



0074028

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

October 2, 2007

Ms. Shirley J. Olinger, Acting Manager
Office of River Protection
United States Department of Energy
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352

Mr. William S. Elkins, Project Director
Bechtel National, Inc.
2435 Stevens Center Place, MSIN: H4-02
Richland, Washington 99354

Re: Submittal of Hanford Facility RCRA Permit Modification Notification Form
24590-HLW-PCN-ENV-07-004; Class 1 Modification to the Hanford Facility Dangerous
Waste and Resource Conservation and Recovery Act (RCRA) Permit for the Treatment,
Storage, and Disposal of Dangerous Waste, Part III, Operating Unit 10
(Waste Treatment and Immobilization Plant), WA7890008967

0073893

Dear Ms. Olinger and Mr. Elkins:

The Department of Ecology approves the referenced Class 1 Modification submitted September 10, 2007. The approved Hanford Facility RCRA Permit Modification Notification Form is enclosed.

Modification 24590-HLW-PCN-ENV-07-004 provides the following *Mechanical Systems Data Sheets*:

- 24590-HLW-MKD-HOP-00014, Revision 6, for the Melter 1 Silver Mordenite Column (HOP-ABS-00002).
- 24590-HLW-MKD-HOP-00017, Revision 6, for the Melter 2 Silver Mordenite Column (HOP-ABS-00003).

If there are any questions, contact me at 509-372-7882 or Dave Becker at 509-372-7990.

Sincerely,

Brenda Becker-Khaleel
WTP Permit Writer
Nuclear Waste Program

tw/jc
Enclosure

cc: See next page

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Ms. Olinger and Mr. Elkins
October 2, 2007
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cc electronic w/enc:

John Eschenberg, USDOE
Lori Huffman, USDOE
Tony McKarns, USDOE
Gae Neath, USDOE
Don Sommer, USDOE
William Taylor, USDOE
Brad Erlandson, BNI
Peggy Fisher, BNI
Stan Hill, BNI
Dennis Klein, BNI
Sandi Murdock, BN
Suzette Thompson, FHI
Phil Peistrup, WGI

cc w/enc:

Administrative Record: Tank Waste Treatment Requirements ✓ H-0-8
Environmental Portal
USDOE-ORP Correspondence Control

Quarter Ending 9/30/07

24590-HLW-PCN-ENV-07-004

Hanford Facility RCRA Permit Modification Notification Form																														
Unit: Waste Treatment and Immobilization Plant		Permit Part & Chapter: Part III, Operating Unit 10																												
Description of Modification:																														
<p>The purpose of this Class 1 modification is to update HLW Mechanical Systems Data Sheets for the Silver Mordenite Columns (HOP-ABS-00002 and HOP-ABS-00003) in Appendix 10.6 of the Dangerous Waste Permit. The following data sheets are submitted to replace the permitted data sheets currently in Appendix 10.6.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left;">Appendix 10.6</th> </tr> </thead> <tbody> <tr> <td style="width:15%;">Replace:</td> <td style="width:35%;">24590-HLW-MKD-HOP-P0014, Rev. 1</td> <td style="width:15%;">With:</td> <td style="width:35%;">24590-HLW-MKD-HOP-00014, Rev. 6</td> </tr> <tr> <td>Replace:</td> <td>24590-HLW-MKD-HOP-P0017, Rev. 0</td> <td>With:</td> <td>24590-HLW-MKD-HOP-00017, Rev. 6</td> </tr> </tbody> </table> <p>This modification requests Ecology approval and incorporation into the permit the specific changes to these data sheets that are identified by revision notes 4, 5, and 6, revision triangles, or revision bars shown on the data sheets that have been issued since the last revision of the permitted version. The silver mordenite columns have been installed in the HLW facility in 2005; this PCN updates the mechanical data sheets to include design details provided by the vendor and other minor editorial changes. The following identifies the significant changes that have been revised on the attached data sheets.</p> <ul style="list-style-type: none"> • Revised Seismic Base Moment, Support Type, and Nozzles: Sampling & Testing Connections from TBD to data provided by the vendor • Revised Notes 1 and 4 • Added Note 5 • Revised Process Data Sheet reference to Process Calculation. <p>The following is a list of outstanding change documents that have not been incorporated into this modification: None</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:45%;">WAC 173-303-830 Modification Class:^{1,2}</th> <th style="width:15%;">Class 1</th> <th style="width:15%;">Class ¹1</th> <th style="width:15%;">Class 2</th> <th style="width:15%;">Class 3</th> </tr> </thead> <tbody> <tr> <td>Please mark the Modification Class:</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Enter Relevant WAC 173-303-830, Appendix I Modification citation number: A.1 and A.3 Enter wording of WAC 173-303-830, Appendix I Modification citation:</p> <p>A. General Permit Provisions 1. Administrative and informational changes 3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:55%;"> Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason for denial) Reason for denial: </td> <td style="width:45%; text-align: center;"> Reviewed by Ecology:  B. Becker-Khaleel </td> </tr> <tr> <td></td> <td style="text-align: center;"> 10/2/07 Date </td> </tr> </table>					Appendix 10.6				Replace:	24590-HLW-MKD-HOP-P0014, Rev. 1	With:	24590-HLW-MKD-HOP-00014, Rev. 6	Replace:	24590-HLW-MKD-HOP-P0017, Rev. 0	With:	24590-HLW-MKD-HOP-00017, Rev. 6	WAC 173-303-830 Modification Class: ^{1,2}	Class 1	Class ¹ 1	Class 2	Class 3	Please mark the Modification Class:	X				Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason for denial) Reason for denial:	Reviewed by Ecology:  B. Becker-Khaleel		10/2/07 Date
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	10/2/07 Date																													

¹ Class 1 modifications requiring prior Agency approval.

² If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class '1, if applicable.



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PO Box 450, MSIN: H6-60
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Mr. John C. Fulton, President
CH2M HILL Hanford Group, Inc.
P.O. Box 1500, MSIN: H6-63
Richland, Washington 99352

Re: Management and Use of Expired Hose In Hose Transfer Lines (HIHTLs)

Dear Ms. Olinger and Mr. Fulton:

Ecology received RPP-6711, Rev. 2K, *Evaluation of Hose-in-Hose Transfer Line (HIHTL) Service Life*, and RPP-12711, *Temporary Waste Transfer Line Management Program Plan*, in response to the March 28, 2007, Dangerous Waste compliance inspection of the HIHTLs. After review of RPP-6711, RPP-12711, and supplementary documentation, Ecology has concluded that HIHTLs should normally not be used:

- Once they exceed the seven year storage life.
- Beyond three years after initial use.
- Outside the original design specifications.

Ecology has the following concerns of HIHTLs service life extension:

1. Testing procedures, protocols, and resulting data presented in the documentation.
2. Additional use of HIHTLs (past three years, as stated in RPP-6711) once deployed.
3. HIHTL material properties and uses.
4. Cumulative affects of organics, radiation, operational temperatures, and resulting fatigue, and failure prediction of the HIHTLs.
5. Additional retrieval field conditions, yet to be determined and the uncertainty of HIHTL performance.

The United States Department of Energy-Office of River Protection (USDOE-ORP) has stated that the reuse of the HIHTLs past the three years service life, past the seven year storage life, and for additional retrieval missions is critical to continue retrieval efforts from the single shell tanks (SSTs) and ancillary equipment. Ecology wants to support continued SST retrieval operations. In the case of retrieval from SSTs and ancillary equipment, the service life of certain HIHTLs may be extended on a case-by-case basis.



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A phased approach that is acceptable to Ecology to demonstrate the HIHTLs are "fit for use" (Chapter 173-303-640 of the Washington State Administration Code) includes:

1. Adequate planning of retrieval processes to reflect a retrieval schedule that complies with RPP-12711. This schedule must coordinate use of the HIHTLs with the storage and service life of the HIHTLs provided in RPP-12711.
2. Seeking waiver approval from Ecology to extend the use for lines in service past the service life specified in RPP-12711. Waivers are only to be requested in extreme and rare occasions and must describe the circumstances and rationale for each service life extension request. Ecology will review all data and determine if a waiver should be granted on a case-by-case basis. The proposed structure for the waiver process is attached.
3. Developing and adhering to an Ecology approved compliance schedule for the removal and disposal of expired lines in the field.

Additional materials testing to develop a new bounding case of the service life of the HIHTLs may be considered by Ecology if USDOE-ORP provides adequate supporting data to justify extended service life.

Ecology received a proposed schedule (Reference 5) from USDOE-ORP for removal and disposal of expired hoses. Ecology has determined that the schedule is inadequate. In order to resolve Ecology's outstanding Notice of Violation, submit a Recovery Plan and Removal Schedule. The Recovery Plan must address the removal of the current backlog of HIHTLs that have expired and remain in the field by Fiscal Year 2012. The Recovery Plan shall include a detailed schedule that indicates when each expired HIHTLs will be removed. The Removal Schedule is intended to maintain compliance of RPP-12711 (revision previously approved by Ecology). The Removal Schedule shall also include a detailed schedule that indicates the removal dates of lines expiring after June 30, 2007, within six months.

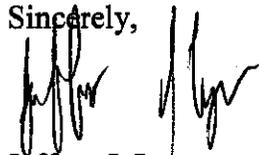
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USDOE-ORP and its contractor will need to modify RPP-12711, *Temporary Waste Transfer Line Management Program Plan*, to include the phased approach described. Ecology emphasizes that the following three policies shall under **no** circumstances be breached:

1. Utilization of a HIHTL past 10 years regardless of the storage time and field deployment or service life time.
2. Operation of a HIHTL past three years without additional controls and constraints detailed in the attachment.
3. Operation of a HIHTL that has not been certified "fit for use" by an independent qualified registered professional engineer and approved by Ecology including the entire configuration of the system the HIHTL is part of, per Chapter 173-303-640 of the Washington State Administration Code.

If you have any questions, please contact me at 509-372-7914.

Sincerely,



Jeffery J. Lyon
Tank Waste Storage Project Manager
Nuclear Waste Program

mm/pll

Enclosure

References:

1. Letter from R. Wilson, Ecology, to R. Schepens, USDOE-ORP, and E. Aromi, CH2M, *Completion of Corrective Measures per Notice of Non-Compliance for Deficient Leak Detection in Tank Farms Temporary Transfer Lines*, dated April 22, 2003. 0059068
2. *Evaluation of Hose-in-Hose Transfer Line (HIHTL) Service Life*, RPP-6711, Rev. 2K.
3. *Temporary Waste Transfer Line Management Program Plan*, RPP-12711.
4. Letter from R. Wilson, Ecology, to S.J. Olinger, USDOE-ORP, and M. Spears, CH2M, *Notice of Violation for Unfit-For-Use Hazardous Waste Tank System Components*, 0701103, dated May 14, 2007. 0072876
5. Letter 07-TPD-048, from S.J. Olinger, USDOE-ORP, to J.A. Hedges, Ecology, *Transmittal of Hose-in-Hose Transfer Line Storage, Use, and Removal Schedule in Response to Notice of Violation for Unfit-for-Use Hazardous Waste Tank System Components*, dated August 31, 2007. 0073845

cc: See next page

Ms. Olinger and Mr. Fulton
October 2, 2007
Page 4

cc w/enc:

Phillip Miller, CH2M
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
Susan Leckband, HAB
Ken Niles, ODOE *S-2-4/S-2-3*
Administrative Record: SST/DST
Environmental Portal

Hose In Hose Transfer Lines (HIHTLs) Extended Use Waiver Process

Before any additional waste can be transferred through expired HIHTL(s), Ecology must assess if the HIHTL(s) should be granted additional service life. (Past the three year service life [after first operations in the field] or the seven year storage life according to RPP-12711, *Temporary Waste Transfer Line Management Program Plan*, as approved by the United States Department of Energy-Office of River Protection.) To assess if HIHTL service life should be extended, Ecology will evaluate and approve a documentation package from an independent qualified registered professional engineer (IQRPE) that certifies the entire proposed system is "fit for use". The IQRPE's certification should be based upon, but not limited to the following information:

1. Visual inspection of the HIHTL.
2. Pressure testing on the primary hose.
3. Pressure testing on the secondary hose.
4. HIHTL operational data, (past use data and the testing data listed above). If the data is modified to reflect averages and maximums, provide the detailed methodology and determinations used. Provide the uncertainty of the value being recorded and reported (based on instrumentation calibration, etc.).
5. HIHTL extended use projections, configurations, and equipment ratings, and prominent parameters must include, but are not limited to:
 - a. Ensure the maximum temperature did not exceed 180 degrees Fahrenheit.
 - b. Provide dose calculations and assumptions.
 - c. Provide chemical compositions of the previous transfers.
 - d. Provide chemical, temperature, pressure, and radiation compositions specific to the new mission. Look at any aspect that will negatively impact the HIHTL causing a failure in the lines, which results in damage to the environment or impacts worker health and safety. Data must include, but is not limited to:
 - i. Percent of the volume of liquid.
 - ii. Percent of the volume of solids.
 - iii. Waste form (e.g., salt cake, sludge, liquid).
 - iv. Chemical compatibility.
 - v. Temperature.
 - vi. Pressure required for removal and pumping.
 - vii. Radiation dosage.
 - e. Review the entire configuration of the retrieval planned, including the existing equipment to be reused and the interface of new and existing equipment.

6. Upgrade all systems and processes and procedures applicable to the waiver to provide improved leak detection capabilities according to Washington Administrative Code (WAC) 173-303-640.
7. Provide detailed contingency procedures and processes specific to the HIHTLs and system configuration applicable to the waiver. This information will include the ability to remove all waste from secondary containment (outer hose) within 24 hours, and modify retrieval efforts, according to WAC 173-303-640.

The criteria listed above is based on Ecology's analysis of the documents and supplemental information submitted by CH2M regarding the extension of HIHTLs. Ecology's analysis (attached) highlights five areas of concern including:

6. Testing procedures, protocols, and resulting data.
7. Additional use (past three years, as stated in RPP-6711) once deployed.
8. Material property and uses.
9. Cumulative affects of organics, radiation, operational temperatures, and resulting fatigue, and failure prediction.
10. Additional field conditions, yet to be determined.