



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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September 1, 2021

21-NWP-138

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

Valerie McCain, Project Director
Bechtel National, Inc.
2435 Stevens Center Place, MSIN: MS19-A
Richland, Washington 99354

Re: Approval of 24590-WTP-PCN-ENV-20-004, Class ¹1 Modification 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 10, Waste Treatment and Immobilization Plant (WTP Permit), WA7890008967*

Reference: See page 2

Dear Brian T. Vance and Valerie McCain:

The Department of Ecology approves the referenced Class ¹1 Modification. The approved Hanford Facility RCRA Permit Modification Notification Form is enclosed.

This modification provides updates to Chapter 4, Chapter 4G and four Piping and Instrumentation Diagrams (P&IDs) to incorporate process changes associated with the waste feed transfer line flushing strategy for the Direct Feed Low-Activity Waste Configuration.

These changes are listed on the enclosure and replace the corresponding permit chapters and P&IDs in Appendix 9.2 and 13.2 of the WTP Permit.

If there are any questions, please contact Mandy Jones, Permit Coordinator, at (509) 372-7916 or mandy.jones@ecy.wa.gov.

Sincerely,

A handwritten signature in blue ink that reads "Stephanie Schleif".

Stephanie Schleif
Deputy Program Manager
Nuclear Waste Program

yl/ag
Enclosure

cc: See page 2

Reference: Letter 21-ECD-001786, dated July 28, 2021, "Submittal of Hanford Facility Resource Conservation and Recovery Act Permit Modification Notification Form 24590-WTP-PCN-ENV-20-004, Waste Feed Transfer Line Flushing Strategy"

cc electronic w/enc:

Dave Bartus, EPA	Debra Alexander, Ecology
Dave Einan, EPA	Jennifer Cantu, Ecology
Kaylin Burnett, USDOE-ORP	Annette Carlson, Ecology
Tom Fletcher, USDOE-ORP	Nitya Chandran, Ecology
Roger Gordon, USDOE-ORP	Suzanne Dahl, Ecology
Lori Huffman, USDOE-ORP	Jay Decker, Ecology
Delmar Noyes, USDOE-ORP	Tracy Gao, Ecology
Daniel Pearson, USDOE-ORP	Katie Hall, Ecology
Bryan Trimberger, USDOE-ORP	Mandy Jones, Ecology
Tony McKarns, USDOE-RL	Yoana Lucatero, Ecology
Sheila Davis, BNI	Jeff Marusich, Ecology
Bob Haggard, BNI	Dan McDonald, Ecology
Bret Peck, BNI	Oliver Wang, Ecology
Brittany Sparks, BNI	Nancy Ware, Ecology
Jon Perry, HMIS	Environmental Portal
Mason Murphy, CTUIR	Hanford Administrative Record
Jack Bell, NPT	Hanford Facility Operating Record
Rex Buck, Jr., Wanapum	BNI Correspondence Control
Laurene Contreras, YN	EPA Region 10 Hanford Field Office
ERWM Staff, YN	Correspondence Control
Steve Wiegman, HAB	HMIS Correspondence Control
David Reeploeg, Hanford Communities	USDOE-ORP Correspondence Control
Max Woods, ODOE	USDOE-RL Correspondence Control
Gail Laws, WDOH	

Quarter Ending: June 30, 2021

24590-WTP-PCN-ENV-20-004

RCRA Operating Record Number: R605

Hanford Facility RCRA Permit Modification Notification Form
Part III, Operating Unit Group 10
Waste Treatment and Immobilization Plant

Index

Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant
Update Permit chapters and associated design documents to incorporate process changes associated with the DFLAW configuration waste feed transfer line flushing strategy.

Submitted by Co-Operator:


Reviewed by ORP Program Office:

Robert Haggard
Robert D. Haggard

05/04/2021

Date

Thomas W. Fletcher

 Digitally signed by THOMAS FLETCHER
Date: 2021.07.27 16:01:18 -07'00'

Date



This document has been digitally signed using the Electrosign process.

Document for Signature

Document Number: 24590-WTP-PCN-ENV-20-004 **Rev:** 0

Participants	Signature	Completed	Status	Result	Comments
Final Approver	5/4/2021 3:13 PM				
Haggard, Robert		5/4/2021 3:51 PM	Completed	Approve	

Quarter Ending: June 30, 2021

24590-WTP-PCN-ENV-20-004

RCRA Operating Record Number: R605

Hanford Facility RCRA Permit Modification Notification Form																											
Unit: Waste Treatment and Immobilization Plant		Permit Part: Part III, Operating Unit Group 10																									
<p><u>Description of Modification:</u></p> <p>This modification updates relevant permit chapters and design information related to the process for flushing the waste transfer pipeline between WTP and the Hanford Tank Farms during Direct Feed Low-Activity Waste (DFLAW) operations. The flushing process for the waste transfer line from the Interim Low-Activity Waste Storage Tank (ILST or AP-106) to the LAW Facility must be sufficient to prevent accumulation of solids and to mitigate corrosion concerns. The Tank Operations Contractor (TOC), in coordination with WTP, have completed an evaluation of waste transfer line flushing strategies. The evaluation's purpose was to determine the most efficient flushing strategy within the DST system infrastructure and functionality and mitigate the volume of flush water sent to the WTP Effluent Management Facility (EMF) for processing. Factors related to flushing frequency, the flushing media and related routing were included. (Reference: 24590-WTP-RPT-MGT-18-017, <i>Direct Feed Low Activity Waste Feed Transfer Line Flushing Evaluation</i>)</p> <p>The flushing frequency recommended per this evaluation includes flushing only in the case of planned or unplanned system outages of greater than 14 calendar days. Between feed delivery transfers the line would remain full of treated feed and the motive force to deliver LAW feed would be provided from the feed delivery pump, minimizing corrosion of tank waste transfer lines while avoiding accumulation of solids and also minimizing the addition of flush media to the system.</p> <p>The above-referenced evaluation also recommends flushing the transfer line between LAW and the ILST (AP-106) using EMF process condensate instead of flushing these lines with water, providing a process that allows beneficial reuse of the condensate, reducing required flushing volumes to the EMF and presenting a lower cost alternative to expanding flushing functionality and infrastructure at the Tank Farms. EMF process condensate will be routinely sampled and analyzed as a matter of process to ensure compliance with the Liquid Effluent Retention Facility (LERF) and Effluent Treatment Facility (ETF) acceptance limits. This sampling would ensure that the chemical and radiological composition when used as flush media would be well known and characterized. The existing equipment within EMF would be used to route process condensate into the feed transfer line and flush the transfer line from WTP back to the ILST. Any flush material received in the ILST would be mixed with the contents of the tank and returned to the WTP LAW facility during subsequent waste transfers.</p> <p>This Permit modification updates Chapter 4 and Chapter 4G to reflect the above recommendations, which are being incorporated into WTP processes and design documents. The redline copies of the affected chapters are attached for review. These process adjustments do not affect any of the current permit conditions.</p> <p>The following design documents in the DWP have also been revised to reflect these changes.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="4" style="text-align: left; padding: 5px;">Appendix 9.2: Low-Activity Waste (LAW) Building Piping & Instrumentation Diagrams</th> </tr> </thead> <tbody> <tr> <td style="width: 15%; padding: 5px;">Replace:</td> <td style="width: 35%; padding: 5px;">24590-LAW-M6-LCP-00001001, Rev. 2^(*)</td> <td style="width: 15%; padding: 5px;">With:</td> <td style="width: 35%; padding: 5px;">24590-LAW-M6-LCP-00001001, Rev. 3</td> </tr> <tr> <th colspan="4" style="text-align: left; padding: 5px;">Appendix 13.2: Effluent Management Facility Piping & Instrumentation Diagrams</th> </tr> <tr> <td style="padding: 5px;">Replace:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00010001, Rev. 3^(**)</td> <td style="padding: 5px;">With:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00010001, Rev. 4</td> </tr> <tr> <td style="padding: 5px;">Replace:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00002006, Rev. 2</td> <td style="padding: 5px;">With:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00002006, Rev. 3</td> </tr> <tr> <td style="padding: 5px;">Replace:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00006004, Rev. 2</td> <td style="padding: 5px;">With:</td> <td style="padding: 5px;">24590-BOF-M6-DEP-00006004, Rev. 3</td> </tr> </tbody> </table> <p style="margin-top: 10px;">These drawings are attached to the modification for inclusion in DWP Appendices 9.2 and 13.2. Changes on the drawings are bubbled for identification. Additional notes/details include:</p> <ul style="list-style-type: none"> • (*) 24590-LAW-M6-LCP-00001001: the version included in DWP Appendix 9.2 is Revision 1. Revision 2 is currently in the formal submittal process via PCN 24590-LAW-PCN-ENV-20-002. 				Appendix 9.2: Low-Activity Waste (LAW) Building Piping & Instrumentation Diagrams				Replace:	24590-LAW-M6-LCP-00001001, Rev. 2 ^(*)	With:	24590-LAW-M6-LCP-00001001, Rev. 3	Appendix 13.2: Effluent Management Facility Piping & Instrumentation Diagrams				Replace:	24590-BOF-M6-DEP-00010001, Rev. 3 ^(**)	With:	24590-BOF-M6-DEP-00010001, Rev. 4	Replace:	24590-BOF-M6-DEP-00002006, Rev. 2	With:	24590-BOF-M6-DEP-00002006, Rev. 3	Replace:	24590-BOF-M6-DEP-00006004, Rev. 2	With:	24590-BOF-M6-DEP-00006004, Rev. 3
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- (**) 24590-BOF-M6-DEP-00010001, Revision 3 is currently in informal review in PCN 24590-BOF-PCN-ENV-20-003. Changes reflected in Revision 4 are specific to adjustment of line flushing protocols.


WAC 173-303-830 Modification Class:	Class 1	Class 1 ¹	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830, Appendix I Modification citation number: N/A

Enter wording of WAC 173-303-830, Appendix I Modification citation:

In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class '1' modification. WAC 173-303-830(4)(d)(ii)(A) states. "Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."

Please note that source, special nuclear, and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA) are regulated at the U. S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts that pursuant to AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

Modification Approved/Concur: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Denied (<i>state reason below</i>) <u>Reason for denial:</u>	Reviewed by Ecology: Digitally signed by  Schleif, Stephanie (ECY) Date: 2021.09.01 13:27:39 -07'00'
	S. Schleif _____ Date _____