



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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January 8, 2021

21-NWP-004

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

John R. Eschenberg, President  
Washington River Protection Solutions  
PO Box 850, MSIN: H3-2104  
Richland, Washington 99352

Re: Closing the Technical Review of C2-242-A-2020-01, the 242-A Evaporator Class 3 Permit Modification for Wall Penetrations 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 4, 242-A Evaporator WA7890008967

Reference: See page 2

Dear Brian T. Vance and John R. Eschenberg:

This letter closes the technical review for the 242-A Evaporator Class 3 -Wall Penetration Permit Modification (C2-242-A-2020-01). Enclosed are the Record of Comment Resolutions (RCRs), which provide documentation that the Department of Ecology's (Ecology) comments on the IQRPE design assessment for the new penetrations/wall nozzles and jumpers have been resolved.

The United States Department of Energy (USDOE) submitted a Class 2 permit modification on May 7, 2020. Ecology made a decision on September 4, 2020 to reclassify (Reference 2) the permit modification to a Class 3, because comments on the IQRPE design assessment were still open and remained unresolved. Once the permit modification was reclassified, Ecology made a completeness determination and performed a technical review according to Washington Administrative Code (WAC) 173-303-840(1)(a). On November 19, 2020, Ecology submitted comments formally in letter 20-NWP-186 (Reference 1). USDOE and Washington River Protection Solutions (WRPS) submitted the missing and updated supplemental information informally by e-mail on December 9, 2020 to Ecology.


Ecology is preparing for the second portion of the Class 3 permit modification, which is 45 days. The public comment period is scheduled to begin on February 8, 2021.

The comments on the RCRs documented Ecology's concern that the design assessment, as required by WAC 173-303-640(3), did not have evidence of an independent qualified registered professional engineer (IQRPE) with expertise in structural engineering for this review [WAC 173-303-040].

The IQRPE design assessment addressed the structural adequacy of the new penetrations/wall nozzles and new jumpers. USDOE and WRPS amended the design assessment to show that a structural engineer participated in the design assessment. According to WAC 173-303-040, an independent qualified registered professional engineer is, “an engineer with expertise in the specific area for which a certification is given.” Once the permittees addressed Ecology’s concerns on the IQRPE reports and design assessments, the technical review was closed.

If there are any questions, please contact Andrew Pomiak, 242-A Evaporator Permit Lead, at [andrew.pomiak@ecy.wa.gov](mailto:andrew.pomiak@ecy.wa.gov) or (509) 372-7942, or Jeff Lyon, 242-A Evaporator Project Manager, at [jeff.lyon@ecy.wa.gov](mailto:jeff.lyon@ecy.wa.gov) or (509) 372-7914.

Sincerely,

 Digitally signed  
by Schleif,  
Stephanie (ECY)

Stephanie Schleif  
Deputy Program Manager  
Nuclear Waste Program

ap/aa  
Enclosure (2)

References:

1. Letter 20-NWP-186, dated November 19, 2020, “Technical Review of C2-242-A-2020-01, the 242-A Evaporator Class 3 Permit Modification for Wall Penetrations of 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, 242-A Evaporator WA7890008967”
2. Letter 20-NWP-150, dated September 4, 2020, “Reclassification of Proposed Class 2 Permit Modification C2-242-A-2020-01 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, 242-A Evaporator WA7890008967

cc: See page 3

cc electronic w/enc:

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Mary Beth Burandt, USDOE-ORP  
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NWP RIM Coordinators, Ecology  
Environmental Portal  
Hanford Administrative Records  
Hanford Facility Operating Record  
MSA Correspondence Control  
USDOE-ORP Correspondence Control  
USDOE-RL Correspondence Control  
EPA Region 10 Hanford Field Office Correspondence Control  
WRPS Correspondence Control

Review Comment Record		Washington State Department of Ecology Nuclear Waste Program				Date: January 8, 2021		
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Document Title(s)/Number(s): RPP-IQRPE-50066, Rev 00, <i>IQRPE Design Assessment 242-A Evaporator Transfer Line Replacement Project, 242-A Pump Room Structural Modifications (Wall Nozzles)</i> [DA-327971-01]								
Document Manager/Telephone Number: Andrew Pomiak, (509) 372-7942			Project Manager/Telephone Number: Jeff Lyon, (509) 372-7914		Facility Site ID: WA7890008967	Cleanup Site ID		
Item No.	Pg. # Sec. # Para./Sent.	Comment or Question	Modification Needed	Basis/Justification	Permittee Response	Ecology Response	Open/ Close	Reviewer Initials
1.	Section 1.0	There are actually two IQRPE reports for the Evaporator portion of the project, and a third IQRPE report for the DST portion. Ecology received the first Evaporator IQRPE report RPP-IQRPE-50066 (DA-327971-01) for the penetrations, but not the second report for the jumpers in the Evaporator Pump Room. The report DA-327971-02, <i>242-A Evaporator Transfer Line Replacement Project, 242-A Pump Room Jumpers</i> , is missing. DOE had previously stated that the design assessment for the Evaporator portion, not just the wall penetrations, would be provided prior to approval of the permit mod; see the Informal Review RCR items 1a and 2. The regulatory requirement of WAC 173-303-806(4)(c)(i) to provide a written assessment of the structural integrity and suitability for handling dangerous waste of each tank system was not met.	Submit DA-327971-02, Rev. 0, to Ecology for review.  Permittee provided DA-327971-02 on August 26, 2020.	WAC 173-303-806(4)(c)(i)	None required.	No further action necessary.	Close	AP/SL
2.	Section 3.0	The assessment does not include supporting information as to the qualifications and technical competency of the IQRPE. The report throughout talks to the structural adequacy of the system. However, there is no structural engineer listed as having participated in this activity. The participants listed in Section 3.0 are all mechanical engineers and one chemical engineer. Further, there is nothing in the report that supports whether the individuals listed are or are not qualified to assess the structural design of the new penetrations. The IQRPE reports typically include resumés of the participants, but none were provided in this instance. Yet the IQRPE report makes statements such as ‘appropriate structural considerations for the project have been made.’ As a result, it cannot be determined if the conclusions reached by the report are valid, or for that matter if the regulatory requirements of WAC 173-303-040, -640(3)(a), and -806(4)(c)(i) were met. The Evaporator is a category 2 nuclear facility and these are penetrations through a wall that is a significant part of the structure and provides both shielding and containment.  [For example, one of the calculations reviewed for the IQRPE report is RPP-CALC-63208, <i>Structural Analysis for the 242-A Pump Room Wall Nozzle Assemblies Plus Counterweight Lifting Devices</i> . That calculation was originally prepared by a registered structural engineer. Which of the participants in this IQRPE report reviewed that calculation, and what were their qualifications?]	Revise the IQRPE report to include supporting information as to the qualifications and technical competency of the IQRPE and other participants related to the structural aspects of this modification.	WAC 173-303-040 WAC 173-303-640(3)(a) WAC 173-303-806(4)(c)(i)	This Design Assessment Report will not be revised to include supporting information on the IQRPE qualifications.  The regulations require work to be done by an IQRPE, which must be licensed by the professional licensing board. This requested information on qualification and technical competency is not required to be provided to Ecology based on the WAC requirements. If Ecology has concern over a PE they should address those concerns with the professional licensing board.  <u>Ecology Response</u> WAC 173-303-040 says the IQRPE must have “expertise in the specific area for which a certification is given.” The report makes conclusions about the structural adequacy of the new system. However, there is no structural engineer listed as having participated in the assessment. There is also nothing that supports whether the individuals who are listed have expertise that qualifies them to assess the structural design. Both WAC 173-303-810(9) and the permit condition I.E.8 say that Ecology may request information needed to support modifying the permit. Ecology requests that information be provided to substantiate the IQRPE’s experience in assessing the structural integrity of the new Evaporator wall penetrations and wall nozzles.  <u>Ecology Update 12-09-2020</u> The IQRPE report was updated to indicate that a registered PE with structural engineering expertise participated in this assessment. See Section 3.0, page 32 of 36.		Open Closed	AP/SL

# Review Comment Record

## Washington State Department of Ecology Nuclear Waste Program

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**Document Title(s)/Number(s):** *IQRPE Design Assessment 242-A Evaporator Transfer Line Replacement Project, 242-A Pump Room Jumpers* [DA-327971-02, Rev 0]

**Document Manager/Telephone Number:**

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**Facility Site ID:**

WA7890008967

**Cleanup Site ID**

Item No.	Pg. # Sec. # Para./Sent.	Comment or Question	Modification Needed	Basis/Justification	Permittee Response	Ecology Response	Open/Close	Reviewer Initials
1.	Cover Page	The report has no document release form with a release stamp and no Hanford document number, or anything saying the report is approved for public release. There is only a Meier title page and document number.	The IQRPE report for the jumpers needs to be publicly released and shared with the public, same as was done with the report for the penetrations.	WAC 173-303-830(4)(b)(iii) or (c)(iii)	<p>Neither <a href="#">-830(4)(b)(iii)</a> nor (c)(iii) requires the IQRPE Design Assessment be provided as Supporting Information to the public. <a href="#">-640(3)</a> requires that the assessment be provided to the Department to be used by the department to review and approve or disapprove the acceptability of the tank system design. It does not require public review.</p> <p><a href="#">-806(4)((c)(i)</a> requires the written assessment be reviewed and certified by IQRPE. <a href="#">-640(3)(h)</a> requires permittee to keep IQRPE Design and Installation certification in the operating record.</p> <p>For the purpose of document clearance Ecology is considered to be the Public; as such Ecology's assumptions on document clearance are not correct.</p> <p><u>Ecology Response</u> ???</p> <p>Possible disposition: The IQRPE report is being used by Ecology as the basis for decision making. The report is being revised as a result of comments #3 and 5. Ecology requests that DOE provide a copy of the revised report. Ecology will include the revised report in the supporting information made available for the public comment period.</p> <p>Questions: Were the IQRPE reports for the jumpers and the DST lines issued with report numbers and cleared for public release?</p> <p>What is Permitting's position on including IQRPE reports in the supporting information provided to the public?</p> <p><a href="#">Ecology Update 12-09-2020</a> The IQRPE report was updated and is stamped Approved for Public Release on the cover page.</p>		Open Closed	AP/SL

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2.	Sections 1.2 and 1.4.1	The report says that technical specifications were included in the IQRPE's review. Both the jumper calculation reports in the supplemental information talk to specification RPP-SPEC-63237, "242-A Evaporator Pump Room Design Requirements for the 41 to 5 and 43 to 13A Jumper Assemblies," and say it provides the basis for the jumper design. The design requirements specification appears to be relevant to the design assessment. However, that specification is not mentioned anywhere in the text of the IQRPE report or listed in the References section, and appears to have not been considered by the IQRPE. The specification also was not included in the supporting information provided to Ecology or made available to the public.	<p>Ensure that the IQRPE received the specification RPP-SPEC-63237.</p> <p>Provide a copy of the specification to Ecology for review.</p> <p>Provide a copy of the specification to the public for review.</p> <p>Revise the IQRPE report to address how the jumper design meets the specification requirements.</p>	<p>40 CFR 265.192(a)(1)</p> <p>WAC 173-303-640(3)(a)(i)</p> <p>Ecology Pub. 94-114 (11/2014) Sec. 3.7</p>	<p>The IQRPE design assessment report references the applicable design output documents listed in RPP-SPEC-63237. The IQRPE did not use RPP-SPEC-63237 as the basis for the assessment.</p> <p>All the necessary specifications required are contained in the drawings and ECNs reviewed by the IQRPE. The callout of technical specifications will be deleted in Rev 1 of the IQRPE assessment report, so it is not misleading that there are other specifications considered but not included in the assessment.</p> <p>RPP-SPEC-63237 is a WRPS requirements management tool per internal WRPS design procedures. This document references the design output documents, which addresses or flows down the applicable requirements.</p> <p>All applicable design documents to demonstrate compliance with the WAC 173-303-640(3) have been provided to Ecology for their review.</p> <p><u>Ecology Response</u> Both WAC 173-303-810(9) and the permit condition I.E.8 say that Ecology may request information needed to support modifying the permit. Ecology requests that a copy of the specification RPP-SPEC-63237, "242-A Evaporator Pump Room Design Requirements for the 41 to 5 and 43 to 13A Jumper Assemblies," be provided.</p> <p><u>Ecology Update 12-09-2020</u> The specification RPP-SPEC-63237 Rev 01, "242-A Evaporator Pump Room Design Requirements Compliance Matrix for the 41 to 5 and 43 to 13A Jumper Assemblies," was provided to Ecology with the 12-09-2020 submittal.</p>		Open Closed	AP/SL
3.	Sections 1.2 and 1.4.1	The report says that calculations were included in the IQRPE's review. The calculation RPP-CALC-63214, "242-A Evaporator Pump Room Jumpers Supporting Analysis," was included in the supporting information provided to Ecology. The calculation is relevant to the design of the jumpers. However, that calculation is not mentioned anywhere in the text of the IQRPE report or listed in the References section, and appears to have not been considered by the IQRPE.	<p>Ensure that the IQRPE received the calculation RPP-CALC-63214.</p> <p>Revise the IQRPE report to address the jumper calculation.</p>	<p>40 CFR 265.192(a)(1)</p> <p>WAC 173-303-640(3)(a)(i)</p> <p>Ecology Pub. 94-114 (11/2014) Sec. 3.7</p>	<p>The IQRPE received the calculation document RPP-CALC-63214.</p> <p>RPP-CALC-63214, 242-A Evaporator Pump Room Jumpers Supporting Analysis will be added to Section 4.0 and addressed in Sections 2.2.1 and 2.2.2.</p> <p><u>Ecology Response</u> Please provide a copy of the revised IQRPE report.</p> <p><u>Ecology Update 12-09-2020</u> The IQRPE report was updated and now references the calculation RPP-CALC-63214 in several places. See Sections 2.2.2, 2.2.2.1, 2.2.2.2, 2.2.4.1, and 4.0.</p>		Open Closed	AP/SL

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4.	Section 3.0	The report does not include supporting information as to the qualifications and technical competency of the IQRPE and other participants. The report throughout talks to the structural adequacy of the design. However, there is no structural engineer listed as having participated in this activity. The participants listed in Section 3.0 are all mechanical engineers and a chemical engineer. Further, there is nothing in the report that supports whether the individuals listed are or are not qualified to assess the structural design of the new jumpers. It cannot be determined if the conclusions reached by this report are valid, or if the regulatory requirements of WAC 173-303-040, -640(3)(a), and -806(4)(c)(i) were met. This is reminiscent of the issue several years ago with expired licenses.	Revise the IQRPE report to include supporting information as to the qualifications and technical competency of the IQRPE and other participants related to the structural aspects of this modification.	WAC 173-303-040 -640(3)(a) -806(4)(c)(i)	No changes will be made to Section 3.0  The regulations require work to be done by an IQRPE, which must be licensed by the professional licensing board. This requested information on qualification and technical competency is not required to be provided to Ecology based on the WAC requirements. If Ecology has concern over a PE they should address those concerns with the professional licensing board.  <u>Ecology Response</u> WAC 173-303-040 says the IQRPE must have “expertise in the specific area for which a certification is given.” The report makes conclusions about the structural adequacy of the new system. However, there is no structural engineer listed as having participated in the assessment. There is also nothing that supports whether the individuals who are listed have expertise that qualifies them to assess the structural design. Both WAC 173-303-810(9) and the permit condition I.E.8 say that Ecology may request information needed to support modifying the permit. Ecology requests that information be provided to substantiate the IQRPE’s experience in assessing the structural integrity of the new Evaporator pump room jumpers.  <u>Ecology Update 12-09-2020</u> The IQRPE report was updated to indicate that a registered PE with structural engineering expertise participated in this assessment. See Section 3.0, page 33 of 37.		Open Closed	AP/SL
5.	Section 4.0	The References section lists all three IQRPE reports for this project and says their issue date is 2010, not 2020.  Note that there was not a Technical Report Checklist attached to the IQRPE report like there was for the Basin 41 connection report.	Revise the IQRPE report to correct the issue dates to 2020.	Accuracy	Section 4.0 will be updated to correct the typo error for the wrong issue dates in Rev 1 of this Design Assessment Report.  The Technical Report Checklist is an internal WRPS tool that was not included for this project.  <u>Ecology Response</u> Please provide a copy of the revised IQRPE report.  <u>Ecology Update 12-09-2020</u> The IQRPE report was updated to correct the issue dates for the IQRPE reports DA-327971-01 and DA-327971-03 to 2020, and delete the reference to DA-327971-02. See Section 4.0, page 35 of 37.		Open Closed	AP/SL