



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

October 30, 2019

19-NWP-179

By certified mail

Brian T. Vance, Manager
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: H5-20
Richland, Washington 99352

Ty Blackford, President and CEO
CH2M HILL Plateau Remediation Company
PO Box 1600, MSIN: A7-01
Richland, Washington 99352

Re: Dangerous Waste Compliance Inspection on May 30, 2019 at 241-CX Tank System
RCRA Site ID: WA7890008967, Nuclear Waste Program (NWP)
Compliance Index No.: 19663

Dear Brian T. Vance and Ty Blackford:

Thank you for your staff's time during the 241-CX Tank System inspection on May 30, 2019. The Department of Ecology's (Ecology) compliance report of this inspection is enclosed. The report cites no areas of non-compliance and no concerns

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

If you have questions or need further information, please contact me at kathy.conaway@ecy.wa.gov or (509) 372-7890.

Sincerely,

Kathy Conaway
Dangerous Waste Compliance Inspector
Nuclear Waste Program

kc/jlg

Enclosure

cc: See page 2

Brian T. Vance and Ty Blackford
October 30, 2019
Page 2 of 2

19-NWP-179
241-CX Tank System
RCRA Site ID: WA7890008967
NWP Compliance Index No.: 19.663
Inspection Date: May 30, 2019

cc electronic w/enc:

Dave Bartus, EPA
Jack Boller, EPA
Dave Einan, EPA
Mark French, USDOE
Jack George, USDOE
Kathy Higgins, USDOE
Allison Wright, USDOE
Bob Cathel, CHPRC
Darrin Corriell, CHPRC
Ted Hopkins, CHPRC
Linda Petersen, CHPRC
Jon Perry, MSA
Steve Szendre, MSA
ERWM Staff, YN
Ken Niles, ODOE
Shawna Berven, WDOH

John Martell, WDOH
Kathy Conaway, Ecology
Suzanne Dahl, Ecology
Tabitha Liebrecht, Ecology
Jared Mathey, Ecology
Nina Menard, Ecology
John Price, Ecology
Jonathan Rogers, Ecology
Alex Smith, Ecology
Kim Welsch, Ecology
Environmental Portal
Hanford Facility Operating Record
CHPRC Correspondence Control
MSA Correspondence Control
USDOE-RL Correspondence Control

cc w/enc:

Ben Harp, USDOE-ORP
Susan Leckband, HAB
Hanford Administrative Record
NWP Central File
NWP Compliance Index File No.: 19.663

cc w/o enc:

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

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

SITE: 241-CX Tank System
RCRA Site ID: WA7890008967
Inspection Date: May 30, 2019
Site Contacts: Noah Cruz, CH2M Hill Plateau Remediation Company (CHPRC)
Allison Wright, United States Department of Energy (USDOE)
Site Location: Hanford Site
Benton City, WA
At This Site Since: 1943 **NAICS#:** 54171, 56221, and 924110
Current Site Status: Treatment, Storage, and Disposal Facility / Large Quantity Generator

Ecology

Lead Contact: Kathy Conaway **Phone:** (509) 372-7890 **FAX:** (509) 372-7971
Other Representatives: Jonathan Rogers
Report Date: October 30, 2019
Index #: 19.663
Report By: Kathy Conaway

Kathy Conaway *Oct. 30, 2019*
(Signed) (Date)

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 (RCRA) of 1976, 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

The United States Department of Energy (USDOE) is the owner and operator of the 241-CX Tank System and oversees waste management and cleanup activities ongoing at the Hanford Site. CHPRC is contracted by USDOE to co-operate the 241-CX Tank System.

Facility Background

In 2018, the Hanford Site reported as a Large Quantity Generator of hazardous waste on their Dangerous Waste Annual Report.

The 241-CX Tank System is located in the 200 East Area of the Hanford Site in the Strontium Semi-works Complex (SSC), sometimes referred to as the Hot Semi-Works, Strontium Semi-works, 201-C Area, or C-Plant. The 241-CX Tank System is a below grade tank system, consisting of tanks 241-CX-70, 241-CX-71, and 241-CX-72. It also includes ancillary (waste feed) piping. The tanks of this system operated from 1952 to 1958 to support the Reduction-Oxidation Plant (REDOX) and Plutonium Uranium Extraction Plant (PUREX) process pilot studies at the SCC that began in 1952 and ended in 1956. The three tanks received liquid waste from the 201-C Process Building and Hot Shop of the SCC via underground piping.

Tank 241-CX-70 operated for approximately one year during 1952 and 1953; tank 241-CX-71 operated from 1952 to 1957; and tank 241-CX-72 operated for approximately one year during 1957 and 1958. All of the 241-CX tanks received waste from the 201-C Process Building; only tank 241-CX-70 received liquid waste from Hot Shop sink drains. The waste streams contained chemical constituents and Atomic Energy Act (AEA) regulated material at unknown concentrations.

The SSC operated from 1961 to 1967 to support strontium recovery. The 241-CX Tank system did not receive strontium recovery waste. In 1967, the SSC (including the 201-C Process Building and Hot Shop) was permanently removed from service and placed in safe standby mode, after which time strontium recovery waste would not have been generated at these facilities.

The 241-CX Tanks and waste transfer piping remain in place, but have been isolated physically by cutting and permanently sealing off the pipe ends. As a part of the SSC decommissioning, the tanks were verified as physically isolated as of 1985. Tank 241-CX 70 contains only waste residues, while tanks 241-CX-71 and 241-CX-72 contain waste overlain with grout added in 1986 for stabilization.

Tank 241-CX-70 is an underground tank that received waste from the SSC REDOX process pilot studies for approximately one year during 1952 and 1953. The tank is a round concrete vessel, 20 feet in diameter and 15 feet tall, constructed with 12 inch thick concrete walls and top, and a bottom 2 feet thick at the edges. It is lined with stainless steel. Its design capacity is 30,000 gallons. Waste was removed between 1987 and 1991; currently the tank contains only waste residues. An inventory of approximately 750 gallons of radioactive waste is regulated as dangerous waste under Washington Administrative Code (WAC) 173-303 and assigned the dangerous waste codes D002, and D007. This volume remained in Tank 241-CX-70 until December 20, 1991, at which time the waste was placed in containers and transferred to the 224-T Transuranic Waste Storage and Assay Facility. As part of waste removal, access to the manway and risers was required and resulted in excavating to the top soil layer above the tank in 1991. Plywood used to shore the excavation has since collapsed and obscured the view of the tank. The 241-CX-70 underground tank is being managed according to the interim status standards. It is defined as a dangerous waste tank system until closure is completed.

Tank 241-CX-71 is an underground tank used from 1952 to 1957 to neutralize 201-C Process Building condensate, coil, and condenser cooling water prior to disposal. Tank capacity is approximately 3,800 gallons. This waste was first disposed to the 216-C-1 Crib, then to the 216-C-5 Crib. Along with 201-C Process Building waste, tank 241-CX-71 also received Hot Shop sink drain waste. The tank is a round vessel constructed of stainless steel. This tank is approximately 5 feet in diameter, approximately 7 feet high, and was constructed on a reinforced concrete foundation pad. 241-CX-71 tank currently has a bottom of sludge containing chemical compounds, Atomic Energy Act of 1954 (AEA) – regulated materials, and limestone used as a neutralizing agent. In 1986 during semi works decommissioning, the tank was filled with low-density grout to stabilize the tank. The volume of waste and limestone beneath the grout is approximately 900 gallons, which, according to the Part A Form, is considered state-only toxic dangerous waste, WT02. The 241-CX-71 underground tank is being managed according to the interim status standards under Permit Condition I.A in Hanford Facility Resource Conservation and Recovery Act Permit, Revision 8C (the Permit). It is defined as a dangerous waste tank system until closure is completed.

Tank 241-CX-72 is a below grade storage tank that operated approximately one year during 1957 and 1958, and stored 2,305 gallons of SSC waste generated from PUREX process pilot studies. This tank was used as an experimental tank to study the self-concentration of PUREX process waste by the application of heat. The waste in the tank was heated until nearly dry by cylindrical heaters located above each stiffening ring. The tank is a round vessel made of carbon steel. The tank measures 40 inches in diameter and approximately 35 feet long. The tank is enclosed in a six foot diameter caisson made of carbon steel placed on a 12 inch thick reinforced concrete base pad. The design capacity is 2,340 gallons. In 1986, as a part of the SSC decommissioning and to stabilize the tank, low-density grout was injected through the 8 inch risers over approximately 9 feet of sludge, filling the tank with grout to the top of the risers. A containment structure on a reinforced concrete pad was placed over Tank 241-CX-72.

For process information, all SSC waste streams received by the 241-CX Tank System were generated in the 201-C Process Building and/or the adjacent Hot Shop. The SSC ceased transferring waste to the 241-CX tanks in 1958 and ceased operating and generating waste in 1967. Use of the term “hot” indicates operational use of AEA-regulated nuclear materials. All of the 241-CX tanks received 201-C Process Building waste; only 241-CX-71 received Hot Shop sink drain waste. The Hot Shop supported 201-C Process Building operations and generated unspecified waste streams. The Redox process study waste streams included large volumes of aluminum nitrate, zirconium oxide, sodium fluoride, sodium nitrate, and potassium fluoride that were slightly acidic and contained fission products. The PUREX chemical separation process waste streams were mixed waste that included aluminum and zircaloy coating removal waste, condensates, and spent organic solvent waste that contained fission products and sodium nitrate, sodium carbonate, manganese oxide, and were acidic (before being neutralized).

Compliance Background

On June 30, 2015, a non-financial record review inspection of the 241-CX Tank System was performed (Index No. 15.540). There were findings that determined one area of non-compliance associated with inspection log.

On March 24, 2016, a non-financial record review inspection was performed of the 241-CX Tank System, (Index No. 16.557). There were findings that determined one area of non-compliance associated with a missing time record on the inspection log.

On March 9, 2017, a compliance evaluation inspection of the 241-CX Tank System was performed (Index No. 17.586). The purpose of the inspection was an assessment of the soil subsidence and tank integrity of 241-CX-70. The 241-CX-71 tank was also inspected. Tank 241-CX-72 was not part of the inspection. There was no areas of non-compliance associated with the inspection.

On September 26, 2018, a non-financial record review inspection of the 241-CX Tank System was performed (Index No. 18.651). There were no findings or concerns.

Inspection Summary

On May 22, 2019, I sent an email titled, *Ecology Inspection Notice – Compliance Index # 19.663* to USDOE and CHPRC. In the notice, I described that Ecology was conducting a focused compliance inspection of 241-CX Tank System, closure and post closure unit group.

I explained I would perform a physical inspection of the site for the 241-CX Tank System and review permit closure requirements on May 30, 2019. I would begin the inspection at 9:30 am. I said that I would be the lead inspector and my support, Jonathan Rogers.

CHPRC inspection coordinator, Diane Leist, responded to my email telling me that we would meet at 9:30 am in 200 East Area at MO 294, and in conference room 131B for the pre-inspection briefing. She indicated the PPE necessary would be substantial footwear and safety glasses.

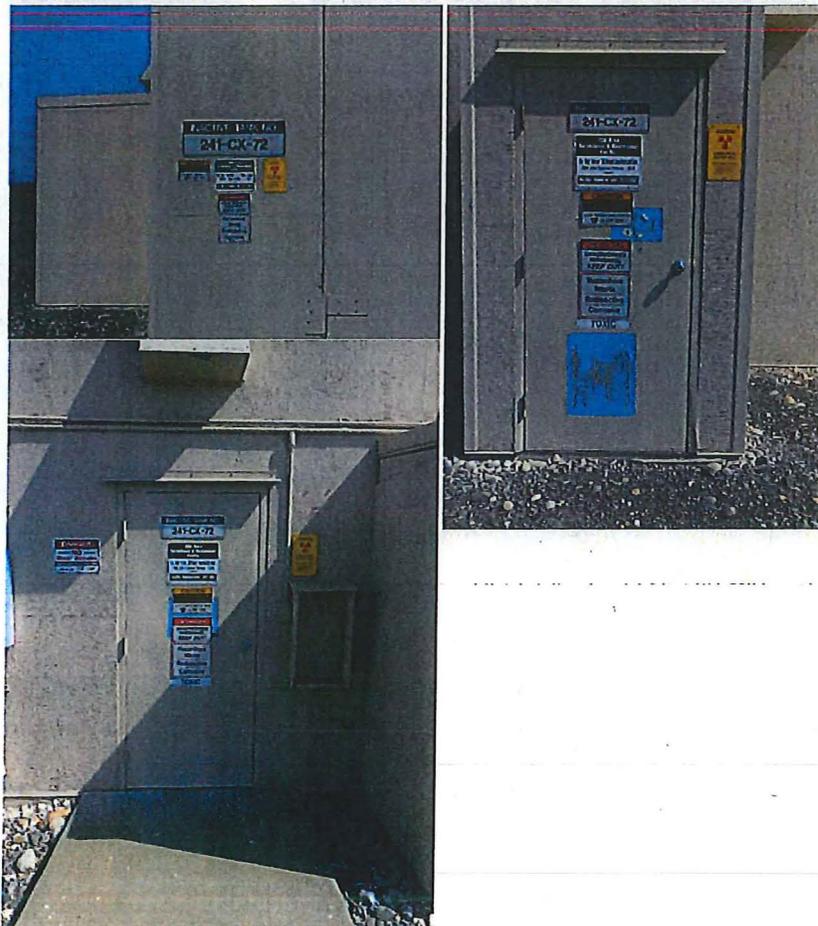
On Thursday, May 30, 2019, at 9:35 am, Jonathan and I arrived at the MO 294 building in the 200 Area to begin the 241-CX Tank System compliance inspection. We began the inspection with introductions and signing of the attendance sheet. The following USDOE-RL and CHPRC personnel signed the attendance sheet for this inspection:

- Allison Wright, USDOE-RL – Inspection Lead
- Kathy Higgins, USDOE-RL – RL- Projects
- Daniel Turlington, CHPRC – Environmental Compliance Officer
- Linda Petersen, CHPRC – Inspection Coordinator
- Noah Cruz, CHPRC – Inspection Coordinator
- Bob Cathel, CHPRC – Environmental Project Manager
- Darin Corriell, CHPRC – CPRM Director
- Ted Hopkins, CHPRC – Environmental Compliance Officer
- Justin Roberts, CHPRC – Field Work Supervisor
- Elis Eberlein, CHPRC – Permit Writer
- Deborah Older, CHPRC – Nuclear Chemical Operator
- Dale Harrison, CHPRC – Operations

- Rod Powell, CHPRC – Health Physic Technician
- Ronald Montgomery, CHPRC - Health Physic Technician
- Sophie Gilkin, CHPRC – Intern
- Carson Vore, CHPRC – Intern

I said that the areas I would like to see today would be signage and previous subsidence areas and discussion on closure, Land Disposal Restrictions (LDR), and tank integrity assessments. Mr. Roberts provided a safety briefing explaining staging area location at MO-294. He mentioned Hanford sirens and a drill being performed at the WESF, a nearby facility.

At 10:00 am, we began our walk-down and because I said that I would not be entering the building that houses Tank 72, a high radiation area, CHPRC determined that Radiological Control Technician was not required for the field inspection. First, I observed the dangerous waste signage for the Tank 72 hot building, I walked around all 4 sides of the building and Jonathan took photos. I observed signs on each side of the building that read “Danger - Unauthorized Personnel Keep Out”. “Hazardous Waste, Tank Waste Hazards include: Radioactive, Toxic, Corrosive”. Signs were posted on the outside of building and on the access doors.



241-CX-72 Building Signage, noting all entry doors. May 30, 2019

Next, we moved over to the 241-CX Tank 70 and Tank 71 locations. The underground tanks are located in the same area as Tank 72, each within a few hundred feet of one another. I observed the 241-CX-70 signs. There were four total signs and in the direction for entry. Signs read "Danger, Unauthorized Personnel KEEP OUT, Hazardous Waste, Corrosive, Toxic, Radioactive. Photos were taken.

I observed the 241-CX-71 signs. There were four total signs at each corner for each approach. Signage read the same as signs for Tank 70 (Photos of Tank 70 and 71 shown below).



241-CX Tank 70 and 71 underground and signage above ground. May 30, 2019

I observed the area around Tank 70 where problems with soil subsidence had been documented in previous inspection reports, had no observable subsidence. In fact, I observed the area had undergone a complete renovation seeing new shoring and new packed soil. Mr. Turlington explained that equipment and material had been brought in to repair, backfill, and stabilize the area around Tank 70. This was done in July 2018. I said that I will ask for information about this in my document request.

I concluded my field inspection around 10:30 am. We returned to MO-294, Room 131, for questions and interviews.

Jonathan asked Noah Cruz about getting the photos taken today. Mr. Cruz took photos for us. He said to include the inspection photos in our document request.

I began asking about permit closure. Ms. Wright said that Mostafa Kamal, CHPRC permitting, would normally answer closure and permit questions. I said that milestone M-037-13 has a closure date of September 30, 2022 for the 241-CX-Tank System. I said that there may be a different path for Tank 72 using CERCLA or coordinated closure. Mr. Eberlein said coordinated closure for all three tanks was approved in 2009. He referenced document DOE/RL-2008-51, Revision 1, *241-CX Tank System Closure Plan*. However it was not included into the Permit Revision 9. He explained that each tank has a pipe they associated with a CERCLA operable unit, 200-IS-1 in the Central Plateau in the miscellaneous pipelines. EPA may have involvement of the Sampling Analysis Plan. I asked if the tank system pipes were cut and if the tanks were grouted? Mr. Eberlein said that pipes were cut at the building side, not the tank side. Tank 70 was grouted under limestone used for neutralization treatment. Tank 71 was not grouted. It was vacuumed out and considered empty. Additionally, Tank 71 risers were grouted making these inaccessible and Tank 70 risers were sealed making it non-assessable. I asked about the current closure plan. Mr. Eberlein said there will be a new closure plan because of the decision for coordinated closure. He said that the CERCLA documentation for coordinated closure has not been initiated and a CERCLA investigation would be the first step. 200-IS-1 covers 300 miles of piping on Hanford and all of the Central Plateau miscellaneous piping. Closure activities will depend on the CERCLA plans. I asked about the Land Disposal Restrictions for the 241-CX Tank System and a storage assessment may be required. He said that the LDR requirements will be part of the discussion with the closure plan.

I was told that there was an Agreement in Principle (AIP) meeting scheduled (mid- June) with Ecology, EPA, and USDOE to discuss rescheduling the milestone 037-13 deliverables.

Next, I asked about what integrity assessments were performed on any of the tank systems as required by WAC 173-303-640. I was told that because the tanks are inaccessible (i.e. risers grouted, pipes cut) an integrity assessment cannot be done. I asked about waste characterization and was told that could have been performed when the tanks were emptied. Stabilization was via the grout process and once performed, no further waste has been introduced into the tanks.

I then asked if groundwater will be a part of the dangerous waste closure plan. Mr. Eberlein said that the 200-BP5 pump and treat facility and 200-IS-1 (groundwater operable unit and pipelines) are under an interim CERCLA action.

Finally, I asked about the work performed at the Tank 70 area where previous soil subsidence had occurred. I said it looked very good today. Mr. Turlington said that the subsidence risk had been mitigated and work had been done for void space stabilization to prevent future subsidence. The work was documented in a work package and in the operating record. Mr. Turlington said that the work was performed so that quarterly inspection frequency may not be needed and annual frequency may return. I said that I would request the work package and any photos associated with the work for review and consider the inspection frequency after my evaluation.

I said I would email a document request asking for today's photos, attendance roster and any other questions and information needed to complete my report. I received a copy of the attendance roster during the out-briefing. I thanked all the men and women that supported and helped me today on the inspection. We left at 11:30 am.

Requested Document Review

I received the following documents within the requested time period.

I received the Ecology inspection photos from May 30, 2019. The five photos were incorporated into this report.

I reviewed the work record SM-16-06590/Y WCN-1, *Perform Routine Work at S&M RARA and WIDS Sites*. This was the work record procedure for performing the backfill and soil stabilization at 241-CX-Tank 70. It described the tools and equipment and any backfill material. It listed the precautions and limitations, access controls, and occupational safety. Section 5.0 described all the work steps for the maintenance activity to correct the subsidence area. This work occurred March 28, 2017.

On the Document Request Form, a description of the work performed following the SM-16-06590 work procedure was provided:

“In order to address the subsidence at 241-CX Tank 70, the cover was removed and the subsidence was filled. Item 2.1 provides the procedure for this work, and Item 2.2 contains the work record for the backfill. Photos of the subsidence and backfill activities and photos of the present state of tank 70 are included in Item 2.3.”

“Item 2.1: SM-16-06590, Perform Routine Work on S&M RARA and WIDS Sites”

“Item 2.2: Work Record – Backfill 241-CX Tank 70. Relevant entries on 3/28/17 state:

- 3/28/17 Entry 1: “Personnel will enter subsidence boundary on the north side ~3 feet to install flags that will help HEO see working boundaries at 241-CX-70.”(HEO = Heavy Equipment Operator)
- 3/28/17 Entry 2: “About 4 trucks of sand were used to backfill 241-CX-70 after a partial cave in of the wooden structure used as shoring for a man hole access point. A mound of sand was left.”

“Item 2.3: Photos of 241-CX Tank 70



Tank 70 Subsidence Repair on March 28, 2017

On the Document Request Form, a written explanation as to why integrity assessments will not be performed for 241-CX Tanks 70, 71, and 72 was:

“The underground tanks are inactive and inaccessible. No integrity assessment was performed nor will be performed before closure of the tanks according to Addendum H, Closure Plan for the 241-CX Tank System.”

The requested information on questions regarding integrity assessments was incomplete and another request went back to CHPRC on July 3, 2019 with a due date of July 22, 2019. Ecology provided the following to CHPRC:

“The response provided to Ecology June 25, 2019 is not adequate or thorough. Ecology wants a more robust explanation on the history of integrity assessments for these three tank systems. Include any and all record information and when the tanks were determined inactive. When and how did the tanks become inaccessible including photos, dates, records. Do you believe you are in compliance with the DW integrity assessment requirements? Explain your answer. How will you comply with this for the Rev. 9 permit?”

An extension was requested by CHPRC via email on July 22, 2019 asking for three weeks. It was granted by Ecology. I received the following information during a meeting at Ecology on August 12, 2019. Jonathan Rogers was my support. The following USDOE-RL and CHPRC personnel were in attendance.

- Mitch Marrott, CHPRC – Inspection Coordinator
- Linda Petersen, CHPRC – Inspection Coordinator
- Jeanne Elkins, CHPRC – Environmental Compliance Officer
- Bob Cathel, CHPRC – Environmental Project Manager
- Diane Leist, CHPRC – Inspection Coordinator
- Allison Wright, USDOE – RL Inspection Coordinator

After introductions, Mr. Cathel began by introducing a series of documents that he believed would explain the questions I had on integrity assessments and closure for the 241-CX Tank Systems. First, Mr. Cathel provided a letter on the 241-CX Tank systems explaining integrity assessments and other dangerous waste requirements. The letter was a copy of what Ecology and USDOE now commonly referred to as the ‘Silver Letter’. Department of Energy letter to Mr. Daniel Silver, Assistant Director of Ecology dated July 6, 1995 (letter # 95-PCA-342). The letter identified non-permitted Treatment, Storage, and Disposal (TSD) facilities and related potential environmental non-compliant conditions at the Hanford Site. The letter included an attachment table consisting of potentially non-permitted TSDs and the regulation status. The table included the 241-CX Tank Systems. It stated that “secondary containment, leak detection, integrity assessments, daily inspection, and spill and overflow prevention are not performed.” Next, Mr. Cathel provided a copy of a Close Out Form Environmental Compliance Issues identified in the USDOE letter 95-PCA-342 dated July 6, 1995. In this Close Out Form, it stated:

“**Compliance Issue Description:** 40 CFR 265 Subpart J establishes a variety of requirements pertaining to hazardous waste tank systems, including provision of secondary containment and leak detection systems for the tank and ancillary equipment (e.g., piping), an assessment to verify the integrity of the existing tank system, daily inspections of the tank systems, and provision of spill and overflow prevention systems. The 241-CX-70,-71, and -72 Tanks do not satisfy these requirements.”

Basis for Close Out: “Consistent with the requirements of 40 CFR 265.196, actions have been taken commensurate with tanks that are deemed **unfit-for-use**, i.e.; (1) use has ceased, (2) waste removal has occurred to a degree that prevents further release to the environment, (3) visible releases are not present, (4) the regulatory authorities have been informed of any known releases associated with the units, and (5) the units are scheduled for closure (pursuant the TPA) in lieu of repair and upgrading. In the specific case of Tank 241-CX-72, Ecology has identified specific actions that must be taken until the 200-SO-1 Workplan deems otherwise.”

Resolution: “Continued compliance with the actions identified for Tank 241-CX-72 and the TPA schedule, M-037-13, for closure represents compliance with the regulatory requirements applicable to these tanks. The interim status standards pertinent to operating hazardous waste tank systems are considered non-applicable to tank systems that are **unfit-for-use and deemed for closure**.”

The form was signed by Ecology and USDOE April 29, 1996 and July 17, 1996.

In a 2008 Closure Addendum H for the 241-CX Tank Systems, the frequency of inspections was determined inspections could be performed annual based on Ecology approval in 2003 (via Ecology letter). Modification of the inspection frequency could be changed by Ecology if needed.

Mr. Cathel provided a copy of a Safety Assessment for the Hanford Strontium Semiworks Tank 241-CX-72 by Ecology dated July 7, 1994. This assessment was to ensure that conditions in Tank CX-72 maintain their integrity. Ecology identified measures to be taken until the 200-SO-1 work plan deems otherwise. The measures were:

- Maintain the building over Tank CX-72 in its present condition.
- Prohibit the use of this building for any purposes other than the current one.
- Preserve access to the drywell in Tank CX-72.
- Conduct monthly inspections to verify compliance with the above conditions.

Next, Mr. Cathel provided a 2010 D&D Project Management Assessment Plan and Report, LDR Assessment of the 241-CX Tank System. For the LDR storage assessment section of the Report, the following was provided:

“241-CX-70 tank was emptied on December 20, 1991, however WAC 173-303-610 closure standards for a TSD unit were not addressed after the tank was emptied. It is accurate for the LDR report to indicate no volume of stored mixed waste (MW) for the 241-CX-70 tank. The waste removed from the 241-CX 70 tank was managed as transuranic MW and stored at the 224-T Transuranic Waste Storage and Assay Facility. 241-CX-70 mixed waste tank system volume is reported at No Inventory. Normally, an empty tank would only be reported in the LDR report when MW is forecasted to be generated within 5 years by removal of the tank and the tank designates as hazardous debris. In this case however, because the three tanks are identified in the Part A Permit Application for the TSD

unit, the 241-CX-70 Tank System will continue to be reported in the LDR report for the 241-CX tank System.”

“241-CX-71 tank is full of sludge and limestone based on records describing the 1990 sampling event. No references estimate the amount of waste in the tank, so a design capacity number will be used to calculate waste volume. The capacity of 1,000 gallon will be used consistent with the Part A. Waste volume for the LDR assessment is estimated at 3.79m³ mixed waste.”

“241-CX-72 tank is calculated to contain 2.66 m³ of mixed waste based on the 11 feet depth at a 3.3 foot diameter cylindrical tank. References have different volume capacities for this tank ranging from 2,000 gallons to 20,000 gallons. The tank has not been sampled. The waste designation for the tank is not complete or accurate. Ecology’s letter in 1994 deferred sampling of 241-CX-72 provided that the four conditions (see bullets above) were met. The conditions have been met and are still being met. The monthly inspection frequency in the Ecology 1994 letter superseded with an annual frequency in 2003.”

The assessment report was signed September 25, 2009. A list of source Documents with references to letters, etc., mentioned above can be found.

Finally, milestone M-037-13 (Lead regulatory agency is Ecology) deliverable is to complete Unit-Specific Closure Requirements according to the closure plan – 241-CX Tank System (241-CX-70/71/72) with a date of September 30, 2022. A copy of a draft Part V Closure Fact Sheet was provided indicating USDOE and Ecology are working towards closure.

I thanked everyone for the documents and discussion indicating this was all very helpful and would provide me the information to complete my report. We adjourned the meeting.

This concluded my review of the requested inspection records for this inspection and written report. I have two recommendations based on my report. First, the subsidence problem at the 241-CX-70 Tank System has been documented in previous Ecology compliance reports. It led to the dangerous waste inspection frequency being changed from annual to quarterly. This inspection has seen and documents verified that the subsidence problem at 241-CX-70 tank has been corrected and resolved. Ecology recommends that the dangerous waste inspection frequency return to annual and the inspection frequency will be conveyed via an Ecology letter by the NWP project.

Second, the documents provided to Ecology on August 12, 2019 indicates that 241-CX Tank System for 70/71/72 has been determined **unfit-for-use** with concurrence by Ecology. Because of the un-fit-for-use status, the 241-CX Tank System should not be subject to all of the WAC-173-303 permit requirements, particularly WAC-173-303-640.

Compliance Problems

I observed no areas of non-compliance during my inspection.

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.

