



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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September 9, 2020

20-NWP-147

Brian T. Vance, Manager  
Office of River Protection  
United States Department of Energy  
PO Box 450, MSIN: H6-60  
Richland, Washington 99352

John R. Eschenberg,  
President and Project Manager  
Washington River Protection Solutions, LLC  
PO Box 850, MSIN: H3-21  
Richland, Washington 99352

Re: Dangerous Waste Compliance Inspection on April 20, 2020, at the Double Shell Tank System and 204-AR Waste Unloading Station, RCRA Site ID: WA7890008967, Nuclear Waste Program (NWP) Compliance Index No.: 20.699

Dear Brian T. Vance and John R. Eschenberg:

Thank you for your staff's time during the Double Shell Tank System and 204-AR Waste Unloading Station (WUS) inspection on April 20, 2020. The Department of Ecology's (Ecology) compliance report of this inspection is enclosed. The report cites three areas of non-compliance and one concern.

To return to compliance, complete the actions required in the compliance problems section of the report and respond to Ecology within the timeframe specified. Include all supporting documentation in your response, (such as photographs, records, and statements explaining the actions taken and dates completed). Submit this information to Jared Mathey at 3100 Port of Benton Boulevard, Richland, Washington 99354.

Failure to correct the deficiencies may result in an administrative order, a penalty, or both, as provided by the Hazardous Waste Management Act (Revised Code of Washington 70.105.080 and .095). Persons who fail to comply with any provision of this chapter are subject to penalties of up to \$10,000 per day per violation.

Specific deficiencies or violations not listed in the enclosed compliance report do not relieve your facility from having to comply with all applicable regulations.

Brian T. Vance and John R. Eschenberg  
September 9, 2020  
Page 2 of 2

20-NWP-147  
Double Shell Tank System and 204-AR WUS  
RCRA Site ID: WA7890008967  
NWP Compliance Index No.: 20.699  
Inspection Date: April 20, 2020

If you have questions or need further information, please contact me at (360) 481-9830 or [jared.mathey@ecy.wa.gov](mailto:jared.mathey@ecy.wa.gov).

Sincerely,



Digitally signed by Mathey, Jared  
W. (ECY)  
Date: 2020.09.09 09:45:09 -07'00'

Jared Mathey  
Dangerous Waste Compliance Inspector  
Nuclear Waste Program  
jm/tla  
Enclosure

cc electronic w/enc:

Dave Bartus, EPA  
Dave Einan, EPA  
Cheryl Williams, EPA  
Mary Beth Burandt, USDOE-ORP  
Lori Huffman, USDOE-ORP  
Christopher Kemp, USDOE-ORP  
Joe Sondag, USDOE-ORP  
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Jared Mathey, Ecology  
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Compliance Index File: 20.699  
Stephanie Schleif, Ecology  
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NWP RIM Coordinators, Ecology  
Environmental Portal  
Hanford Facility Operating Record  
TPA Administrative Record  
MSA Correspondence Control  
USDOE-ORP Correspondence  
Control  
USDOE-RL Correspondence Control  
WRPS Correspondence Control  
USEPA Region 10 Hanford Field  
Office Correspondence Control

cc w/o enc:

Mason Murphy, CTUIR  
Jack Bell, NPT  
Laurene Contreras, YN

**Washington Department of Ecology  
Nuclear Waste Program  
Compliance Report**

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**Site:** Double-Shell Tank System and 204-AR Waste Unloading Station  
**RCRA Site ID:** WA7890008967  
**Inspection Date:** April 20, 2020  
**Site Contacts:** Holly Bowers, Washington River Protection Solutions, LLC (WRPS)  
Jay Warrick, WRPS  
Bryan Trimberger, United States Department of Energy Office of River Protection (USDOE-ORP)  
**Site Location:** Hanford Site, 200 East and 200 West Areas  
**At This Site Since:** 1943 **NAICS#:** 562211, 562910, 541715, and 924110  
**Current Site Status:** Large Quantity Generator

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**Ecology**

Lead Contact: Jared Mathey

Phone: (360) 481-9830

Other Representatives: None

Report Date: September 9, 2020

Index #: 20.699

Report By: Jared Mathey



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(Signed)

(Date)

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**Site Location**

The Hanford Site was assigned a single United States Environmental Protection Agency (EPA) identification number, and is considered a single *Resource Conservation and Recovery Act of 1976* (RCRA), as amended, facility even though the Hanford Site contains numerous processing areas spread over a large geographic area. The Hanford Site is a tract of land approximately 580 square miles and is located in Benton County, Washington. This site is divided into distinct Dangerous Waste Management Units (DWMUs) which are administratively organized into “unit groups.” A unit group may contain only one DWMU or many; currently, there are 30 unit groups at the Hanford Site. Individual DWMUs make up a small portion of the Hanford Site. Additional descriptive information on the individual DWMUs is contained in unit group permit applications and in Parts III, V, and VI of the Hanford Facility RCRA Permit, Dangerous Waste Portion, WA7890008967, Revision 8C (hereafter referred to as the Permit).

**Owner and Operator Information**

USDOE is the owner and operator of the Double-Shell Tank (DST) System and 204-AR Waste Unloading Station (WUS). WRPS has a contract with USDOE to co-operate these units.

**Facility Background**

In 2019, the USDOE Hanford Site reported as a Large Quantity Generator of hazardous waste on their Dangerous Waste Annual Report.

WRPS manages both dangerous waste and mixed waste generated at the DST System and 204-AR WUS. I observed the following in the *Dangerous Waste Permit Application, DST System/204-AR WUS, Part A Form, Revision 4*, dated October 13, 2009 (DST Part A Form):

The DST System began operations between April 1971 and October 1986. The 28 DSTs on the Hanford Site are listed below (See Table 1).

**Table 1 Double-Shell Tank Systems**

<b>DST Name</b>	<b>Capacity (L)</b>	<b>Began Operation</b>	<b>Aging or Non-Aging</b>
<b>200 West Area</b>			
241-SY-101	4,542,480	April 1977	Non-Aging Waste
241-SY-102	4,542,480	April 1977	Non-Aging Waste
241-SY-103	4,542,480	April 1977	Non-Aging Waste
<b>200 East Area</b>			
241-AN-101	4,542,480	September 1981	Non-Aging Waste
241-AN-102	4,542,480	September 1981	Non-Aging Waste
241-AN-103	4,542,480	September 1981	Non-Aging Waste
241-AN-104	4,542,480	September 1981	Non-Aging Waste
241-AN-105	4,542,480	September 1981	Non-Aging Waste
241-AN-106	4,542,480	September 1981	Non-Aging Waste
241-AN-107	4,542,480	September 1981	Non-Aging Waste
241-AP-101	4,795,460	October 1986	Non-Aging Waste
241-AP-102	4,795,460	October 1986	Non-Aging Waste
241-AP-103	4,795,460	October 1986	Non-Aging Waste
241-AP-104	4,795,460	October 1986	Non-Aging Waste
241-AP-105	4,795,460	October 1986	Non-Aging Waste
241-AP-106	4,795,460	October 1986	Non-Aging Waste
241-AP-107	4,795,460	October 1986	Non-Aging Waste
241-AP-108	4,795,460	October 1986	Non-Aging Waste
241-AW-101	4,542,480	August 1980	Non-Aging Waste
241-AW-102	4,542,480	August 1980	Non-Aging Waste
241-AW-103	4,542,480	August 1980	Non-Aging Waste
241-AW-104	4,542,480	August 1980	Non-Aging Waste
241-AW-105	4,542,480	August 1980	Non-Aging Waste

**Table 1 Double-Shell Tank Systems**

<b>DST Name</b>	<b>Capacity (L)</b>	<b>Began Operation</b>	<b>Aging or Non-Aging</b>
241-AW-106	4,542,480	August 1980	Non-Aging Waste
241-AY-101	3,900,000	April 1971	Aging Waste
241-AY-102	3,900,000	April 1971	Aging Waste
241-AZ-101	3,900,000	November 1976	Aging Waste
241-AZ-102	3,900,000	November 1976	Aging Waste

Dangerous/mixed waste stored in the DSTs was generated on the Hanford Site. Historically, the DSTs received mixed waste generated during the operation of chemical processing of nuclear facilities, such as the Plutonium Uranium Extraction (PUREX) Plant, B Plant, T-Plant, and Plutonium Finishing Plant. The DSTs also receive and store mixed waste from the 242-A Evaporator, 222-S Laboratory, and Single Shell Tank (SST) System. This waste is received through buried double-encased transfer lines to designated DSTs. Additionally; the DSTs receive mixed waste from other Hanford Site generators via tanker trucks. DST supernatant can also be used in the SST retrievals to mobilize SST waste.

Dangerous and/or mixed waste is accumulated throughout the Tank Farm facilities in Satellite Accumulation Areas (SAAs) or Central Accumulation Areas (CAAs) in accordance with the regulations until transferred to the permitted storage area or other treatment, storage, and disposal facility.

Tank waste in the DST system was generated from chemical processing of highly radioactive metals and compounds. Radioactive waste is generated from daily operations, waste transfer activities, waste tank sampling, housekeeping in radiological areas, radiological zone reduction, contaminated personal protective clothing, and miscellaneous materials. All radioactive waste is controlled through policies and procedures, and processed through waste management.

According to the DST Part A Form and the draft DST System Fact Sheet from the Revision 9 Permit Application, the DST System contains the following types of components:

- Transfer lines that run between tanks and tank farms.
- Seal pots on drain lines to prevent gases from escaping to the atmosphere.
- Pumps to move liquids or solids.
- Valves to control the flow of waste.
- Removable jumpers (rigid or flexible sections of piping) that connect transfer lines.
- Nozzles, which are termination points for transfer lines in a pit or diversion box.
- Pits or diversion boxes that contain valves, jumpers, and nozzles.

The DST Part A Form describes the tanks as treatment and storage DWMUs. Corrosion is controlled by adding chemicals to the waste in the DSTs. Airlift circulators or pumps mix the waste in the DSTs. The DSTs consist of a primary tank within a secondary tank. The secondary containment is designed with sufficient capacity to hold the waste in the primary tank. Both the primary and secondary tanks have leak detection equipment.

The mixed waste in the DSTs consist of liquid, sludge, and salt cake. The liquid waste on the top of the sludge is called supernatant. When liquid fills the void spaces in the tank's solids, the waste is called interstitial liquid. The sludge is solids that cannot be dissolved and are usually at the bottom of the tank. Salt cake consists of solid salts, which can be dissolved and are usually near the top of the tank. A list of dangerous waste codes associated with the DST System and 204-AR WUS can be found in the DST Part A Form.

The inactive 204-AR WUS is located in Hanford's 200 East Area and contains one DWMU, Catch Tank 204-AR-TK-1. The 204-AR-WUS began operations in February, 1982, as part of the DST System that was used to unload mixed waste from various Hanford Site operations for treatment prior to storage in the DST System. Catch Tank 204-AR-TK-1 was deactivated in 2010 by draining, flushing, and isolating the Catch Tank. The Catch Tank contains approximately 960 gallons of mixed waste. The design capacity of Catch Tank 204-AR-TK-1 is 1,500 gallons; the estimated annual quantity of waste is 14,400 pounds based on the waste volume in the catch tank (960 gallons) x 8.34 pounds/gallon x the estimated weight of 1.8 Specific Gravity (SpG) for the waste. Closure of the 204-AR WUS would cause a disruption in the DST System operations. Therefore, in accordance with Washington Administrative Code (WAC) 173-303-610(4)(a)(i), closure of Catch Tank 204-AR-TK-1 is extended to the closure of the DST System, at which time the 204-AR-WUS will be closed in accordance with Addendum H, "Closure Plan."

### **Compliance Background**

On August 13, 2018, Ecology conducted a dangerous waste compliance inspection of the DST System and 204-AR-WUS (Compliance Index #18.647). The inspection found no areas of non-compliance.

On July 30, 2019, Ecology conducted a dangerous waste compliance inspection of the DST System and 204-AR-WUS (Compliance Index #19.676). The inspection found no areas of non-compliance.

### **Inspection Summary**

Due to the COVID-19 pandemic, no site visit was performed as a part of this inspection. Instead, on April 20, 2020, I requested records to review to assess compliance.

### **Preparedness and Prevention Inspection Records**

I requested and reviewed fire extinguisher, spill kit, and radio operability check inspection records for all DST Farms for the month of January 2020. I received the following response from WRPS:

There are no monthly spill kit inspections to provide in response to this request item as these items are not routinely stored or present in the DST Tank Farms or associated change trailers. These items are only in these locations when and as needed to support specific work activities. As identified in RPP-16922, *Environmental Specification Requirements* radios are stored and managed only at 274-AW (AKA the Central Shift Office), and they are checked for operability before use. As has been previously discussed with Ecology, this operability check

is not documented in a record, therefore there are no records to provide in response to this request item.

I observed the January 2020 fire extinguisher inspection records for all DST Farms inspections covered fire extinguishers inside and outside of 272-AW, 272AW Trailer and supply buildings, 204-AR, and AN, AP, AW, AY, AZ, and SY Tank Farms. I observed the inspection record contained the date and time of the inspection, the printed name and hand written signature of the inspector, and notations of the observations made. I did not observe any deficiencies noted on any of the inspection records.

I requested the most recently completed fire alarm and wet pipe fire sprinkler inspection records (fire protection systems) for all buildings associated with the DST System, including but not limited to the tank farms instrument building or any other associated building used to manage DST waste systems. I received the following response from WRPS regarding this records request:

At present, the RCRA Part A Permit for the DST Operable Unit Group (OUG), both the current Part A and the Rev. 9 Addendum A, identify that the only buildings that manage dangerous waste besides the actual DSTs themselves, is 204-AR, 6241-V Vent Station, and the 6241-A Diversion Box. None of these buildings contain active fire protection systems. Therefore, there are no fire protection system inspection records that can be provided for this request.

I observed different tiered (6 month, 12 month, and 24 month) wet pipe fire sprinkler inspections for Building 274-AW occurred on June 21, 2019, and September 24-26, 2019. I did not observe any deficiencies noted during these inspections.

## **Waste Analysis**

I requested the most recently completed waste compatibility assessment for a waste transfer between DSTs. I reviewed RPP-RPT-61643, Revision 1, *Waste Compatibility Assessment for Tank 241-AP-106 Repurposing Step 5: Water and Caustic Addition to Tank 241-AP-106 and Subsequent Decant Transfer of Waste from Tank 241-AP-106 to Tank 241-AP-102*, dated October 2019. I observed the assessment was to evaluate the addition of 40,000 gallons of sodium hydroxide and 86,500 gallons of water to Tank 241-AP-106 with a decant transfer of 132,000 gallons of 241-AP-106 supernatant waste to Tank 241-AP-102. The summary of results and conclusions reported that the proposed transfers met all applicable compatibility criteria and that the additions may commence in accordance with the dispositions given for the decision rules, assuming all conditions and requirements in Section 3.0 are met. I observed 17 different conditions were listed in Section 3.0, including tank level, water addition, temperature, and chemistry limits. This section also noted that increased ventilation was not required and that lower flammability limits were within requirements. Section 3.0 also noted that the specific gravity was slightly greater (1.36 verse 1.35) than the limit. This section explained that since this is a chemical addition, it does not require a critical velocity calculation and that the waste will be diluted with the water addition prior to pumping to Tank 241-AP-102 that the transfer could commence.

## Personnel Training

I requested the most recent Dangerous Waste Training Plan for the DST System. I said if the most recent plan was provided to Ecology then disregard my request, but still reply to Ecology. I received the following response from WRPS:

The current revision (Revision C-0) of TFC-PLN-07, "*Double-Shell Tank Dangerous Waste Training Plan*" has already been provided to Ecology during the 2019 Dangerous Waste DST Inspection #19.676, on July 30, 2019 (please see TOC-RORI-19-028).

I requested training history reports for the Nuclear Chemical Operators and approving managers for all the daily inspections that occurred on January 6, 2020, in the AN Tank Farm. I received the following response from WRPS regarding this request:

As requested, the training history reports have been provided for the personnel who signed off on the daily inspections for the 241-AN Tank Farm conducted on January 6, 2020. Training courses and information not associated with TFC-PLN-07 were redacted. A list of these personnel and their positions is provided below:

- Sarah Southerland, Nuclear Chemical Operator (NCO)–Operations (Waste Worker).
- Derek Giese, NCO–Operations (Waste Worker).
- Tim Knaff, Shift Operations Manager/Operations Engineer (Waste Worker Supervisor).
- Lino Gutierrez, Shift Operations Manager/Operations Engineer (Waste Worker Supervisor).

I reviewed the redacted training records for the above personnel and compared these records to requirements in TFC-PLN-07 Revision C-0, *Double-Shell Tank Dangerous Waste Training Plan*, dated July 24, 2019.

I observed that Sarah Southerland, NCO–Operations, did not take Course 000001 Hanford General Employee Training since October 24, 2016. This course is required annually in the dangerous waste training plan for NCO–Operations staff. I observed Sarah Southerland took Course 000019 Hanford General Employee Training Refresher on January 7, 2020, however this course is not listed in the dangerous waste training plan. I observed Sarah Southerland also did not take Course 350166 Waste Surveillance and Inspection Certification and Course 350163 Waste Surveillance and Inspection Operations–Performance Demonstration (PD) Card required for NCO–Operations staff. I observed Sarah Southerland was current on all other required trainings.

I observed Derek Giese, NCO–Operations did not take Course 000001 Hanford General Employee Training since November 7, 2016. This course is required annually in the dangerous waste training plan for NCO–Operations. I observed Derek Giese took Course 000019 Hanford General Employee Training Refresher, on October 25, 2019, however this course is not listed in the dangerous waste training plan. I observed Derek Giese also did not take Course 350166 Waste Surveillance and Inspection Certification and Course 350163 Waste Surveillance and



Inspection Operations—PD Card required for NCO—Operations staff. I observed Derek Giese was current on all other required trainings.

I observed Tim Knaff, Shift Operations Manager/Operations Engineer did not take Course 000001 Hanford General Employee Training since September 9, 2016. This course is required annually in the dangerous waste training plan for Shift Operations Manager/Operations Engineer. I observed Tim Knaff took Course 000019 Hanford General Employee Training Refresher, on September 5, 2019, however this course is not listed in the dangerous waste training plan. I observed Tim Knaff was current on all other required trainings for a Shift Operations Manager/Operations Engineer.

Lino Gutierrez Shift Operations Manager/Operations Engineer did not take Course 000001 Hanford General Employee Training since December 3, 2015. This course is required annually in the dangerous waste training plan for Shift Operations Manager/Operations Engineer. I observed Lino Gutierrez took Course 000019 Hanford General Employee Training Refresher, on August 23, 2019, however this course is not listed in the dangerous waste training plan. I observed Lino Gutierrez was current on all other required trainings for a Shift Operations Manager/Operations Engineer.

### **Inspection Records**

I requested and reviewed all daily inspections for 241-AN Tank Farm for January 5, 2020 through January 11, 2020. I observed that daily inspections for 241-AN Tank Farm were conducted for all AN Tank Farm tank waste levels, most annulus level detectors, and other daily round inspection requirements for January 5, 2020 through January 11, 2020. I observed on January 7, 2020 that annulus tank level readings were taken for AN107-WSTALDT-151 and AN107-WSTS-LDT-152, but actual readings were blank on the inspection log. On August 20, 2020, I sent an email to USDOE and WRPS explaining this observation and asked them to provide missing inspection records or clarifications on why the data was missing from the inspection record. On August 24, 2020, I received an updated inspection record showing the annulus tank level readings were taken for AN107-WSTALDT-151 and AN107-WSTS-LDT-152 on January 7, 2020. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made.

I requested and reviewed all daily inspections for 241-AP Tank Farm for January 12, 2020 through January 18, 2020. I received the following notation regarding these inspection records from WRPS:

The requested daily inspections records for the tank farms and dates listed above have been provided. There was only one corrective action identified in the provided records for one of the daily rounds provided for the 241-AP Tank Farm for Item 7 (i.e. RATL# AN-D-20-005); Please see the provided, associated, Rounds Action Tracking Log (RATL) record. As denoted in the RATL entry for AN-D-20-005, the 241-AP-103 primary ENRAF level indicator measurement for January 13, 2020, did not auto-push to the PI software. The only required corrective action needed to resolve the issue was to perform a manual field reading for this date, as stated in the RATL. Please note that no further corrective

actions beyond this were required as the issue appeared to have been due to a temporary loss of wireless signal, and not a software or hardware failure. This was confirmed when the system correctly pushed the measurement reading on January 14, 2020; the RATL was therefore closed out as completed on January 15, 2020.

I observed that daily inspections for 241-AP Tank Farm were conducted for all AN Tank Farm tank waste levels, all annulus level detectors, and other daily round inspection requirements for January 12, 2020 through January 18, 2020. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made.

I requested and reviewed all daily inspection records for Tank 204-AR-TK-1 (204-AR Waste Unloading Station) for January 19, 2020 through January 25, 2020. I observed that daily inspections for 204-AR Waste Unloading Station covered the following:

- No visible damage to or leaks in the Mechanical Equipment Room.
- No indications of damage or tampering to controls, alarms, and indicators.
- Leak Detected AR204-WT-LDA-101 Catch Tank Sump Alarm Light Not Lit.
- Leak Detected AR204-WT-LDA-101 Catch Tank Sump Alarm bulb lights when pushed to test.
- No visible damage to or leaks in unloading bay (surveillance from control room window).
- AR204-WT-LI-101 Tank 1 Level (ET-000759).
- “DANGER–Unauthorized Personnel Keep Out–Hazardous Material, Tank Waste Hazards include: Radiation, Toxic, Corrosive” are posted at all entrances to the facility. Signs visible and legible from a distance of at least 50 feet.
- Exterior doors in good condition, closed, and locked when not staffed for access control.
- Doors/gates in good condition and functioning properly.
- 204-AR facility conditions satisfactory.

I observed that daily inspections for 204-AR Waste Unloading Station were all conducted with no deficiencies noted except for the question, “204-AR Facility conditions satisfactory,” which checks buildings and equipment for abnormal or hazardous conditions and safety issues. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made.

I requested and reviewed all daily inspection records for 241-SY Tank Farm for January 26, 2020 through February 1, 2020. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made. I observed on January 29, 2020, January 30, 2020, and February 1, 2020 that the three annulus level detectors SY103-WST-LDT-151, SY103-WST-LDT-152, and SY103-WST-LDT-153 were marked as unsatisfactory with a reference to RATL-ST-D-19-079. I observed on January 29, 2020 and February 1, 2020 that the three annulus level detectors SY103-WST-LDT-151, SY103-WST-LDT-152, and SY103-WST-LDT-153 were manually retaken out in the field. I observed on January 30, 2020, the three annulus level detectors

SY103-WST-LDT-151, SY103-WST-LDT-152, and SY103-WST-LDT-153 level detection inspections were not taken. WRPS noted the following regarding these annulus readings:

The requested daily inspection records for the 241-SY Tank Farm have been provided. The only relevant RATL number denoted on the provided records that is relevant and applicable is RATL-ST-D-19-079 (see the 241-SY-103 leak detectors, the electronic readings are available on rows 7–9, or manual readings (when taken instead) are rows 65, 66, and 81). As denoted in the governing inspection procedure, TF-OR-DR-ST, “ST Daily Rounds,” the primary method for obtaining ENRAF tank level readings for the rounds is via an automated, electronic and wireless, direct data push to the Tank Monitor and Control System (TMACS). The relevant level data from TMACS is then appended to (manual/paper rounds), or directly incorporated into (for electronic rounds), the operator round. [*sic*] The secondary method that is deployed whenever the electronic ENRAF reading is not available, or as needed for other reasons, is for an Operator to manually take a direct field reading from the ENRAF.

RATL-ST-D-19-079 is the default RATL code assigned by the ST Team whenever they want to log that the electronic reading did not report to TMACS, and therefore the secondary method (a manual field reading) was instead utilized to obtain the level reading directly. This RATL code is only assigned when the failure of the electronic reading is due to a known or temporary issue such as a momentary loss of power and/or wireless signal, a planned outage, etc.) and no corrective actions or remedial repairs are required to the actual hardware or software. Therefore, despite the presence of RATL-ST-D-19-079 in the inspection comments for some of the 241-SY-103 leak detectors, no corrective actions or remedial repairs as defined by WAC 173-303-320 were actually required or performed. The involved ENRAFs were still functioning as required and the manual field readings were taken without issue. So there are no additional records to provide beyond the daily inspection records themselves.

On August 20, 2020, I sent an email to USDOE and WRPS explaining inspection records provided showed on January 30, 2020, that annulus tank level readings were not taken for SY103-WSTA-LDT-151, SY103-WSTA-LDT-152, and SY103-WSTA-LDT-153. I explained that inspection record pages were not provided to show if subsequent readings were retaken manually. I asked WRPS to provide the missing inspection records. On August 24, 2020, I received an updated inspection record showing that SY103-WSTA-LDT-151, SY103-WSTA-LDT-152, and SY103-WSTA-LDT-153 readings were retaken manual on January 30, 2020.

I requested and reviewed all data gathered from monitoring any leak detection equipment for Tank 241-AY-101 from January 1, 2020 through January 31, 2020. WRPS noted the following regarding an annulus reading on January 31, 2020.

The 241-AY-101 leak detection data is documented on the daily rounds, and has been provided for the requested time period of January 1, 2020 through January 31, 2020. There was one corrective action noted on these records, RATL-AZ-D-19-089, please see the provided, associated RATL record.

As denoted in the inspection record, the 241-AY-101 leak detector 3 data did not auto-push to the PI software on January 31, 2020. The only required corrective action needed to resolve the issue was to perform a manual field reading for this date, as stated in the RATL. No further corrective actions beyond this were required as the issue was caused by a temporary loss of wireless signal. There were no issues with the software or hardware, and the system successfully pushed a reading to the PI software the next day, February 1, 2020, as documented on that inspection record. Please note, this RATL code is not specific to this singular event. It was a universal RATL code utilized by AZ Team whenever this particular type of issue occurred in general.

I observed that a manual reading for 241-AY-101 leak detector 3 (AY101-WSTA-LDT-153) was not performed on January 31, 2020. Outside of this issue, I observed all three annulus level readings and tank waste level measurements were conducted every day for the month of January 2020. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made. I did not observe any other deficiencies noted on any of the inspection records.

On August 20, 2020, I sent an email to USDOE and WRPS explaining inspection records provided did not show a manual reading for 241-AY-101 leak detector 3 (AY101-WSTA-LDT-153) was performed on January 31, 2020. I explained that inspection record pages were not provided to show if the subsequent reading were retaken manually. I asked them to provide the missing inspection record. On August 24, 2020, I received an inspection record showing that 241-AY-101 leak detector 3 (AY101-WSTA-LDT-153) was retaken manually on January 31, 2020.

In the records request, I asked to provide all inspections of alarm panels for 241-AZ Tank Farm for January 19, 2020 through January 25, 2020. On May 22, 2020, I received the following response from WRPS:

The only control room and/or instrument building associated with the 241-AZ Tank Farm is 241-AZ-271, which is the main control room for the 241-AZ-702 building. All equipment contained within, and associated with, this control room are Air Operating Permit related. 241-AZ Tank Farm alarms are now electronically transmitted to, and continuously monitored at, the control room in 274-AW. Therefore, there are no longer any daily inspection records to provide in response to this request.

On May 26, 2020, I sent the following to WRPS regarding the above response:

Did not send 241-AZ tank farm alarm inspection records from Building 274-AW. Please provide these inspection records.

On June 11, 2020, I received the following response from WRPS:

Please see the original response provided to Agenda Item Number 11. As stated previously, the scope of this document request item was explicitly for inspection records for a specific type of equipment (alarm panels) that are physically located within the 241-AZ Tank Farm. The 274-AW building is neither physically located within, connected to, nor classified by the Permittee or current DST OUG

Part A permit, as being part of the 241-AZ Tank Farm. In addition, also as per the original response to Agenda Item Number 11, the alarms from the 241-AZ Tank Farm that used to be inspected daily at the physical alarm panels located at the farm were replaced with wireless, electronically transmitted alarms that are continuously monitored at 274-AW. Therefore, there are no additional documents to provide for this item.

40 Code of Federal Regulations (CFR) 265.195 states the following in part:

- (a) The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.
- (b) The owner or operator must inspect at least once each operating day:
  - (1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;
- (g) The owner or operator must document in the operating record of the facility an inspection of those items in paragraphs (a) and (b) of this section.

I requested all catch tank and pit leak detection system conductivity probe and level indicator inspections/tests for the week of January 5, 2020 through January 11, 2020. On May 22, 2020, I received the following response from WRPS:

RPP-16922 presently includes a daily visual inspection of the observable parts of the annulus conductivity probe leak detector alarm systems and level indicator or level indicating transmitter alarm systems. These systems have all been converted to remote, electronic monitoring. Data from these systems is now wirelessly transmitted to the central control room at 274-AW, where they are continuously monitored. The only observable parts of these systems that remain inside the actual Tank Farms are the wireless transmitting units, which are now included as an element inspected during the general, daily round conducted to visually inspect a farm for aboveground/damage.

On May 26, 2020, I sent the following request back to WRPS:

Did not send DST farm catch tank and pit leak detection system conductivity probe and level indicator inspection/test records from Building 274-AW. Please provide these inspection records.

On June 11, 2020, I received the following response from WRPS regarding this request:

The scope of this document request item was explicitly for inspection records for two different, visual inspections that are performed inside a DST Tank Farm. As per RPP-16922, *Environmental Specification Requirements*, these two inspections are to visually look at the observable parts of the specified, physical pieces of equipment and systems. The 274-AW building is neither physically located within, connected to, nor classified by the Permittee or the current DST OUG Part A permit, as being part of any of the DST Tank Farms. 274-AW is an

administrative office building, it is not subject to these two inspections as it is not a DST catch tank or pit, nor is it physically connected to any of the identified and defined DST OUG catch tanks, pits, or their associated ancillary pipelines and equipment. As was stated in the original response to this Agenda Item, the visually observable portions of the specified physical equipment and structures subject to the two requested inspections are inspected daily for each DST Tank Farm. Those daily inspection records have already been provided for the specified date range, and for all the DST Tank Farms. Therefore, there are no additional documents to provide.

Provided records related to daily aboveground inspections for AN, AP, AW, AY, AZ, and SY DST Tank Farms from January 5, 2020 through January 11, 2020. I observed the inspection question was the following:

No visible damage to or leaks from above-ground portion of process and support pits and pit coverings.

I observed these inspections covered the requirement in 40 CFR 265.195(b)(2) for above-ground portions of the tank system, if any, to detect corrosion or releases of waste, but did not cover the requirements in 40 CFR 265.195(a) or 40 CFR 265.195(b)(1). Even though these DST monitoring systems are continuously monitored, from the above responses, it appears the daily inspection of these systems are not being documented and maintained in the operating record as inspection records.

40 CFR 265.195(a) states:

The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

40 CFR 265.195(b) states:

The owner or operator must inspect at least once each operating day:

(1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order.

I requested and reviewed the pit leak detector monitoring records for the month of January 2020 for AY-102A. I observed monitoring of the AY-102-WFIT-122 was monitored weekly on January 6, 13, 21, and 27, 2020. I observed the inspection records contained the date and time of the inspections, the printed name and hand written signature of the inspectors, and notations of the observations made.

241-AY-102 is an unfit for use tank system that has undergone retrieval per the now-closed AY Settlement Agreement (Letter 18-TF-0030). During the effect days of the AY Settlement Agreement, on November 8, 2016, Ecology approved RPP-PLAN-60074, Revision 5, *Tank 241-AY-102 Monitoring Plan*. I could not find a copy of this plan on the Hanford Administrative Record, so I was unable to review it as a part of this inspection. The DST System is required to follow the interim status regulations pursuant to the Hanford Revision 8C Permit Condition I.A. 40 CFR 265.195(a) requires daily inspections of data gathered from monitoring and leak

detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design. I could not confirm that inspections of the AY-102A pit leak detector, and maybe others for AY-102, are being performed according to the regulatory requirements for tank systems.

### Tri-Party Agreement Milestone Update

In the records request, I asked to report on the status with compliance on Tri-Party Agreement Milestone M-042-10-T01 for each piece of equipment listed in M-042-10. I received the following subsequent response from WRPS:

The official status of the Tri-Party Agreement (TPA) non-enforceable, target date, M-042-10-T01, is “On Schedule.” As stated in the prior response to this item, updates on progress to completing this target date as well as the associated milestone, M-042-10, will be provided and discussed with Ecology in the monthly TPA Tank Farms Project Manager’s meeting, in accordance with the requirements of the TPA. As a courtesy, listed below is the current status of the equipment listed in M-042-10. Note that for the equipment identified in the last column as “No current plans,” the Permittees are presently drafting a TPA change request that will modify M-042-10 to remove those items from the milestone. The equipment has been determined to not have a future mission need, so it will therefore be removed from the milestone and added to the closure list.

**Table 2 Current Status of the Equipment Listed in M-042-10**

Tank System	Slurry and Supernate Transfer Lines	Drain/Pump Pits	Pressure Test
241-AN-101	None	241-AN-01D	No current plans
241-AN-102	SL-162	None	Passed 1/28/2020
	SN-262	None	Passed 1/21/2020
241-AN-103	SL-163	None	Passed 2/25/2020
	SN-263	None	Passed 2/25/2020
241-AN-104	SL-164	None	Passed 2/18/2020
	SN-264	None	Passed 2/25/2020
	SLL-3160	None	No current plans
241-AN-105	SL-165	None	Passed 2/12/2020
	SN-265		Passed 2/12/2020
241-AN-107	SL-167	None	Passed 1/31/2020
	SN-267		Passed 1/31/2020
241-AW-105	SL-165	None	No current plans
241-SY-101	None	241-SY-01A	No current plans

**Table 2 Current Status of the Equipment Listed in M-042-10**

Tank System	Slurry and Supernate Transfer Lines	Drain/Pump Pits	Pressure Test
241-SY-102	None	241-SY-02E	No current plans
241-AY-101	None	241-AY-01B, 241-AY-01C, 241-AY-01D, 241-AY-01E	No current plans
241-AZ-101	None	241-AZ-01B, 241-AZ-01C	No current plans
241-AZ-102	None	241-AZ-02B, 241-AZ-02C	No current plans
AW-A and 242-A Evaporator	SL-168	None	No current plans

**General Tank Inspections and Integrity Assessment Work**

I requested and reviewed all associated work packages, Problem Evaluation Requests (PERs), or other related documents regarding results of DST annulus space video camera inspections since May 31, 2017. This request includes but is not limited to providing the tank name, date of inspection, and results of the inspections. I received the following response, in part, from WRPS:

Since May 31, 2017, five DST visual inspection reports have been released as follows:

- RPP-RPT-31599, *Double-Shell Tank Integrity Inspection Report for 241-AN Tank Farm*; latest Revision 9 released 2/26/2020.
- RPP-RPT-38738, *Double-Shell Tank Integrity Inspection Report for 241-AP Tank Farm*; latest Revision 6 released 7/8/2019.
- RPP-RPT-42147, *Double-Shell Tank Integrity Inspection Report for 241-AW Tank Farm*; latest Revision 6 released 7/31/2019.
- RPP-RPT-34311, *Double-Shell Tank Integrity Inspection Report for 241-AY Tank Farm*; latest Revision 3 released 7/11/2017.
- RPP-RPT-34310, *Double-Shell Tank Integrity Inspection Report for 241-AZ Tank Farm*; latest Revision 3 released 5/4/2020.

As a courtesy, WRPS and ORP are providing copies of these five reports to Ecology.

I observed the following from the Executive Summary from RPP-RPT-31599, *Double-Shell Tank Integrity Inspection Report for 241-AN Tank Farm*, dated February 26, 2020.

Visual inspections of the seven 241-AN Tank Farm (AN Farm) tanks are performed to track changes in steel conditions during their service life. The AN Farm construction was



completed in 1980 to provide additional salt storage (Tanks AN-101 through AN-106) and to provide a spare Aging Waste Tank (Tank AN-107). Enhanced visual inspections and the preparation of this report are guided by RPP-7574, Double-Shell Tank Integrity Program Plan, and RPP-PLAN-46847, Visual Inspection Plan for Single-Shell Tanks and Double-Shell Tanks.

This report documents the results of the latest enhanced visual inspections performed on the AN Farm double-shell tanks. The current revision of this report (Revision 9) documents the inspection results for all 7 AN farm tanks, performed from February 2019 through May 2019. Eight risers were used to provide visual coverage of more than 95 percent of the annulus floor in each tank. These DSTs were last inspected in 2016 and 2017.

As seen from the inspection risers, there is evidence of beachlines on the annulus floor that is likely the result of evaporated couplant water used during ultrasonic testing examinations collecting on the annulus floor. There is no evidence of change in the condition of the existing areas of interest for the AN Farm tanks, and no evidence indicative of a primary tank leak or active water intrusion for the AN Farm tanks. There is evidence of two small areas of corrosion product spalling from the retaining ring in AN-103, which is visible from Risers 43 and 44. The spalling is attributed to poor adhesion of the corrosion product to the underlying surface of the retaining ring.

Future annulus visual inspections and ultrasonic testing will be continued to identify any change in the integrity of the AN Farm tanks.

I observed the following from the Executive Summary from RPP-RPT-38738, *Double-Shell Tank Integrity Inspection Report for 241-AP Tank Farm*, dated July 8, 2019.

This report documents the results of the latest enhanced visual inspections performed on 241-AP Tank Farm (AP Farm) Double-Shell Tanks (DSTs). The present revision of this report (Revision 6) documents the results of inspections of tanks AP-102, AP-103, AP-104, AP-105, AP-106, and AP-108 performed throughout 2018. These DSTs were last inspected in 2013 through 2015. The previous revision of this report (Revision 5) documents the results of inspections of tanks AP-101 and AP-107 performed in 2017. To date, no evidence has been found of an active water intrusion or a primary tank leak in any AP Farm DST. This revision includes panoramas from earlier revisions of this report for comparison, which are presented with those created from the 2018 inspections. Most show no apparent change in condition since the preceding inspection, though in some cases excessive image brightness and difficulty with camera control limited the ability to compare.

The present revision consolidates previously established Areas of Interest (AOIs) for a more complete presentation of the inspection history of the AP Farm tanks in their respective Tank Integrity Inspection Guides (TIIGs). This effort incidentally discovered errors in identification of the risers used to perform some previous visual inspections. The inspection histories of affected tanks and the descriptions

of affected images in the TIIGs were updated to reflect corrections made pertaining to the misidentification of earlier inspections.

Review of a 2014 inspection of AP-104 for purposes of identifying the true riser identification of an earlier video noted a crack-like features [*sic*] in the chalk used for hydrostatic testing of the weld joining Course 2 and Course 3. This video was taken through Riser 46, which was not used for inspection in 2018. These features may rather be channels in the chalk. Future inspections will track features for changes in condition.

Dark coloration is noted in the upper knuckle of AP-102, AP-105, and AP-106, which in some cases may only be retained mill scale, which is darker in color, and in other cases may indicate recent moisture accumulation through condensation or recent water intrusion. Dissimilarity in lighting and camera angle among inspections limits certainty of comparison. Future inspections will focus on these areas.

Review of AOI AP-103-0037 concluded the image shows a section of the refractory elevated above the normal position. Examination of inspections from the opposite vantage corroborate, and further reveal a gap between the retaining ring and the refractory. The presence of hydrostatic test chalk on the exposed edge of the refractory indicate the condition has existed since original construction and before operation. Earlier inspections indicate the condition remains unchanged. Similar elevation of the refractory, though to a much lesser extent, was found in other AP Farm tanks.

Annulus visual inspections and the preparation of this report are guided by RPP-PLAN-46847, Rev. 3, *Visual Inspection Plan for Single-Shell Tanks and Double-Shell Tanks as part of the Double-Shell Tank Integrity Program* (RPP-7574, Rev. 5, *Double-Shell Tank Integrity Program Plan*). This inspection plan should be sustained so that regular annulus visual inspections may continue to contribute to the body of integrity data for use in identifying the need for and performing tank integrity assessments.

I observed the following from the Executive Summary from RPP-RPT-42147, *Double-Shell Tank Integrity Inspection Report for 241-AW Tank Farm*, dated July 31, 2019.

Visual inspections of the six 241-AW Tank Farm (AW Farm) tanks are performed to track changes in steel conditions during their service life. The AW Farm construction was completed in 1979 to support 242-A Evaporator operations. The AW Farm remains the primary feed and receipt tank farm supporting evaporator operations. Enhanced visual inspections and the preparation of this report are guided by RPP-7574, *Double-Shell Tank Integrity Program Plan*, and RPP-PLAN-46847, *Visual Inspection Plan for Single-Shell Tanks and Double-Shell Tanks*.

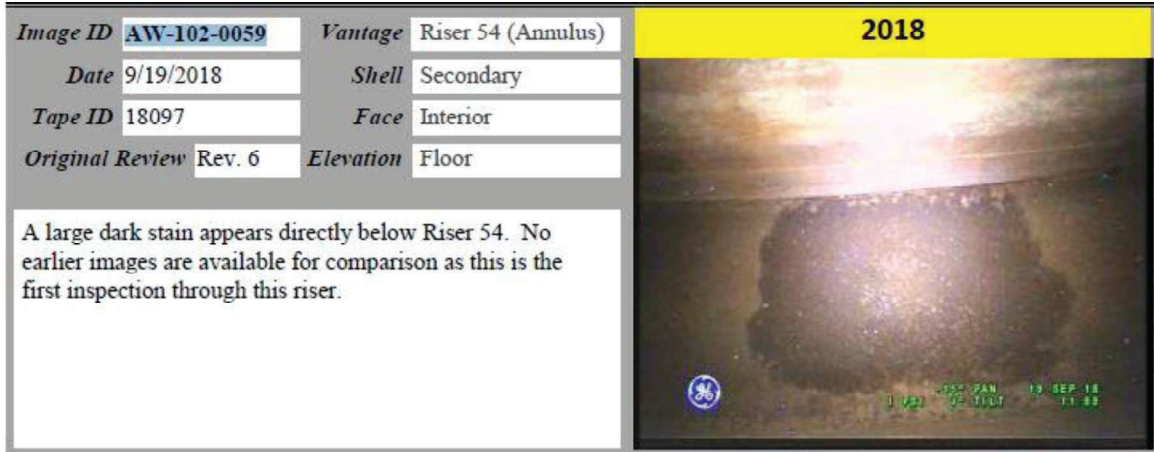
This report documents the results of the latest enhanced visual inspections performed on the AW Farm double-shell tanks (DST). The current revision of this report (Revision 6) documents the inspection results for Tanks AW-101,

AW-102 and AW-104 performed from January 2018 through September 2018. Eight risers were used to provide visual coverage of more than 95 percent of the annulus floor in each tank. These DSTs were last inspected in 2014 and 2015. Previous revisions of this report (Revisions 4 and 5) document the results of inspections of Tanks AW-103, AW-105, and AW-106 performed in 2016 and 2017.

As seen from the inspection risers, there is evidence of beachlines on the annulus floor that is likely the result of evaporated couplant water used during ultrasonic testing examinations collecting on the annulus floor. There is no evidence of change in the condition of the existing areas of interest for the AW Farm tanks, and no evidence indicative of a primary tank leak or active water intrusion for the AW Farm tanks. There is evidence of water staining in Tank AW-102, directly below Riser 54. Riser 54 has not been used previously for inspection so there are no prior images available for comparison. The staining is attributed to condensation of annulus atmospheric water vapor due to temperature differences within the annulus, rather than intrusion.

Future annulus visual inspections and ultrasonic testing will be continued to identify any change in the integrity of the AW Farm tanks.

See photo below of issue found under Riser #54 in 241-AW-102:



**Figure 1 Issue Found Under Riser #54 in 241-AW-102**

I observed the following from the Executive Summary from RPP-RPT-34311, *Double-Shell Tank Integrity Inspection Report for 241-AY Tank Farm*, dated July 11, 2017:

Visual inspections of the two 241-AY Tank Farm (AY Farm) tanks are performed in order to track changes in steel conditions during their service life. The AY Farm was the first double-shell tank farm constructed and was completed in 1970. There has been a continued focus on the integrity of AY Farm due to the

2012 discovery of the tank 241-AY-102 (AY-102) primary tank leak into the annulus (RPP-ASMT-53793, Rev. 0, *Tank 241-AY-102 Leak Assessment Report*).

This document provides the results of the annulus visual inspections for the two DSTs which comprise AY Farm. Compiled into this document are these results which are tracked utilizing a Tank Integrity Inspection Guides (TIIG) for each AY Farm tank. The first inspections performed in AY Farm occurred in 1992 and followed the periodicity of every five years (not to exceed seven years). The results of the inspections performed in AY Farm from 2008 to 2014 are reported in the previous revision of this report (RPP-RPT-34311, Rev. 2, *Double-Shell Tank Integrity Inspection Report for 241-AY Tank Farm*).

As a result of the AY-102 primary tank leak into the annulus in August 2012, changes were made to the DST visual inspection program. Enhanced annulus inspections are to be performed on the DSTs every three years. Enhanced annulus inspections utilize 8 to 12 risers to view >95% of the annulus floor. Previous inspections only utilized four risers which provided visual coverage of about 50% of the annulus floor. With the increased annulus inspection coverage and the poor visibility seen during the in-tank video footage, in-tank inspections are no longer required.

This report documents the results of the visual inspections performed in January 2017 for AY Farm. Enhanced annulus inspections were performed in tank AY-101 in January 2017 utilizing nine risers to allow visual coverage of >95% of the annulus floor. Enhanced annulus floor inspections through nine risers are currently being performed in tank AY-102 on a set frequency to identify changes in the accumulation of the residual material on the annulus floor.

In many of the risers, white and yellow mineralization build-up could be seen on the top knuckle region of tank AY-101. This mineralization build-up is thought to be solidified calcium carbonate which resulted from water intrusion passing through the concrete dome and evaporating once it reached the annulus space. Water intrusion into the annulus of tank AY-101 has been attributed in the past to meteorological precipitation. There appears to be small changes in condition when compared to the previous inspection of this region which will be tracked in the AY-101 TIIGs. Despite the changes identified during the current inspection, there was no evidence indicative of a primary tank leak for tank AY-101. No signs of cracking or leaking were discovered or noted, and no significant pitting was identified.

As of February 2017, the contents of tank AY-102 have been retrieved to the second limit of technology. Ongoing periodic inspections will continue to monitor and track changes in the accumulation of the residual material on the annulus floor. I observed the following from the Executive Summary from RPP-RPT-34310, *Double-Shell Tank Integrity Inspection Report for 241-AZ Tank Farm*, dated May 4, 2020:

Visual inspections of the two 241-AZ Tank Farm (AZ Farm) tanks are performed to track changes in steel conditions during their service life. The AZ Farm

construction was completed in 1974 to handle high heat aging waste from the PUREX plant. Enhanced visual inspections and the preparation of this report are guided by RPP-7574, *Double-Shell Tank Integrity Program Plan*, and RPP-PLAN-46847, *Visual Inspection Plan for Single-Shell Tanks and Double-Shell Tanks*.

This report documents the results of the latest enhanced visual inspections performed on the AZ Farm double-shell tanks (DST). The current revision of this report (Revision 3) documents the inspection results for both AZ Farm tanks, performed in April and May 2019. Approximately eight risers were used to provide visual coverage of more than 95 percent of the annulus floor in each tank. These DSTs were last inspected in 2017.

As seen from the inspection risers, there is evidence of beachlines on the annulus floor that is likely the result of evaporated couplant water used during ultrasonic testing examinations collecting on the annulus floor. There is no evidence of change in the condition of the existing areas of interest for the AZ Farm tanks, and no evidence indicative of a primary tank leak or active water intrusion for the AZ Farm tanks.

Future annulus visual inspections and ultrasonic testing will be continued to identify any change in the integrity of the AZ Farm tanks.

I requested any associated Work Packages for Ultra Sonic Testing in 2019 for the 241-AZ Tank Farm. I received the following response from WRPS:

There are no records to provide in response to the requested item as no ultra-sonic testing was performed in the 241-AZ Tank Farm in 2019.

## Security

In the records request, I asked to explain how they prevented the unknowing entry and minimize the possibility for the unauthorized entry of persons onto the active portion of the DST System. I received the following response from WRPS:

The DST system uses the security measures in the RCRA Permit Attachment 3, and unit-specific security measures such as signs and barriers to prevent the unknowing entry and minimize the possibility of unauthorized entry, of persons or livestock to the active portions of the DST system.

### SIGNS

Signs prevent the unknowing entry, and minimize the possibility for the unauthorized entry, into active portions of the DST System [WAC-173-303-310(2)(a)]. Signs bear the legend, "Danger-Unauthorized Personnel Keep Out," or "Danger-Hazardous Materials-Unauthorized Personnel Keep Out," or "Hazardous Materials-Unauthorized Personnel Keep Out," and are legible from a distance of at least 25 feet. Signs are posted at doors and gates that provide access to the active portions. Signs are also posted on the perimeter fence surrounding each DST tank farm and are spaced not more than 250 feet apart on each fence in a manner that a sign is visible from all angles of approach.

## BARRIERS

Soil covering the underground DST System components serves as a natural barrier and prevents access. Heavy covers placed over pits and temporary waste transfer lines require lifting equipment for removal and serve as a barrier that prevents access to these active portions. The DST tank farms are surrounded by fences that are at least 6 feet (nominal) in height. Gates and doors that provide access are locked when the facility is unoccupied. Building walls provide an artificial barrier and doors provide a means to control entry to the active portions of the 204-AR WUS, 6241-V Vent Station, and 6241-A Diversion Box. Doors providing entry to active portions of the 204-AR WUS, 6241-V Vent Station, and 6241-A Diversion Box are closed and locked when authorized workers are not present.

## Contingency

In the records request, I asked to explain the current status and plan for revising the DST Building Emergency Plan to meet agreed upon standards from the ones recently submitted for incorporation into the Hanford Rev. 8C Permit. I received the following response from WRPS:

RPP-27869, *Building Emergency Plan for Tank Farms* has been revised to meet agreed upon standards, which will become effective July 23, 2020, on the same day the associated RCRA Permit Revision 8C Class 3 permit modification becomes effective.

## Closure

In the records request, I asked to explain the current status of development of the Hanford Rev. 9 Closure Plan for the DST System. I received the following response from WRPS:

The Permittees and Ecology report that the review & workshops on DST Closure Addendum are 90% complete, and common concern resolution is 50% complete. Issues being resolved by parties external to the permitting team include: constituents-of-concern; status of condensate catch tank 241-AZ-301; and closure requirements for 241-AY-102. The Ecology official points of contacts for the RCRA Permit Revision 9 development efforts for the DST System are Nina Menard and Jeff Lyon.

### Compliance Problems

The Dangerous Waste inspection on April 20, 2020, found the following compliance problems.

Each problem is covered in three parts:

- (1) **Citation from the regulations**
- (2) **Specific observations** from the inspection that highlight the problem
- (3) **Required actions** needed to fix the problem and achieve compliance

The problems listed below must be corrected to comply with Washington Dangerous Waste Regulations (Chapter 173-303 WAC), or other environmental laws or regulations. Complete the required actions listed below and respond to Ecology at the following address within the times specified below. Include all supporting documentation such as photographs, records, and statements explaining the actions taken and dates completed to return to compliance.

Attention: Jared Mathey  
Washington Department of Ecology  
Nuclear Waste Program  
3100 Port of Benton Blvd  
Richland, WA 99354

You may request an extension of the deadlines to achieve compliance. Make the request in writing, including the reasons an extension is necessary and proposed date(s) for completion, and send it to Jared Mathey before the date specified above. Ecology will provide a written approval or denial of your request.

**If you have any questions about information in this Compliance Report, please call:  
Jared Mathey at (360) 481-9830**

This does not relieve you of your continuing responsibility to comply with the regulations at all times.

**1) WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.**

**WAC 173-303-320(2) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that help prevent, detect, or respond to hazards to the public health or the environment.**

**WAC 173-303-340(1) *Required equipment.* All facilities must be equipped with the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:**

**(b) A device, such as a telephone or a hand-held, two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;**

**(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and**

**Observations:** During the inspection, I requested fire extinguisher, spill kit, and radio operability check inspection records for all DST Farms for the month of January 2020. I received the following response from WRPS:

There are no monthly spill kit inspections to provide in response to this request item as these items are not routinely stored or present in the DST Tank Farms or associated change trailers. These items are only in these locations when and as needed to support specific work activities. As identified in RPP-16922, *Environmental Specification Requirements* radios are stored and managed only at 274-AW (AKA the Central Shift Office), and they are checked for operability before use. As has been previously discussed with Ecology, this operability check is not documented in a record, therefore there are no records to provide in response to this request item.

**Action Required:** Within 60 days of receipt of this compliance report, USDOE and WRPS must conduct, document, and submit to Ecology, records showing inspections of all hand-held two-way radios that would be used for summoning emergency assistance and all emergency spill kits that would ever be used in an emergency for the DST System. If this emergency equipment is centralized for the Hanford Tank Farm Contractor and used for numerous treatment, storage, and disposal unit groups, these inspections of this equipment can be conducted for the same numerous treatment, storage, and disposal facility unit groups operating under Permit Condition I.A. of the Hanford Revision 8C Permit.



**2) WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.**

**WAC 173-303-330(1) *Training program.*** The facility owner or operator must provide a program of classroom instruction or on-the-job training for facility personnel. This program must teach personnel to perform their duties in a way that ensures the facility's compliance with this chapter 173-303 WAC, must teach facility personnel dangerous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed, must ensure that facility personnel are able to respond effectively to emergencies, and must include those elements set forth in the training plan required in subsection (2) of this section. In addition:

**(c) This program must be successfully completed by the facility personnel:**

**(i) Within six months after these regulations become effective; or**

**(ii) Within six months after their employment at or assignment to the facility, or to a new position at the facility, whichever is later.**

**(d) Employees hired after the effective date of these regulations must be supervised until they complete the training program; and**

**AND**

**WAC 173-303-200(9) *Personnel training.*** (a) **Training program.** The generator must provide a program of classroom instruction or on-the-job training for facility personnel. This program must teach personnel to perform their duties in a way that ensures the facility's compliance with this chapter, must teach facility personnel dangerous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed, must ensure that facility personnel are able to respond effectively to emergencies, and must include those elements set forth in the training plan required in (b) of this subsection. In addition:

**(iii) This program must be successfully completed by the facility personnel:**

**(A) Within six months after these regulations become effective; or**

**(B) Within six months after their employment at or assignment to the facility, or to a new position at the facility, whichever is later.**

**(iv) Employees hired after the effective date of these regulations must be supervised until they complete the training program;**

**Observations:** I reviewed the redacted training records for the below personnel and compared these records to requirements in TFC-PLN-07 Revision C-0, *Double-Shell Tank Dangerous Waste Training Plan*, dated July 24, 2019.

I observed that Sarah Southerland, NCO–Operations, did not take Course 000001 Hanford General Employee Training since October 24, 2016. This course is required annually in the dangerous waste training plan for NCO–Operations staff. I observed Sarah Southerland took Course 000019 Hanford General Employee Training Refresher on January 7, 2020, however this

course is not listed in the dangerous waste training plan. I observed Sarah Southerland also did not take Course 350166 Waste Surveillance and Inspection Certification and Course 350163 Waste Surveillance and Inspection Operations–PD Card required for NCO–Operations staff.

I observed Derek Giese, NCO–Operations did not take Course 000001 Hanford General Employee Training since November 7, 2016. This course is required annually in the dangerous waste training plan for NCO–Operations. I observed Derek Giese took Course 000019 Hanford General Employee Training Refresher, on October 25, 2019, however this course is not listed in the dangerous waste training plan. I observed Derek Giese also did not take Course 350166 Waste Surveillance and Inspection Certification and Course 350163 Waste Surveillance and Inspection Operations–PD Card required for NCO–Operations staff.

I observed Tim Knaff, Shift Operations Manager/Operations Engineer did not take Course 000001 Hanford General Employee Training since September 9, 2016. This course is required annually in the dangerous waste training plan for Shift Operations Manager/Operations Engineer. I observed Tim Knaff took Course 000019 Hanford General Employee Training Refresher, on September 5, 2019, however this course is not listed in the dangerous waste training plan.

Lino Gutierrez, Shift Operations Manager/Operations Engineer did not take Course 000001 Hanford General Employee Training since December 3, 2015. This course is required annually in the dangerous waste training plan for Shift Operations Manager/Operations Engineer. I observed Lino Gutierrez took Course 000019 Hanford General Employee Training Refresher, on August 23, 2019, however this course is not listed in the dangerous waste training plan.

**Action Required:** Within 60 days of receipt of this compliance report, USDOE and WRPS must do the following:

- Either update TFC-PLN-07 Revision C-0, *Double-Shell Tank Dangerous Waste Training Plan* to include Course 000019 Hanford General Employee Training Refresher as a subset to Course 000001 Hanford General Employee Training **OR**
- Have all the personnel (whose training records were provided in accordance with this compliance inspection), trained to Course 000001.

Additionally, within 60 days of receipt of this compliance report, USDOE and WRPS must do the following:

- Have Nuclear Chemical Operators–Operations Sarah Southerland and Derek Giese take Course 350166 Waste Surveillance and Inspection Certification and Biennially thereafter, and Course 350163 Waste Surveillance and Inspection Operations–PD Card.
- Have Nuclear Chemical Operators–Operations Sarah Southerland and Derek be supervised while conducting Nuclear Chemical Operator–Operations work until they complete the training program.

**3) WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.**

**40 CFR 265.195(a) The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.**

**(b) The owner or operator must inspect at least once each operating day:**

**(1) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;**

**(g) The owner or operator must document in the operating record of the facility an inspection of those items in paragraphs (a) and (b) of this section.**

**Observations:** In the records request, I asked to provide all inspections of alarm panels for 241-AZ Tank Farm for January 19, 2020 through January 25, 2020. On May 22, 2020, I received the following response from WRPS:

The only control room and/or instrument building associated with the 241-AZ Tank Farm is 241-AZ-271, which is the main control room for the 241-AZ-702 building. All equipment contained within, and associated with, this control room are Air Operating Permit related. 241-AZ Tank Farm alarms are now electronically transmitted to, and continuously monitored at, the control room in 274-AW. Therefore, there are no longer any daily inspection records to provide in response to this request.

On May 26, 2020, I sent the following to WRPS regarding the above response.

Did not send 241-AZ tank farm alarm inspection records from Building 274-AW. Please provide these inspection records.

On June 11, 2020, I received the following response from WRPS:

Please see the original response provided to Agenda Item Number 11. As stated previously, the scope of this document request item was explicitly for inspection records for a specific type of equipment (alarm panels) that are physically located within the 241-AZ Tank Farm. The 274-AW building is neither physically located within, connected to, nor classified by the Permittee or current DST OUG Part A permit, as being part of the 241-AZ Tank Farm. In addition, also as per the original response to Agenda Item Number 11, the alarms from the 241-AZ Tank Farm that used to be inspected daily at the physical alarm panels located at the farm were replaced with wireless, electronically transmitted alarms that are continuously monitored at 274-AW. Therefore, there are no additional documents to provide for this item.

I requested all catch tank and pit leak detection system conductivity probe and level indicator inspections/tests for the week of January 5, 2020 through January 11, 2020. On May 22, 2020, I received the following response from WRPS:

RPP-16922 presently includes a daily visual inspection of the observable parts of the annulus conductivity probe leak detector alarm systems and level indicator or level indicating transmitter alarm systems. These systems have all been converted to remote, electronic monitoring. Data from these systems is now wirelessly transmitted to the central control room at 274-AW, where they are continuously monitored. The only observable parts of these systems that remain inside the actual Tank Farms are the wireless transmitting units, which are now included as an element inspected during the general, daily round conducted to visually inspect a farm for aboveground/damage.

On May 26, 2020, I sent the following request back to WRPS:

Did not send DST farm catch tank and pit leak detection system conductivity probe and level indicator inspection/test records from Building 274-AW. Please provide these inspection records.

On June 11, 2020, I received the following response from WRPS regarding this request:

The scope of this document request item was explicitly for inspection records for two different, visual inspections that are performed inside a DST Tank Farm. As per RPP-16922, *Environmental Specification Requirements*, these two inspections are to visually look at the observable parts of the specified, physical pieces of equipment and systems. The 274-AW building is neither physically located within, connected to, nor classified by the Permittee or the current DST OUG Part A permit, as being part of any of the DST Tank Farms. 274-AW is an administrative office building, it is not subject to these two inspections as it is not a DST catch tank or pit, nor is it physically connected to any of the identified and defined DST OUG catch tanks, pits, or their associated ancillary pipelines and equipment. As was stated in the original response to this Agenda Item, the visually observable portions of the specified physical equipment and structures subject to the two requested inspections are inspected daily for each DST Tank Farm. Those daily inspection records have already been provided for the specified date range, and for all the DST Tank Farms. Therefore, there are no additional documents to provide.

Provided records related to daily aboveground inspections for AN, AP, AW, AY, AZ, and SY DST Tank Farms from January 5, 2020 through January 11, 2020. I observed the inspection question was the following:

No visible damage to or leaks from above-ground portion of process and support pits and pit coverings.

I observed these inspections complied with the requirement in 40 CFR 265.195(b)(2) for above-ground portions of the tank system, if any, to detect corrosion or releases of waste, but did not meet the requirements in 40 CFR 265.195(a) or 40 CFR 265.195(b)(1).

**Action Required:** Within 60 days of receipt of this compliance report, USDOE and WRPS must inspect daily, and document in inspection logs, all DST monitoring systems in 274-AW that monitor data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) and all overflow/spill control equipment (e.g., waste-feed

cutoff systems, bypass systems, and drainage systems). Provide Ecology with records showing these inspections occurred and an update to the operating record for dates that these inspections did not occur in the past.

## **Concerns**

- 1) I requested and reviewed the pit leak detector monitoring records for the month of January 2020 for AY-102A. I observed monitoring of the AY-102-WFIT-122 was monitored weekly on January 6, 13, 21, and 27, 2020. 241-AY-102 is an unfit-for-use tank system that has undergone retrieval per the now-closed AY Settlement Agreement (Letter 18-TF-0030). During the effective days of the AY Settlement Agreement, on November 8, 2016, Ecology approved RPP-PLAN-60074, Revision 5, *Tank 241-AY-102 Monitoring Plan*. I could not find a copy of this plan on the Hanford Administrative Record, and I was unable to review it as a part of this inspection.

The DST System is required to follow the interim status regulations pursuant to the Hanford Revision 8C Permit Condition I.A. 40 CFR 265.195(a) requires daily inspections of data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

It appears that inspections of the AY-102A pit leak detector (and maybe others for AY-102), are not being performed according to the regulatory requirements for tank systems. USDOE and WRPS should evaluate these inspections and verify they are performed as required. Ecology recommends their next inspection of the DST System include review of all tank inspections for AY-102 to see if they are conducted according to the required regulatory frequencies.

*To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 509-372-7950 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.*