 Interface Schedule

Refer to the One System DFLAW Integrated Program Schedule for monitoring appropriate interface schedule milestones.

2.3 Acceptance Criteria

As a generated discharge to the TEDF, the waste stream composition from WTP complies with the requirements of the TEDF ICD (WRPS 2016a). WTP compliance with the TEDF ICD supports TEDF compliance with the discharge requirements and conditions of the *State Waste Discharge Permit ST0004502* (Ecology 2012).

Discharge parameters and limits for WTP effluents are identified in these TEDF ICD tables:

- Table 2 – Generating Facilities Continuous On-Line Monitoring Requirements
- Table 3 – 200 Area Treated Effluent Disposal Facility Generating Facilities Sampling and Analytical Requirements (see Section 3.2.1.1)
- Table 4 – Minimum Generating Facilities Sampling Requirements (see Section 3.2.1.2)

The estimated composition of the nonradioactive, nondangerous liquid effluent was provided in *WTP BAT/AKART Addendum No. 3* (BNI 2010).

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.

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

For the WTP Contractor, technical requirements are managed in accordance with *Technical Requirements Management*, 24590-WTP-3DP-G04B-00004 (BNI 2016a). Any changes to the requirements in this sub-section are reviewed with the WTP Manager of Engineering.

3.1.1.1 The Waste Treatment Plant non-radioactive liquid waste piping tie-in at the interface point shall be compatible with the Treated Effluent Disposal Facility pipeline provided by DOE.

Requirement Basis: A pipeline has been provided by DOE (Project W-519-P1) for the non-radioactive, non-dangerous liquid effluents from the WTP Site boundary to the 200 Area TEDF. The piping interface point is shown as Node 9 on the *Interface Control Drawing* (BNI 2018c). The TEDF side of the interface point consists of a buried DN200 (8-inch) polyvinyl chloride pressure pipe, pipe code P-1 (Line J) terminating at a DN150 gate valve (valve 68J-GV-01) per Hanford drawing H-2-830102, Sheet 2 (DOE 2001).

Configuration Management Document(s):

Requirement Source(s):

- *Performance Specification, Liquid Effluent Transfer System*, W-519-P1, Rev 1 (FFS 2001)
- *Interface Control Drawing*, 24590-WTP-B2-C12T-00001, Rev 4 (BNI 2018c)
- *W-519 Site/Utility Systems Piping Sections and Details*, H-2-830102, Sheet 2, Rev 2 (DOE 2001)

Implementation:

- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD-TK-0000*1, 24590-BOF-M6-NLD-00002001, Rev 2 (BNI 2017a)
- *MS Line List for P&ID 24590-M6-NLD-00002001*, 24590-BOF-M6WX-NLD-00002001, Rev 2 (BNI 2017b)

3.1.1.2 The Waste Treatment Plant non-radioactive liquid waste disposal system maximum discharge rate shall be 500 gpm (4-hour average).

Requirement Basis: Table 2 of the *200 Area Treated Effluent Disposal Facility Interface Control Document* (WRPS 2016a), establishes the maximum allowable flowrate from WTP at 500 gpm (4-hour average).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD Pump House,* 24590-BOF-M6-NLD-00002003, Rev 1 (BNI 2014b)
- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD-VSL-0008A/B,* 24590-BOF-M6-NLD-00003001, Rev 3 (BNI 2017e)
- *Functional Diagram – BOF Storage Tank NLD-TK00001 pH, Conductivity, and Flow,* 24590-BOF-J3-NLD-01003, Rev 2 (BNI 2015a)
- *Functional Diagram – BOF NLD-VSL-00008A Level, Temperature, and Differential Pressure*, 24590-BOF-J3-NLD-01005, Rev 0 (BNI 2015b)
- *Logic Diagram – NLD-VSL-00008A – Pump and Blower,* 24590-BOF-J3-NLD-00008, Rev 1, (BNI 2017d)

3.1.1.3 The Waste Treatment Plant non-radioactive liquid waste effluent design pressure shall be a maximum of 100 psig.

Requirement Basis: The design pressure of the DOE Project W-519-P1 pipeline from the Waste Treatment Plant site boundary to the 200 Area Treated Effluent Disposal Facility is 100 psig (FFS 2001, Appendix A, Pipe Code P-1).

Configuration Management Document(s):

Requirement Source(s):

- *Performance Specification, Liquid Effluent Transfer System*, W-519-P1, Rev 1 (FFS 2001)

Implementation:

- *P&ID - BOF Non-Radioactive Liquid Waste Disposal System NLD-TK-00001*, 24590-BOF-M6-NLD-00002001, Rev 2 (BNI 2017a)
- *MS Line List for P&ID 24590-M6-NLD-00002001*, 24590-BOF-M6WX-NLD-00002001, Rev 2 (BNI 2017b)

3.1.1.4 The Waste Treatment Plant non-radioactive liquid waste effluent design temperature shall be a maximum of 100 °F.

Requirement Basis: The design temperature of the DOE Project W-519-P1 pipeline from the Waste Treatment Plant site boundary to the 200 Area Treated Effluent Disposal Facility is 100 °F (FFS 2001, Appendix A, Pipe Code P-1).

Configuration Management Document(s):

Requirement Source(s):

- *Performance Specification, Liquid Effluent Transfer System*, W-519-P1, Rev 1 (FFS 2001)

Implementation:

- *P&ID - BOF Non-Radioactive Liquid Waste Disposal System NLD-TK-00001*, 24590-BOF-M6-NLD-00002001, Rev 2 (BNI 2017a)
- *MS Line List for P&ID 24590-M6-NLD-00002001*, 24590-BOF-M6WX-NLD-00002001, Rev 2 (BNI 2017b)

3.1.1.5 Sample port(s) shall be provided for sampling the non-radioactive liquid waste effluent downstream of the trihalomethane removal process.

Requirement Basis: Periodic sampling results of non-radioactive liquid waste effluent is needed by the Treated Effluent Disposal Facility to validate effluent is within *State Discharge Permit 0004502* (Ecology 2012) limits. To obtain representative effluent samples, the sampling location(s) need to be downstream of the final Waste Treatment Plant processing step.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD-VSL-0008A/B*, 24590-BOF-M6-NLD-00003001, Rev 3 (BNI 2017e)
- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD Pump House*, 24590-BOF-M6-NLD-00002003, Rev 1 (BNI 2014b)

3.1.1.6 The Waste Treatment Plant non-radioactive liquid waste disposal system storage tank (NLD-TK-00001) shall provide 24 hours of storage capacity.

Requirement Basis: Sufficient tank buffer capacity is necessary to compensate for temporary unavailability of the Treated Effluent Disposal Facility, or in the event of unanticipated, infrequent surge volumes due to plant maintenance or operational requirements. A trade-off study was conducted in 1998 (BNFL 1998) which determined that closure of the Treated Effluent Disposal Facility for more than a 24-hour period is unlikely and determined that such an occurrence for more than a 24-hour period would probably mean there is a major failure at the Treated Effluent Disposal Facility and that the discharge capability will be unavailable for an extended duration. Based on this study, DOE provided technical direction to provide a 24-hour buffer capacity (DOE 1999).

Configuration Management Document(s):

Requirement Source(s):

- *Limited Authorization to Proceed with Incorporation of System Optimization Study Results in Part B-1*, 99-DPD-040, 30 June 1999 (DOE 1999)

Implementation:

- *Non-Radioactive Liquid Waste Disposal Tank NLD-TK-00001 Sizing*, 24590-BOF-M6C-NLD-00005, Rev 1 (BNI 2014a)

3.1.1.7 The Waste Treatment Plant non-radioactive liquid waste disposal system shall provide monitoring capability for discharge flowrate, pH, and conductivity.

Requirement Basis: Continuous monitoring of NLD discharge flowrate, pH, and conductivity is used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit 0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD Pump House*, 24590-BOF-M6-NLD-00002003, Rev 1 (BNI 2014b)

3.1.1.8 Fiber optic telecommunications infrastructure shall be provided compatible with the Tank Operating Contractor infrastructure for the transfer of flowrate, pH, and conductivity data to the WTP/TOC telecommunications interface point using Process Field Bus (PROFIBUS) communication technology.

Requirement Basis: Continuous monitoring of NLD discharge, flowrate, pH, and conductivity is used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit 0004502* (Ecology 2012). Data transmission from Waste Treatment Plant instruments to the Node 18 telecommunications point is Waste Treatment Plant responsibility. The Node 18 telecommunications interface point is shown on the *Interface Control Drawing* (BNI 2018c) near Pole E2476 in junction box 6FX2 (provided by others). Per Hanford drawing H-2-88766, Sheet 5 (FDN 2008) and H-2-88813, Sheet 3 (DOE 2008), a single mode fiber optic cable in conjunction with PROFIBUS digital communications protocol is being used for the Tank Operating Contractor side of the interface.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)
- *Interface Control Drawing*, 24590-WTP-B2-C12T-00001, Rev 4 (BNI 2018c)
- *P&ID – LERF-WTP Interface*, H-2-88766, Sheet 5, Rev 2 (FDN 2008)
- *Electrical/Instm Interconn & Wiring Diag LERF Inst Bldg*, H-2-88813, Sheet 3, Rev 1 (DOE 2008)

Implementation:

- *P&ID – BOF Non-Radioactive Liquid Waste Disposal System NLD Pump House*, 24590-BOF-M6-NLD-00002003, Rev 1 (BNI 2014b)

- *Functional Diagram – BOF Storage Tank NLD-TK00001 pH, Conductivity, and Flow*, 24590-BOF-J3-NLD-01003, Rev 2 (BNI 2015a)
- *Logic Diagram – BOF NLD to TEDF Datalink*, 24590-BOF-J3-NLD-00004, Rev 2 (BNI 2014c)
- *River Protection Project Waste Treatment Plant Overall Facility Network Infrastructure Block Diagram*, 24590-BOF-J1-FNJ-00001, Rev 13 (BNI 2017c)
- *System Design Document for BOF Building 54/84 – Non-Dangerous, Non-Radioactive Effluent Facility, and Fire Water Pump House*, 24590-BOF-PISW-J-08-0004-01, Rev 5 (BNI 2017f)

3.1.2 TOC Technical Requirements

3.1.2.1 Fiber optic telecommunications infrastructure shall be provided between the telecommunications interface point and the Effluent Treatment Facility to receive flowrate, pH, and conductivity data via PROFIBUS communication technology from the Waste Treatment Plant.

Requirement Basis: Continuous monitoring of NLD discharge, flowrate, pH, and conductivity is used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit 0004502* (Ecology 2012). Data transmission from the Node 18 telecommunications point to the Effluent Treatment Facility is Tank Operating Contractor responsibility. The Node 18 telecommunications interface point is shown on the *Interface Control Drawing* (BNI 2018c) near Pole E2476 in junction box 6FX2.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)
- *ICD-5: NLD Effluent Telecommunication Requirements*, 24590-WTP-ICF-ENG-04-0005, (BNI 2004c)
- *Interface Control Drawing*, 24590-WTP-B2-C12T-00001, Rev 4 (BNI 2018c)

Implementation:

- *P&ID LERF - WTP Interface*, H-2-88766, Sheet 5, Rev 2 (FDN 2008)
- *Electrical/Instm Interconn & Wiring Diag LERF Inst Bldg* H-2-88813, Sheet 3, Rev 1 (DOE 2008)
- *Special Circuit #510-0340*, 510-0340 (LMSI 2016)

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

For the WTP Contractor, activity level requirements are managed in accordance with *Activity Level Flow Down of Requirements Applicable to Commissioning Phase Activities*, 24590-WTP-GPP-RAOP-OP-0003 (BNI 2018b).

3.2.1.1 The Waste Treatment Plant non-radioactive non-dangerous liquid waste disposal system storage tank shall be sampled and analyzed in accordance with Table 2.

Table 2 Nonradioactive, Nondangerous Liquid Effluent Sampling and Analytical Requirements

Parameter (Note 1)	**Analytical Method** (Note 2)	**Practical Quantitation Limits** (Note 3)	**Indicator analysis**	**Expanded analysis**	**Target limits**	**References**
Anions						
Chloride	EPA 300.0	1,000 µg/L	X	X	58,000 µg/L	S2 of ST 4502 (Ecology 2012)
Nitrate (as N)	EPA 300.0	100 µg/L	X	X	620 µg/L	S2 of ST 4502 (Ecology 2012)
Sulfate	EPA 300.0	500 µg/L	X	X	No Target Limit	S2 of ST 4502 (Ecology 2012)
Metals						
Arsenic (Total)	EPA 200.8	2 µg/L	X	X	15 µg/L	S2 of ST 4502 (Ecology 2012)
Cadmium (Total)	EPA 200.8	0.5 µg/L	X	X	5 µg/L	S2 of ST 4502 (Ecology 2012)
Chromium (Total)	EPA 200.8	1 µg/L	X	X	20 µg/L	S2 of ST 4502 (Ecology 2012)
Iron (Total)	SW-846 6010	100 µg/L	X	X	300 µg/L	S2 of ST 4502 (Ecology 2012)
Lead (Total)	EPA 200.8	0.5 µg/L	X	X	10 µg/L	S2 of ST 4502 (Ecology 2012)
Manganese (Total)	EPA 200.8	1 µg/L	X	X	50 µg/L	S2 of ST 4502 (Ecology 2012)
Mercury (Total)	EPA 245.1	1 µg/L	X	X	2 µg/L	S2 of ST 4502 (Ecology 2012)
Miscellaneous						
Total Dissolved Solids	EPA-600 160.1	10,000 µg/L	X	X	500,000 µg/L	S2 of ST 4502 (Ecology 2012)
Semi-volatiles						
Bis (2-ethylhexyl phthalate)	SW-846 8270 or 625	5 µg/L		X	10 µg/L	S2 of ST 4502 (Ecology 2012)
Volatiles						
Carbon tetrachloride	SW-846 8260	5 µg/L		X	5 µg/L	S2 of ST 4502 (Ecology 2012)
Chloroform	SW-846 8260	5 µg/L		X	7 µg/L	S2 of ST 4502 (Ecology 2012)
Methylene chloride	SW-846 8260	5 µg/L		X	5 µg/L	S2 of ST 4502 (Ecology 2012)
Trihalomethanes (Total)	SW-846 8260	10 µg/L		X	20 µg/L	S2 of ST 4502 (Ecology 2012)
Radionuclides						
Gross alpha	EPA 906.0 or lab specific	NA		X	15 pCi/L (Note 4)	S2 of ST 4502 (Ecology 2012)
Gross beta	EPA 906.0 or lab specific	NA		X	15 pCi/L (Note 4)	S2 of ST 4502 (Ecology 2012)

Notes:

1 The list of parameters contains all the parameters listed in S1 and S2 of ST0004502 (Ecology 2012) except Tritium, Oil & Grease, pH, Conductivity, and Flow. Tritium and Oil & Grease will be analyzed on an as-needed basis. Conductivity, pH, and Flow are continuously monitored.

2 Other analytical methods can be substituted if the method used produces measurable results in the sample and EPA has listed it as a Part 136 EPA-approved method or the method is accredited by the Department of Ecology.

3 Practical Quantitation Limit is the lowest concentration of a substance that can reliably be measured, within specific limits of precision, during routine laboratory conditions.

4 Target Limit was taken from Groundwater Standards (WAC 173-200) since no limit was included in ST0004502 (Ecology 2012).

Requirement Basis: The defined analytical tests are used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Sampling NLD System*, 24590-BOF-NLD-SOM-0001-02-008, Rev 2 (WTCC 2018c)
- *MOA 24590-MOA-WRPS-BNI-00006 – Fully Executed Task Order 2016-004 Rev 1*, CCN 290182 (BNI 2016b)

3.2.1.2 The Waste Treatment Plant non-radioactive non-dangerous liquid waste disposal system effluent shall be sampled at the frequencies identified in Table 3.

Table 3 Minimum Sampling Requirements

Effluent (Note 1)	**Parameters** (Note 2)	**Frequency** (Note 3)
Waste Treatment Project	Indicator	1 per 3 months
	Expanded	1 per 12 months

Notes:

1 Grab samples will be taken per approved sampling procedure. A grab sample is an individual sample collected over a fifteen minute or less period.

2 Indicator and expanded parameters are defined in Table 2 and can be combined when the sampling frequency coincides.

3 Sampling frequency is based on operating time periods and effluent quality. For example, waste streams that were active only for six months of the year are sampled only twice.

Requirement Basis: The defined sampling events are used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Sampling NLD System*, 24590-BOF-NLD-SOM-0001-02-008, Rev 2 (WTCC 2018c)

3.2.1.3 The monitoring functions for flow, pH, and conductivity shall be operational when Waste Treatment Plant non-radioactive non-dangerous liquid effluent transfers are initiated. The Control Room integrated control network shall be continuously monitored during transfers for alarms (out of range flow and pH). Actions to be taken as a result of these readings are described in section 3.2.1.6. Continuous means uninterrupted except for brief lengths of time for calibration, for power failure, or for unanticipated repair or maintenance.

Requirement Basis: Continuous monitoring of NLD discharge flowrate, pH, and conductivity is used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the Waste Treatment Plant effluent discharge is within the State Discharge Permit ST0004502 (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Transferring NLD Storage Tank Contents to TEDF*, 24590-BOF-NLD-SOM-0001-02-004, Rev 5 (WTCC 2018d)
- *Transferring NLD Storage Tank Contents Locally*, 24590-BOF-NLD-SOM-0001-03-002, Rev 4 (WTCC 2018e)
- *BOF Non-Radioactive Liquid Waste Disposal System ARP Manual*, 24590-BOF-NLD-ARP-0001, Rev 3 (WTCC 2018f)

3.2.1.4 Indicator and Expanded sample data shall be provided to the Tank Operations Contractor on the frequency basis identified in Table 3.

Requirement Basis: The test results are used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Periodic Maintenance and Surveillance (P/MS) Task Form – Quarterly Compliance Sampling for NLD-B-01*, 24590-WTP-PMTF-CMNT-17-0174 (WTCC 2017)

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

1) The inoperable parameter (pH and/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, pH, or conductivity are interrupted, alternative monitoring methods shall be used to capture the data. This approach 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 Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Discharge Permit ST0004502* (Ecology 2012) limits.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Transferring NLD Storage Tank Contents Without In-Line Instrumentation,* 24590-BOF-NLD-SOM-0001-03-003, Rev 4 (WTCC 2018g)
- *BOF Non-Radioactive Liquid Waste Disposal System ARP Manual*, 24590-BOF-NLD-ARP-0001, Rev 3 (WTCC 2018f)
- *pH Analysis,* 24590-BOF-COPS-NOP-0001-02-001, Rev 1 (WTCC 2018h)
- *Conductivity Analysis,* 24590-BOF-COPS-NOP-0001-02-003, Rev 1 (WTCC 2018i)

3.2.1.6 The status of Waste Treatment Plant non-radioactive non-dangerous liquid waste transfers to TEDF shall be communicated to the Effluent Treatment Facility Control Room as follows:

While the WTP-to-TEDF interface valve 68J-GV-01is locked closed to prohibit continuous transfers, the ETF Control Room (509-373-9000) shall be notified after each discharge termination.

The ETF Control Room (509-373-9000) shall be notified upon the occurrence of the following conditions:

- Sampling data exceeds the target limits listed in Section 3.2.1.1 and if TEDF Engineering has not already notified the facility.
- Monitoring indicates that the pH is below 6.5 or above 8.5.
- Monitoring indicates that the steady-state transfer rate exceeds 500 gpm. This rate limit does not apply to transient startup operations required to initiate effluent transfers.
- Scheduled and unscheduled continuous on-line monitoring interruptions.
- Any overflow or spill into the NLD system.

Requirement Basis: Prompt communication regarding the status of all effluent transfers is needed by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Waste Discharge Permit ST0004502* (Ecology 2012). While the WTP-to-TEDF

interface valve 68J-GV-01 is locked closed to prohibit continuous transfers, WTP is required to contact TEDF after each discharge to inform TEDF when to close and lock the interface valve. The valve is to be opened prior to transfers when scheduled with TEDF. The TEDF ICD (WRPS 2016a) states that when all monitoring systems are operational and ongoing discharge approvals are in place, valve 68J-GV-01 may be left open. See the requirement in Section 3.3.1.3.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- *Transferring NLD Storage Tank Contents to TEDF,* 24590-BOF-NLD-SOM-0001-02-004, Rev 5 (WTCC 2018d)
- *Transferring NLD Storage Tank Contents Locally,* 24590-BOF-NLD-SOM-0001-03-002, Rev 4 (WTCC 2018e)
- *Transferring NLD Storage Tank Contents Without In-Line Instrumentation,* 24590-BOF-NLD-SOM-0001-03-003, Rev 4 (WTCC 2018g)
- *BOF Non-Radioactive Liquid Waste Disposal System ARP Manual,* 24590-BOF-NLD-ARP-0001, Rev 3 (WTCC 2018f)

3.2.2 TOC Activity Level Requirements

No activity level requirements were identified for the TOC.

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

For the WTP Contractor, programmatic requirements are managed per *Requirements Management,* 24590-WTP-GPP-RARM-RM-00001 (BNI 2018a).

3.3.1.1 Obtain TEDF approval prior to discharge of effluent due to changes in existing sources and/or from new sources including one-time non-routine discharges. Provide TEDF with the following information as appropriate:

- Source of discharge
- Any alternatives to the discharge such as reuse, storage, or recycle of water
- Total volume of effluent expected to be discharged
- Effluent quality data which may be from process knowledge
- Engineering report with plans and specifications supporting the items listed above.

Requirement Basis: Changes to the baseline design that are outside those identified in the permit need to be evaluated prior to NLD discharge to manage TEDF discharge compliance

with the *State Waste Discharge Permit ST0004502* (Ecology 2012). Significant changes to the baseline design may require modification of the discharge permit. This requirement is applicable to effluents within the scope of the ST0004502 permit.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering Requirement Area Manager (RAM) as identified in *Designation of Requirement Area Managers and Subject Matter Experts*, 24590-WTP-LIST-RARM-RM-0001 (BNI 2018d).

3.3.1.2 Notify ETF Control Room (509-373-9000) within 24 hours when temporary management controls or deviations from normal operations that potentially affect the interface are planned.

Requirement Basis: Prompt communication will help provide time for TEDF to evaluate the need for remedial action in response to an off-normal event to manage TEDF discharge compliance with the *State Waste Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.1.3 Submit a TEDF Batch Discharge Request form two weeks in advance of construction and maintenance water discharges from WTP into NLD Tank under *State Waste Discharge Permit ST0004511* (Ecology 2014a). Obtain TEDF approval for discharge.

Requirement Basis: TEDF requires two weeks to review the Batch Discharge Request to ensure that the planned discharge is in alignment with *State Waste Discharge Permit ST0004511* (Ecology 2014a). This requirement is applicable to effluents within scope of the ST0004511 permit. The Batch Discharge Request form is available from *Liquid Waste Processing Facility Waste Acceptance Criteria*, HNF-3172 (WRPS 2016b).

Configuration Management Document(s):

Requirement Source(s):

- *Wastewater Management*, 24590-WTP-GPP-RAEV-EV-0031, Rev 1 (WTCC 2018a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.1.4 Modify or suspend discharges to TEDF within safe and compliant limits if requested by TEDF.

Requirement Basis: This requirement is a contingency to allow TEDF to ask WTP to suspend or modify transfers for potential safety or permit issues.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.1.5 Initiate additional monitoring and/or sampling as requested by TEDF in off-normal and other emergency situations.

Requirement Basis: This requirement is a contingency to allow TEDF to ask WTP to increase effluent monitoring and sampling to provide additional data to investigate and resolve potential permit issues.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.1.6 Coordinate with TEDF as required to establish any lock and tag boundaries to support maintenance or repair activities.

Requirement Basis: Maintenance of the valve at the WTP/TEDF interface will require coordination by both parties to ensure a safe working environment.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.1.7 Maintain telecommunication lines between WTP facilities and Node 18.

Requirement Basis: The telecommunication link provides real time monitoring data to the ETF Control Room. This capability provides information in managing TEDF disposal point compliance. This datalink is required to be operational during all transfers.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) and traceability shall be established within the WTP Requirements Management Program (i.e., DOORS). The current implementation status can be obtained from the Plant Engineering RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts* (BNI 2018d).

3.3.2 TOC Programmatic Requirements

All TEDF/TOC requirements are included in this section as programmatic requirements. The requirements are not decomposed further into technical or activity level flow down requirements.

3.3.2.1 Operate and maintain the TEDF downstream from the generator interface points in compliance with *State Waste Discharge Permit ST0004502* (Ecology 2012). Determine any necessary permit changes associated with new waste streams. Facilitate Ecology's approval if needed. Notify the WTP Contractor of changes to regulatory permits and/or TEDF operating conditions that affect this interface.

Requirement Basis: TOC is responsible for overall operation and management of TEDF under *State Waste Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts*, (BNI 2018d).

3.3.2.2 Authorize effluent discharge into TEDF from WTP when sources have changed in flow or quality (including one-time non-routine discharges).

Requirement Basis: TOC is responsible for overall operation and management of TEDF under *State Waste Discharge Permit ST0004502* (Ecology 2012) and will evaluate effluent discharges that may potentially deviate from the permit.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document*, RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts*, (BNI 2018d).

3.3.2.3 Authorize batch construction and maintenance water discharges into TEDF from WTP under *State Discharge Permit ST0004511* (Ecology 2014a).

Requirement Basis: The TOC is responsible for overall operation and management of TEDF in alignment with *State Waste Discharge Permit ST0004511* (Ecology 2014a). All WTP non-dangerous non-radioactive effluent discharges will be performed in a batch mode during the construction phase.

Configuration Management Document(s):

Requirement Source(s):

- TBD

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts*, (BNI 2018d).

3.3.2.4 Notify the WTP Contractor one month in advance of planned TEDF shutdowns.

Requirement Basis: Advance notice of pending TEDF shutdowns will give WTP time to make accommodations, such as a full blowdown of the BOF cooling tower basin, to avoid adverse impacts to WTP operations.

The BOF NLD tank sizing calculation recommends an advance notification of 15 days. Based on this recommendation, both WTP and TOC have agreed that a notification period of one month is considered to be reasonable and practical. The one-month period is established to allow WTP operations to reduce NLD waste water generation and storage in preparation for an extended period where WTP cannot transfer to TEDF.

Configuration Management Document(s):

Requirement Source(s):

- *Non-Radioactive Liquid Waste Disposal Tank NLD-TK-00001 Sizing,* 24590-BOF-M6C-NLD-00005 (BNI 2014a)

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts,* (BNI 2018d).

3.3.2.5 Make a written or verbal request for additional generator waste stream sampling data in off-normal and other emergency situations. Review the volume and composition information of liquid effluents discharged by the WTP contractor.

Requirement Basis: The test results are used by the Treated Effluent Disposal Facility to manage TEDF discharge compliance with the *State Waste Discharge Permit ST0004502* (Ecology 2012).

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts,* (BNI 2018d).

3.3.2.6 Notify the WTP Contractor (Shift Duty Manager (509-420-3597) to immediately suspend transfer of effluent upon identification of any TEDF issues that affect receipt.

Requirement Basis: The effluent transfer must be terminated in the event of an unplanned situation outside the WTP site boundary that could present an unsafe or undesirable condition.

Configuration Management Document(s):

Requirement Source(s):

- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117 (WRPS 2016a)

Implementation:

- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts,* (BNI 2018d).

3.3.2.7 Coordinate with generators as required to establish any lock and tag boundaries to support maintenance or repair activities.

Requirement Basis: Maintenance of the valve at the WTP/TEDF interface will require coordination by both parties to ensure a safe working environment.

Configuration Management Document(s):

Requirement Source(s):
- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:
- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts,* (BNI 2018d).

3.3.2.8 Maintain the telecommunication lines between Node 18 and ETF via the LERF Instrument Building 242AL-71 PLC.

Requirement Basis: The telecommunication link provides real time monitoring data to the ETF Control Room. This capability provides information in managing TEDF disposal point compliance. This datalink is required to be operational during all transfers.

Configuration Management Document(s):

Requirement Source(s):
- *200 Area Treated Effluent Disposal Facility Interface Control Document,* RPP-RPT-59117, Rev 0 (WRPS 2016a)

Implementation:
- The implementing mechanism(s) shall be issued by the TOC. The current implementation status can be obtained from the One System RAM as identified in *Designation of Requirement Area Managers and Subject Matter Experts,* (BNI 2018d).

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 Requirement Area Manager may use the requirements management tool to track requisite interface items.

4.1 WTP Contractor Requisite Interface Items

4.1.1 Assess the ability of WTP to operate and maintain the facility during operations with respect to:

- Compliance with the baseline design as analyzed in the facility's BAT/AKART analysis.
- Prevention and response to off-normal conditions that impact the non-radioactive, non-dangerous effluent stream.

4.2 TOC Requisite Interface Items

No requisite interface items were identified for the TOC.

5 References

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Appendix A - ICD 05 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
ICD 05 has no open issues. No new open items have been identified.								