



U.S. Department of Energy
Hanford Site

April 7, 2021

21-ECD-001143

Mr. David Bowen, Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

RECEIVED
Apr 8, 2021
Department of Ecology
NWP - Richland

Dear Mr. Bowen:

COMMENTS TO PROPOSED CLASS 3 PERMIT MODIFICATION 8C.2020.5D FOR THE LIQUID EFFLUENT RETENTION FACILITY AND 200 AREA EFFLUENT TREATMENT FACILITY

The attached comments are provided in response to Washington State Department of Ecology letter 21-NWP-001 dated February 18, 2021. The letter provided the proposed permit modification 8C.2020.5D to Part III, Operating Unit Group 3, Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility, of the "Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage and Disposal of Dangerous Waste" (Sitewide Permit). These comments are submitted as part of the 45-day comment period, which started February 22 and ends April 8, 2021.

If you have any questions, please contact us, or your staff may contact Chris Kemp, Director, Environmental Compliance Division, Office of River Protection, on (509) 373-0649.

Brian T. Vance
Manager
Office of River Protection

John R. Eschenberg
President and Project Manager
Washington River Protection Solutions LLC

ECD:RLE

Attachment

cc: See page 2

cc w/attach:

J. Cantu, Ecology
D. McFadden, Ecology
^Operating Record (HMIS)
Administrative Record
Environmental Portal
WRPS Correspondence

cc w/o attach:

J. Bell, NPT
R. Buck, Wanapum
A. S. Carlson, Ecology
L. Contreras, YN
S. L. Dahl, Ecology
D. Einan, EPA
J. L. Foster, WRPS
K. G. Hall, Ecology
J. T. Hamilton, WRPS
A. Mayenna, Ecology
M. Murphy, CTUIR
J. H. Temple, Ecology
S. A. Thompson, WRPS
E. J. Van Mason, WRPS
M. Woods, Oregon Energy

Attachment
21-ECD-001143

Comments to Proposed Class 3 Permit Modification 8C.2020.5D for the Liquid Effluent
Retention Facility and 200 Area Effluent Treatment Facility

(7 Pages Including Cover Sheet)

Comments to Proposed Class 3 Permit Modification 8C.2020.5D for the Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility

Comment 1, Response to Comments. According to the response to comments, Response to I-3-2 and I-4-2, *“Ecology shares similar concerns with the public as to the adequacy of leak detection systems for the 4”-WTP-001-M17 transfer line. As a result, Ecology has drafted permit conditions with this permit modification.”*

Public Comments I-3-1, I-3-2, I-4-1, I-4-2 commented to *“Require Protective Leak Inspections: Ensure that the timing and rigor of leak detection inspections are not decreased by the permit modification.”*

The public commented on the frequency of inspections, and did not comment that additional leak detection equipment should be installed on the existing transfer line as suggested in Ecology’s Response to I-3-2 and I-4-2, which states: *“Ecology shares similar concerns with the public as to the adequacy of leak detection systems for the 4”-WTP-001-M17 transfer line. As a result, Ecology has drafted permit conditions with this permit modification. The draft permit conditions were drafted in response to public comments and require USDOE to upgrade the leak detection systems for this line prior to use. This upgrade will require a permit modification and the public will have an opportunity to review the permit changes and any relevant documentation.”*

The assertion that additional leak detection equipment should be installed on these lines as a means to address public comments is a remedy that goes far beyond addressing the concerns expressed by the public.

Comment 2, Delete Proposed Permit Condition III.3.J.2: *“The Permittees must upgrade the existing leak detection system for the Waste Treatment and Immobilization Plant-Effluent Management Facility (WTP-EMF) transfer line to LERF Catch Basin 242AL-41 and 242AL-42 (4”-WTP-001-M17) to meet the requirements of WAC 173-303-640(4)(c)(iii).”*

This condition exceeds the scope of this permit modification. The 4” WTP-001-M17 transfer line from the Waste Treatment and Immobilization Plant Effluent Management Facility (WTP EMF) to LERF Catch Basin 242AL-42 and associated leak detection system was determined to meet the requirements of WAC 173-303-640(4)(c)(iii), with issuance of the *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967, (20-NWP-079, May 19, 2020).*

The Permittees did not propose changes to the Permit for the 4”-WTP-001-M17 transfer line from WTP-EMF to LERF Catch Basin 242AL-42 and associated leak detection system. The proposed change is to connect a transfer line from Basin 41 to the 4”-WTP-001-M17 transfer line and add additional leak detection at LERF Catch Basin 242AL-41.

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While extensive communication has occurred between the Permittees and Ecology, the Permittees have not received a satisfactory explanation of Ecology's regulatory basis for stating the existing leak detection on this transfer line is not compliant with WAC 173-303-640. The Permittees understand WAC 173-303-640(4)(c)(iii) provides two alternative means to provide adequate leak detection. One is to show that a leak, of an unspecified de minimis leak rate, can be detected within 24 hours. The other option allows for a demonstration that site conditions or existing technologies allow for detection as soon as practicable if not detected within 24 hours. The Permittees have provided information showing a leak of approximately 1.6 gallons per hour can be detected within 24 hours. Additionally, the Permittees generated report RPP-RPT-61976, *Effluent Management Facility (EMF) to Liquid Effluent Retention Facility (LERF) Process Condensate Transfer Pipeline Leak Detection*, concluding the site conditions and nature of the already installed pipeline and available technologies could not be well adapted to install additional equipment that are also effective for leak detection and reliable for operation. The Permittees do not interpret WAC 173-303-640(4)(c)(iii) to be a mandate that drives development of new technology or adaptation of technologies for retrofit on a system for which they are not well adapted.

Furthermore, the Permit conditions must be consistent with the provisions of the Hanford Federal Facility Agreement and Consent Order (HFFACO). All schedules of compliance must be maintained and controlled in the HFFACO to ensure proper consistency and prioritization of work. The Permit conditions must not place the DOE, through its own actions, or those of its contractors, in a position where the conditions of the Permit only can be met by a violation of the HFFACO. This condition risks impact to the Consent Decree for Start LAW Cold Commissioning by 12/31/2022, and Complete LAW Hot Commissioning by 12/31/2023..

Upgrading the Permitted leak detection system could require significant modifications to the piping; thereby risking delays to the overall mission at Hanford and Direct Feed Low-Activity Waste (DFLAW). Delay of DFLAW would result in a violation of the HFFACO; and would be more harmful to human health and the environment than utilizing the existing Permitted leak detection system for the 4"-WTP-001-M17 waste transfer system, which is arguably in compliance with the regulatory requirements, since WAC 173-303-640(4)(c)(iii) does not specify an assumed leak rate, only that leaks must be detectable within 24 hours unless other criteria is met.

Key DFLAW HFFACO Milestones that could be impacted.

- Milestone M-062-54B, 12/31/2022, *Achieve Substantial Completion of LAW Pretreatment Capability Construction for DFLAW Initial Ops.*
- Milestone M-062-54, 4/30/2023, *Low Activity Waste Pretreatment Capability; Cold Commissioning Complete.*

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- Milestone M-062-53, 8/15/2023, *Effluent Management Facility (EMF) Cold Commissioning Start.*
- Milestone M-062-52, 6/30/2023, *Achieve Substantial Completion of Secondary Waste Construction Necessary for LAW Hot Commissioning.*

Comment 2, Delete Proposed Permit Condition III.3.J.2.a: “The upgrades must include the installation of additional leak detectors along the 4”-WTP-23 001-M17 line.”

This condition exceeds the scope of this permit modification. The 4”-WTP-001-M17 transfer line from the WTP EMF to LERF Catch Basin 242AL-42 and associated leak detection system was determined to meet the requirements of WAC 173-303-640(4)(c)(iii), with issuance of the *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967 (20-NWP-079, May 19, 2020).*

Permit conditions to provide a leak detection report considering alternate technologies and site conditions was added by Ecology in two separate permit modifications (20-NWP-079 and 19-NWP-182, *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967*).

While extensive communication has occurred between the Permittees and Ecology, the Permittees have not received a satisfactory explanation of Ecology’s regulatory basis for stating the existing leak detection on this transfer line is not compliant with WAC 173-303-640. The Permittees understand WAC 173-303-640(4)(c)(iii) provides two alternative means to provide adequate leak detection. One is to show that a leak, of an unspecified de minimis leak rate, can be detected within 24 hours. The other option allows for a demonstration that site conditions or existing technologies allow for detection as soon as practicable if not detected within 24 hours. The Permittees have provided information showing a leak of approximately 1.6 gallons per hour can be detected within 24 hours. Additionally, the Permittees generated report RPP-RPT-61976, *Effluent Management Facility (EMF) to Liquid Effluent Retention Facility (LERF) Process Condensate Transfer Pipeline Leak Detection*, concluding the site conditions and nature of the already installed pipeline and available technologies could not be well adapted to install additional equipment that are also effective for leak detection and reliable for operation. The Permittees do not interpret WAC 173-303-640(4)(c)(iii) to be a mandate that drives

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development of new technology or adaptation of technologies for retrofit on a system for which they are not well adapted.

The Permit conditions must be consistent with the provisions of the Hanford Federal Facility Agreement and Consent Order (HFFACO). All schedules of compliance must be maintained and controlled in the HFFACO to ensure proper consistency and prioritization of work. The Permit conditions must not place the DOE, through its own actions, or those of its contractors, in a position where the conditions of the Permit only can be met by a violation of the HFFACO. This condition risks impact to the Consent Decree for Start Low Activity Waste (LAW) Cold Commissioning by 12/31/2022, and Complete LAW Hot Commissioning by 12/31/2023.

Upgrading the Permitted leak detection system could require significant modifications to the piping; thereby risking delays to the overall mission at Hanford and Direct Feed Low-Activity Waste (DFLAW). Delay of DFLAW would result in a violation of the HFFACO; and would be more harmful to human health and the environment than utilizing the existing Permitted leak detection system for the 4"-WTP-001-M17 waste transfer system, which is arguably in compliance with the regulatory requirements since WAC 173-303-640(4)(c)(iii) does not specify an assumed leak rate, only that leaks must be detectable within 24 hours unless other criteria is met

See Comment 1 for Key DFLAW HFFACO Milestones that could be impacted.

Comment 3, Delete Proposed Permit Condition III.3.J.2.b: "The Permittees must submit a permit modification for upgrades to the leak detection system for the 4"-WTP-001-M17 line. The permit modification must include the final design of the upgrades."

This condition exceeds the scope of this permit modification. The 4"-WTP-001-M17 transfer line from the WTP EMF to LERF Catch Basin 242AL-42 and associated leak detection system was determined to meet the requirements of WAC 173-303-640(4)(c)(iii), with issuance of the *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967, (20-NWP-079, May 19, 2020)*.

Comment 4, Delete Proposed Permit Condition III.3.J.2.c: "The Permittees must submit a schedule to Ecology for completing the permit modification and the upgrades within 30 days of the effective date of this permit condition."

This condition exceeds the scope of this permit modification. The 4"-WTP-001-M17 transfer line from the WTP EMF to LERF Catch Basin 242AL-42 and associated leak detection system was

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determined to meet the requirements of WAC 173-303-640(4)(c)(iii), with issuance of the *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967, (20-NWP-079, May 19, 2020)*.

Implementation of the required schedule relies on Ecology actions to assure completion; and therefore Permittee compliance, by the deadline provided in Permit Condition III.3.J.2.c. The permittees have no assurance of Ecology actions or the permit modification process will support the deadline imposed by Permit Condition III.3.J.2.d. Permittee reliance on Ecology to take actions on permit conditions that cannot be made enforceable for Ecology in order for the permittees to achieve permit compliance is not a reasonable proposition.

In order to undertake design, permitting, and installation of additional leak detection equipment, the permittees must have certainty that the new equipment will operate as designed, without false alarms or other issues that would be a detriment to DFLAW operations. Doing so requires development or adaptation of technologies to unique circumstances of current installed line; a significant challenge that will take a significant time commitment. Ecology has repeatedly stated they believe current technologies could be implemented on this line; however, as the design authority and operators of this line, the Permittees can assure Ecology that such design and installation is not as feasible as Ecology seems to expect.

The permittees request additional time to implement Permit Conditions III.3.J.2 through III.3.J.2.d, if the permit conditions must remain, and WTP EMF transfers be allowed to proceed so as to not interfere with DFLAW operation. The relative low hazard of EMF liquids and reliable end point leak detection support this approach.

Comment 5, Delete Proposed Permit Condition III.3.J.2.d: “The upgraded leak detection system must be operational prior to waste transfers from WTP to the LERF.”

This permit condition exceeds the scope of this permit modification. The 4”-WTP-001-M17 transfer line from the WTP EMF to LERF Catch Basin 242AL-42 and associated leak detection system was determined to meet the requirements of WAC 173-303-640(4)(c)(iii), with issuance of the *Final Class 3 Permit Modification 8C.2020.6F to the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 3, Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF), WA7890008967, (20-NWP-079, May 19, 2020)*.

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In addition, requiring an upgraded leak detection system to be operational prior to waste transfers from WTP to the LERF risks delay in startup of WTP operations. This proposed permit condition does not take into consideration that Permit Condition III.3.J.2.e, requires the Permittees to submit the tightness test for 4"-WTP-001-M17 waste transfer system to the department prior to receipt of dangerous waste in accordance with WAC 173-303-640(3)(e); and Permit Condition III.3.J.2, requires this tightness test be performed for this transfer line at a frequency of every 10 years. Furthermore, Permit Condition III.3.P.1.b requires the Permittees to conduct periodic integrity assessments according to the schedule. The integrity assessments are conducted every 10 years, and are certified by an Independent Qualified Registered Professional Engineer.

The tightness testing of the 4"-WTP-001-M17 primary and encasement lines is a control in place to ensure the pipelines do not leak, in addition to the integrity assessments performed by an IQRPE who certifies that this transfer line is structurally sound and does not leak.

The Permit conditions must be consistent with the provisions of the HFFACO. All schedules of compliance must be maintained and controlled in the HFFACO to ensure proper consistency and prioritization of work. The Permit conditions must not place the DOE, through its own actions, or those of its contractors, in a position where the conditions of the Permit only can be met by a violation of the HFFACO. This condition risks impact to the Consent Decree for Start LAW Cold Commissioning by 12/31/2022, and Complete LAW Hot Commissioning by 12/31/2023.

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