



OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
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AUG 06 2019

19-ECD-0052

Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State
Department of Ecology
3100 Port of Benton Blvd.
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Ms. Smith:

**CLOSURE EXTENSION REQUEST FOR 241-AY-102 TANK SYSTEM DANGEROUS
WASTE MANAGEMENT UNIT**

This letter requests an extension of the time allowed for closure of the Double-Shell Tank (DST) 241-AY-102 dangerous waste management unit (DWMU). In accordance with the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8c, for the Treatment, Storage, and Disposal of Dangerous Waste (the Sitewide Permit), Permit Condition 1.A, this DWMU is not yet incorporated into the Sitewide Permit and is subject to the interim status requirements of WAC 173-303-400. In accordance with WAC 173-303-400(3)(a), which incorporates by reference 40 CFR 265.113(a) and (b), the time allowed for closure will, of necessity, take longer than 90 days to treat, remove, dispose of all hazardous waste and longer than 180 days to complete closure activities.

The U.S. Department of Energy, Office of River Protection (ORP) has determined that DST 241-AY-102 does not have the integrity to receive additional dangerous and/or mixed waste, but components of the 241-AY-102 Tank System remain necessary to support continued waste management with the DST System.

In accordance with 40 CFR 265.113(b)(1)(i) - Closure, as referenced by WAC 173-303-400(3)(a), ORP has included a demonstration (Attachment), and is requesting that the expected date to begin closure of DST 241-AY-102 be extended to coincide with closure of the 241-AY Tank Farm operating DWMUs in the DST Operating Unit Group. The closure schedule for the DST System Operating Unit Group will be included in the Closure Plan in the reissuance of the Sitewide Permit.

The Attachment describes the DWMU's capability to support 241-AY Tank Farm waste operations, compliance with interim status requirements, and steps ORP will continue to take to prevent threats to human health and the environment.

Ms. Alexandra K. Smith
19-ECD-0052

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If you have any questions, please contact me, or your staff may contact Joe Sondag, Acting Director, Environmental Compliance Division, (509) 373-9179.



Brian T. Vance
Manager

ECD:JMS

Attachment

cc w/attach:

J. Cantu, Ecology
A.S. Carlson, Ecology
S.S. Lowe, Ecology
J.J. Lyon, Ecology
J.W. Mathey, Ecology
N. Menard, Ecology
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Administrative Record
Environmental Portal
WRPS Correspondence

cc w/o attach:

M. Johnson, CTUIR
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G.P. Bohnee, NPT
K. Niles, Oregon Energy
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**Attachment
19-ECD-0052
(4 Pages Excluding Cover Sheet)**

Justification for Extension of the Closure Period

Justification for Extension of the Closure Period for Double-Shell Tank 241-AY-102

Background:

The Double-Shell Tank System (DST) has various types of ancillary equipment including, but not limited to lined pits and pipelines within and between individual tanks and tank farms. Facility personnel manage the 241-AY Tank Farm as part of the overall DST System. The DST System consists of 28 underground double-shell tanks located in 6 tank farms. The 241-AY Tank Farm consists of 2 tanks each with an approximate capacity of one million gallons.

In August 2012, a periodic annulus inspection of Tank 241-AY-102 identified a leak from the primary tank into the secondary containment. Actions necessary for removal of the waste from Tank 241-AY-102 and for performing inspections to determine the cause of the leak were identified through the settlement agreement between the Washington Department of Ecology (Ecology), the U.S. Department of Energy (DOE), Office of River Protection (ORP), and Washington Rivers Protection Solutions LLC (WRPS) (Pollution Control Hearings Board, PCHB No. 14-041c, 241-AY-102 Settlement Agreement, signed and submitted September 29, 2014, effective October 2, 2014). RPP-PLAN-59931, *AY-102 Recovery Project Waste Retrieval Work Plan*, RPP-PLAN-60074, *Tank 241-AY-102 Monitoring Plan* and RPP-PLAN-60610, *Tank 241-AY-102 Contingency Plan - Operations Phase* were followed during waste retrieval.

Retrieval of the waste from Tank 241-AY-102 began March 3, 2016. On December 19, 2017, letter 17-TF-119 transmitted RPP-RPT-60320, *Leak Inspection Report for Tank 241-A Y-102*, to Ecology satisfying Section II.B.5(c) of the Settlement Agreement. This report documented the results of inspection activities and the DOE ORP's decision to proceed with closure of Tank 241-AY-102. On January 17, 2018, in Letter 18-NWP-007, Ecology agreed to the completion of the AY-102 Settlement Agreement.

In September 2018, an interim action was also completed, performing a water rinse of 241-AY-102 tank surfaces in order to remove residual groundwater risk-contributing species, and a caustic rinse to inhibit further metal corrosion in the tank and the annulus.

Although Tank 241-AY-102 can no longer receive dangerous or mixed waste, some ancillary equipment (e.g., pipes, pits) must remain in service to support the management of wastes within Tank 241-AY-101, until closure of the 241-AY Tank Farm. The 241-AY Tank Farm will be closed during closure of the DST System Operating Unit Group (OUG). Closure of the DST System OUG will begin no later than 30 days after the date on which the DST System completes its mission of providing waste feed delivery to the Waste Treatment and Immobilization Plant (WTP) and transfers the known final volume of dangerous waste, or at such time Ecology approves [WAC 173 303 610(3)(c)(ii)(A) and (B)].

The following documentation is maintained in the facility operating record, demonstrating compliance with interim status requirements in accordance with Site-wide Permit Condition I.A.

Facility personnel manage the 241-AY-102 Tank according to the interim status standards for; waste analysis, security, inspections, training, preparedness and prevention, contingency and emergency, and tank systems as outlined below. Copies of the interim status operating documents are maintained in the Operating Record.

WAC 173-303-300 General Waste Analysis			
<p>Tank 241-AY-102 is a closing Dangerous Waste Management Unit (DWMU), and will not accept additional waste for storage. Waste residue remains within the tank and secondary containment.</p> <ul style="list-style-type: none"> • Wastes generated during closure will be characterized in accordance with the Waste Analysis Plan. • Samples collected to support closure will be managed and analyzed according to an approved tank sampling and analysis plan (TSAP). 			
WAC 173-303-310 Security			
<p>Natural and artificial barriers, security devices, and warning signs are used to control access to the active portions of the 241-AY Tank Farm:</p> <ul style="list-style-type: none"> • The 241-AY Tank Farm is fenced, with access provided through doors and gates for authorized personnel only. All entrances into the 241-AY Tank Farm are to remain closed and locked when not staffed for access control. • The DWMU and associated ancillary equipment is located underground or under heavy covers that require special equipment for removal. • Warning signs are posted on doors and gates that provide access to the 241-AY Tank Farm. The warning signs are legible from a distance of 25 feet, are visible from all angles of approach, and bear a legend that says, “Danger—Authorized Personnel Only” or equivalent. 			
WAC 173-303-320 General inspection			
Inspection Item	Method	Frequency	Types of Problems and Evaluation Criteria
Monitor waste level in AY-102 annulus	Obtain instrument waste level readings using; AY102-WSTA-LDT-151 or AY102-WSTA-LDT-152 or AY102-WSTA-LDT-153	Daily	<u>Problem:</u> Liquid level in annulus outside expected range, increasing liquid level or unexplained decrease Compare readings to previous readings to detect trends that may indicate intrusion or a release to the environment. Basis: WAC 173-303-640(6)(b)(ii)
Monitor AY-102 ancillary equipment leak detection	Monitor leak detectors in AY-02A, AY-02B, AY-02C, AY-02D, AY-02E,	Daily, when active	Problem: Liquid accumulated in secondary containment that needs to be removed.

	and POR385-WT-DB-001	transfer is occurring	Monitor secondary containment systems (e.g., pits, encasements) to detect leaks or intrusion within 24 hours. Basis: WAC 173-303-640(6)(b)(ii)
Monitor liquid level in leak detection pit (LDP) AY-102A	Measure liquid level using handheld dip tube level monitor or electronic level instrument AY102-WFIT-122 or AY102-WSTA-WFIT-122	Weekly	Problem: Unexplained increase in accumulated liquid in LDP. Continue this monitoring to demonstrate there is no release to the environment through the secondary liner. Basis: Best Management Practice
Monitor pH in LDP AY-102A If pH >9.0 then perform sampling to determine if waste has breached secondary containment.	Measure pH level using handheld pH test paper or electronic pH meter	Quarterly	Problem: Significant change in the pH as determined by field measurements. Continue this monitoring to demonstrate the liquid collected in the AY-102 LDP is not derived from a leak from the secondary liner. Basis: Best Management Practice

WAC 173-303-330 Personnel Training

The Dangerous Waste Training Plan meeting the requirements of WAC 173-303-330 for Tank 241-Y-102 Dangerous Waste Management Unit (DWMU) address the following:

- For each position related to the dangerous waste management of the facility, the job title, job description, and the name of the employee filling each job.
- A written description of the type and amount of both introductory and continuing training required for each position.
- Records documenting facility personnel have received and completed the training required by this section.

Introductory and continuing training programs are designed to prepare personnel to maintain the Tank 241-AY-102 DWMU in a safe, effective, and environmentally sound manner. In addition to preparing personnel to manage and maintain the Tank 241-AY-102 DWMU under pre-closure conditions, the training programs ensure that personnel are prepared to respond in a prompt and effective manner should abnormal or emergency conditions occur.

WAC 173-303-340 Preparedness and Prevention

The purposes of preparedness and prevention are to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of dangerous waste constituents to air, soil, surface

water, or groundwater. The requirements of WAC 173-303-340 can be found throughout various procedures and include:

- Internal/External communications
- Emergency equipment
- Fire control
- Arrangements with local authorities

WAC 173-303-350 Contingency plan and emergency procedures

WAC 173-303-360 Emergencies

The Building Emergency Plan for 241-AY Tank Farm (RPP-27869) describes both the facility hazards and the basic responses to upset and/or emergency conditions within the facility. These events may include spills or releases caused by processing, fires and explosions, transportation activities, movement of materials, packaging, storage of hazardous materials, or natural and security contingencies.

When used in conjunction with Permit Attachment 4, Hanford Emergency Management Plan, the plans meet the requirements for contingency planning as required by WAC 173-303.

The Building Emergency Plan covers the following:

- Building emergency response organization
- Plan implementation
- Facility hazards (hazardous materials, industrial hazards, dangerous/mixed waste, radioactive materials, criticality)
- Potential emergency conditions (facility operations emergencies, natural phenomena, security contingencies)
- Incident response (protective action, emergencies, prevention of recurrence, natural phenomena, security)
- Termination of event, incident recovery, and restart of operations
- Emergency equipment
- Coordinator agreements
- Required reports
- Plan location and amendments

WAC 173-303-640 Tank Systems

Signs are posted at entrances to the active portions 241-AY Tank Farm identify hazardous waste with the toxic and corrosive hazards of the waste residue in the 241-AY-102 tank system.

40 CFR 265 Subpart G as referenced by WAC 173-303-400; WAC 173-303-640 Closure and post-closure

A closure plan specific for DST DWMUs was developed to comply with the requirements of 40 CFR 265 Subpart G, Closure and Post-Closure, WAC 173-303-640. A closure plan for DST DWMUs was submitted to the Washington State Department of Ecology in the DST System Dangerous Waste Permit Application (DOE/RL-90-39).