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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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September 15, 2017

17-NWP-121

Mr. Kevin W. Smith, Manager  
Office of River Protection  
United States Department of Energy  
PO Box 450, MSIN: H6-60  
Richland, Washington 99352

Ms. Peggy McCullough, Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place, MSIN: H4-02  
Richland, Washington 99354

Re: Approval of 24590-LAW-PCN-ENV-10-001, 24590-LAW-PCN-ENV-12-004, 24590-LAW-PCN-ENV-12-005, Class 1 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 Mr. Smith and Ms. McCullough:

The Department of Ecology (Ecology) approves the referenced Class 1 Modification. The approved Hanford Facility RCRA Permit Modification Notification Forms are enclosed.

This modification provides the updated System Logic Descriptions for the Low-Activity Waste (LAW) Facility Radioactive Liquid Waste Disposal System, LAW Melter Feed Process System, and LAW Facility Concentrate Receipt Process System.

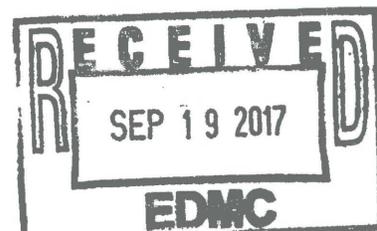
These changes are listed on the enclosure and replace the corresponding permit System Logic Descriptions in Appendix 9.13 of the WTP Permit.

In addition, the United States Department of Energy - Office of River Protection, Bechtel National Inc. (Permittees) and Ecology believe there is enough information at this time to populate Permit Conditions Table III.10.H.C with applicable controls and/or instrumentation, as required by Washington Administrative Code 173-303-640(5)(b)(ii). The Permittees agreed to move forward with including applicable controls and instrumentation in Permit Tables.

If you have any questions, please contact Annette Carlson, WTP Permit Coordinator, at (509) 372-7897 or [Annette.carlson@ecy.wa.gov](mailto:Annette.carlson@ecy.wa.gov).

Sincerely,

Suzanne Dahl  
Dangerous Waste Permit Manager  
Nuclear Waste Program  
ac/mrb



Mr. Smith and Ms. McCullough  
September 15, 2017  
Page 2 of 2

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Enclosure

Reference: Letter 17-ECD-0047, dated July 12, 2017, from R.G. Hastings, USDOE-ORP, to A.K. Smith, Ecology, "Submittal of Multiple Hanford Facility Resource Conservation and Recovery Act Permit Modification Notification Forms, 24590-LAW-PCN-ENV-10-001, 24590-LAW-PCN-ENV-12-004, 24590-LAW-PCN-ENV-12-005"

cc electronic w/enc:

Dave Bartus, EPA  
Craig Cameron, EPA  
Mary Beth Burandt, USDOE  
Joanne Grindstaff, USDOE  
Bill Hamel, USDOE  
Lori Huffman, USDOE  
Gae Neath, USDOE  
Delmar Noyes, USDOE  
Bryan Trimberger, USDOE  
Barry Curn, BNI  
Brad Erlandson, BNI  
Serena Greagor, BNI  
Roger Landon, BNI  
Sandi Murdock, BNI  
Dan Robertson, BNI  
John Perry, MSA  
Rose Ferri, YN

Ken Niles, ODOE  
Gail Laws, WDOH  
Deborah Alexander, Ecology  
Jennifer Cantu, Ecology  
Annette Carlson, Ecology  
Suzanne Dahl, Ecology  
Tracy Gao, Ecology  
Mandy Jones, Ecology  
Yoana Lucatero, Ecology  
Dan McDonald, Ecology  
John Richardson, Ecology  
Oliver Wang, Ecology  
Environmental Portal  
USDOE-ORP Correspondence Control  
BNI Correspondence Control  
Hanford Facility Operating Record  
MSA Correspondence Control

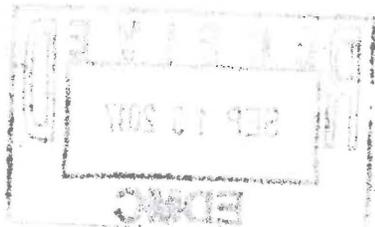
cc w/enc:

Rose Longoria, YN  
Susan Leckband, HAB

Administrative Record: Waste Treatment Plant (TSD #H-0-8)  
NWP Central File

cc w/o enc:

Matt Johnson, CTUIR  
Jack Bell, NPT



Quarter Ending June 30; 2017

24590-LAW-PCN-ENV-10-001

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

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Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant  
Update *System Logic Description for the Low Activity Waste Facility - Radioactive Liquid Waste Disposal System (RLD)* in Appendix 9.13 of the Dangerous Waste Permit

Submitted by Co-Operator:

  
Roger J. Landon

5-31-2017  
Date

Reviewed by ORP Program Office:

  
J.F. Grindstaff

6/09/17  
Date

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-10-001

<b>Hanford Facility RCRA Permit Modification Notification Form</b>	
Unit: <b>Waste Treatment and immobilization Plant</b>	Permit Part: <b>Part III, Operating Unit 10</b>

**Description of Modification:**  
 The purpose of this Class 1 prime modification is to update the *System Logic Description for the Low Activity Waste Facility - Radioactive Liquid Waste Disposal System (RLD)*. This document describes the instrument control logic for Dangerous Waste Permit (DWP) tank and ancillary equipment in the RLD within the Low-Activity Waste (LAW) facility. The following permit document is submitted to replace the document currently in Appendix 9.13 of the DWP:

Appendix 9.13			
Replace:	24590-LAW-PER-J-02-001, Rev 1	With:	24590-LAW-PER-J-02-001, Rev. 2

This modification requests Ecology approval and incorporation into the permit the specific changes to the document. Revisions are the result of ongoing design and documentation updates. The following identifies the significant types of changes in the attached document:

- Expanded acronym list.
- Expanded the list of applicable documents to include associated P&IDs, the LAW RLD System Description.
- Replaced a general reference to WAC 173-303 in the Applicable Documents section and provided a description in the Introduction that describes the requirements for document submittals associated with SLDs in permit condition III.10.E.9.d.vii.
- Revised process and facility description text in Sections 3.1 and 3.2, to include an expanded description of instrument alarm functions, the LKY sump liquid level tracking function, and a description of the operational response to a spill alarm.
- Added a description of the leak detection and secondary containment systems for the upper and lower containment areas of LAW-ASX-SMPLR-00013 in Section 3.1.2.
- Added a description of the leak detection and secondary containment systems for the upper and lower containment areas of LAW-ASX-SMPLR-00012 in Section 3.2.3.
- Corrected text in Section 3.2.5 to document that the west sump is in effluent cell L-0126 is RLD-SUMP-00035, and corrected the reference to the west sump pump (RLD-PMP-00031) in this same paragraph.
- Added Table 1 to identify the instruments associated with the LAW RLD system. The table identifies the monitoring or control parameter, type of instrument or control device, the instrument or control device tag number and the associated P&ID for the instrument or control device.
- Consolidated Figures 1 and 3 to make a new Figure 1 to create a Typical Collection Vessel Level Detection figure and revised the SLD text to incorporate reference to Figure 1.
- Consolidated Figures 2 and 4 to make a new Figure 2 to create a Typical Sump Level Detection figure, incorporate the LKY level monitoring function and revised the SLD text to incorporate reference to Figure 2.
- Added Figure 3 to create a Typical Autosampler Lower Containment Area Level Detection figure and revised the SLD text to incorporate reference to Figure 3.

To support the review of this modification, the reference to the J3 Logic Diagrams associated with instrumentation in the LAW RLD System Logic description are provided for information below:

24590-LAW-J3-RLD-01001, *Functional Diagram - SBS Condensate Collection Level Indicators and Header Pressure*

24590-LAW-J3-RLD-01002, *Function Diagram – Plant Wash Vessel Level Indication and Header Pressure*

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24590-LAW-J3-RLD-01005, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-VSL-00004 LVL Indication and PMP 2A/B Press*

24590-LAW-J3-RLD-01007, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-SUMP-00028 and Sump RLD-SUMP-00034 Level Indication*

24590-LAW-J3-RLD-01008, *Functional Diagram - C3/C5 Drains/ Sump Collection RLD Sumps 00029 Level Indication*

24590-LAW-J3-RLD-01009, *Functional Diagram - C3/C5 Drains/ Sump Collection RLD Sumps 00032 Level Indication*

24590-LAW-J3-RLD-01011, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-SUMP-00030 Sump Level Indication*

24590-LAW-J3-RLD-01012, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-SUMP-00031 Sump Level Indication*

24590-LAW-J3-RLD-01013, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-SUMP-00035 Level Indication*

24590-LAW-J3-RLD-01014, *Functional Diagram C3/C5 Drains/ Sump Collection RLD-SUMP-00036 Level Indication*

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

WAC 173-303-830 Modification Class:	Class 1	Class 1 <sup>1</sup>	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<sup>1</sup> 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."

Modification Approved/Concur: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Denied (state reason below) Reason for denial:	Reviewed by Ecology:  S. Dahl Date 9/15/17
--	--

*for S. Dahl.*

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-004

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

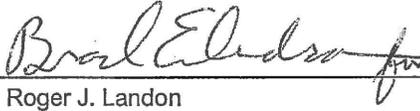
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Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant  
Update *System Logic Description for the Low-Activity Waste Facility – LAW Melter Feed Process System (LFP)* in Appendix 9.13 of the Dangerous Waste Permit

Submitted by Co-Operator:

Reviewed by ORP Program Office:

 5/31/2017  
Roger J. Landon Date

 6/9/17  
J. F. Grindstaff Date

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-004

<b>Hanford Facility RCRA Permit Modification Notification Form</b>	
Unit: <b>Waste Treatment and Immobilization Plant</b>	Permit Part: <b>Part III, Operating Unit 10</b>

**Description of Modification:**

The purpose of this Class 1 prime modification is to update the *System Logic Description for the Low-Activity Waste Facility – LAW Melter Feed Process System (LFP)*. This document describes the instrument control logic for Dangerous Waste Permit (DWP) tank and associated ancillary equipment in the LFP within the Low-Activity Waste (LAW) facility. The following permit document is submitted to replace the document currently in Appendix 9.13 of the DWP:

Appendix 9.13			
Replace:	24590-LAW-PER-J-03-001, Rev 0	With:	24590-LAW-PER-J-03-001, Rev. 1

This modification requests Ecology approval and incorporation into the permit the specific changes to the document. Revisions are the result of ongoing design and documentation updates. The following identifies the significant types of changes in the attached document:

- Expanded acronym list.
- Updated Glossary.
- Expanded the list of applicable documents to include associated LAW Feed Process and Symbols and Legends P&IDs.
- Deleted a general reference to WAC-173-303 in the Introduction and replaced with a description of the requirements for this document in permit condition III.10.E.9.d.vii.
- Consolidated process and facility descriptions, instrument alarm functions, and the description of the operational response to a spill alarm for both Melter Feed Prep Vessels in Section 3.1.1.
- Consolidated process and facility descriptions, instrument alarm functions, and the description of the operational response to a spill alarm for both Melter Feed Vessels in Section 3.1.2.
- Consolidated process and facility descriptions, instrument alarm functions, and the description of the operational response to a spill alarm for both Melter Feed and Feed Prep Valve Bulges in Section 3.1.3.
- Added Table 1 to identify the instruments associated with the LAW Melter Feed and Feed Prep Vessels. The table identifies the monitoring or control parameter, type of instrument or control device, the instrument or control device tag number and the associated P&ID for the instrument or control device.
- Consolidated Figures 1 and 2 to make a new Figure 1 - Typical Level Measurement for Melter Feed Preparation Vessels and revised the SLD text to incorporate reference to Figure 1.
- Consolidated Figures 3 and 4 to make a new Figure 2 - Typical Level Measurement for Melter Feed Vessels and revised the SLD text to incorporate reference to Figure 2.

To support the review of this modification, the reference to the J3 Logic Diagrams associated with instrumentation in the LAW LFP System Logic description are provided for information below:

24590-LAW-J3-LFP-01001, *Functional Diagram – Functional Diagram - LAW LFP-VSL-00001 Instruments*

24590-LAW-J3-LFP-01003, *Functional Diagram – Functional Diagram - LAW LFP-VSL-00002 Instruments*

24590-LAW-J3-LFP-01006, *Functional Diagram – Functional Diagram - LAW LFP-VSL-00003 Instruments*

24590-LAW-J3-LFP-01008, *Functional Diagram - Functional Diagram - LAW LFP-VSL-00004 Instruments*

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

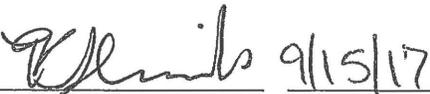
Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-004

WAC 173-303-830 Modification Class:	Class 1	Class 1 <sup>1</sup>	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<sup>1</sup> 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."

Modification Approved/Concur: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Denied (state reason below) Reason for denial:	Reviewed by Ecology:  S. Dahl Date
--	--

*for S. Dahl.*

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-005

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

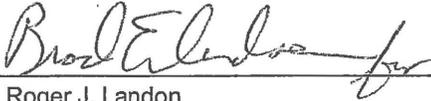
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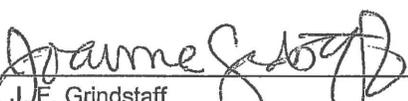
Page 2 of 3: Hanford Facility RCRA Permit, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant  
Update *System Logic Description for the Low-Activity Waste Facility – LAW Concentrate Receipt Process System (LCP)* in Appendix 9.13 of the Dangerous Waste Permit

Submitted by Co-Operator:

Reviewed by ORP Program Office:

  
Roger J. Landon

5/31/2017  
Date

  
J.F. Grindstaff

6/29/17  
Date

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-005

<b>Hanford Facility RCRA Permit Modification Notification Form</b>	
Unit: <b>Waste Treatment and Immobilization Plant</b>	Permit Part: <b>Part III, Operating Unit 10</b>

**Description of Modification:**

The purpose of this Class 1 prime modification is to update the *System Logic Description for the Low-Activity Waste Facility – LAW Concentrate Receipt Process System (LCP)*. This document describes the instrument control logic for Dangerous Waste Permit (DWP) tank and associated ancillary equipment in the LCP within the Low-Activity Waste (LAW) facility. The following permit document is submitted to replace the document currently in Appendix 9.13 of the DWP:

## Appendix 9.13

Replace:	24590-LAW-PER-J-03-002, Rev 0	With:	24590-LAW-PER-J-03-002, Rev. 1
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This modification requests Ecology approval and incorporation into the permit the specific changes to the document. Revisions are the result of ongoing design and documentation updates. The following identifies the significant types of changes in the attached document:

- Expanded acronym list.
- Updated Glossary.
- Expanded the list of applicable documents to include associated LAW Concentrate Receipt Process and Symbols and Legends P&IDs.
- Deleted a general reference to WAC-173-303 in the Introduction and replaced with a description of the requirements for this document in permit condition III.10.E.9.d.vii.
- Updated process and facility descriptions, instrument alarm functions, and the description of the operational response to a spill alarm for both LAW Concentrate Receipt Vessels in Sections 3.1.1 and 3.1.2.
- Updated the process and facility descriptions, instrument alarm functions, and the description of the operational response to a spill alarm for the LAW Concentrate Receipt Bulges in Sections 3.1.3, 3.1.4, and 3.1.5.
- Added Table 1 to identify the instruments associated with the LAW Concentrate Receipt Vessels. The table identifies the monitoring or control parameter, type of instrument or control device, the instrument or control device tag number and the associated P&ID for the instrument or control device.
- Consolidated Figures 1 and 2 to make a new Figure 1 - Typical Level Measurement for Concentrate Receipt Vessels and revised the SLD text to incorporate reference to Figure 1.

To support the review of this modification, the reference to the J3 Logic Diagrams associated with instrumentation in the LAW LCP System Logic description are provided for information below:

24590-LAW-J3-LCP-01001, *Functional Diagram – Functional Diagram - LAW LCP-VSL-00001 Instruments*

24590-LAW-J3-LCP-01003, *Functional Diagram – Functional Diagram - LAW LCP-VSL-00002 Instruments*

In accordance with Permit Condition III.10.C.2.e, this permit modification sent to Ecology may include page changes to the Permit, attachments, and permit application supporting documentation.

WAC 173-303-830 Modification Class:	Class 1	Class 11	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:	

Quarter Ending June 30, 2017

24590-LAW-PCN-ENV-12-005

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."

Modification Approved/Concur:  Yes  Denied (state reason below)

Reason for denial:

Reviewed by Ecology:

*S. Dahl* 9/15/17

S. Dahl Date

*S. Dahl*