

## **NRR-DMPSPeM Resource**

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**From:** Klos, John  
**Sent:** Thursday, December 07, 2017 12:37 PM  
**To:** Christianson, Sandra J.  
**Cc:** Williams, Lisa L.; Klos, John  
**Subject:** RAIs for MF9469, EPID: L-2017-LLA-0197, ILRT, LLRT LAR - new RAI response date

Sandra,

I am writing to acknowledge and agree that the requests for additional information, sent on October 23, 2017, will now have a response deadline of January 5, 2018.

Thank you,

**John Klos**  
**DORL Callaway, Columbia Project Manager**  
U.S. NRC, Office of Nuclear Reactor Regulation,  
Division of Operating Reactor Licensing, O9D09  
NRC/NRR/DORL/LPL4, MS O9E3  
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[John.Klos@NRC.gov](mailto:John.Klos@NRC.gov)

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**From:** Christianson, Sandra J. [<mailto:sjchristianson@energy-northwest.com>]  
**Sent:** Thursday, December 07, 2017 12:24 PM  
**To:** Klos, John <[John.Klos@nrc.gov](mailto:John.Klos@nrc.gov)>  
**Cc:** Williams, Lisa L. <[llwilliams@energy-northwest.com](mailto:llwilliams@energy-northwest.com)>  
**Subject:** [External\_Sender] RE: RAIs for MF9469, EPID: L-2017-LLA-0197, ILRT, LLRT LAR

John:

After the call this morning for further clarification on RAI 3, Energy Northwest requests extension of the due date for the response to January 5, 2018 to address the four items needing further discussion:

1. What items are left to model for the seismic PRA and why they would not significantly increase CFF/LERF.
2. Discussion of fragilities and how they are representative.
3. Verification the HRE is based on available guidance or justification for other
4. Discussion of seismic fire and flood interaction and what is included in the model based on the walk downs.

Thanks for your help

[Sandra J Christianson](#)

Please consider the environment before printing this email

----- Original message -----

From: "Klos, John" <[John.Klos@nrc.gov](mailto:John.Klos@nrc.gov)>  
Date: 10/13/17 9:33 AM (GMT-08:00)  
To: "Williams, Lisa L." <[llwilliams@energy-northwest.com](mailto:llwilliams@energy-northwest.com)>  
Cc: "Klos, John" <[John.Klos@nrc.gov](mailto:John.Klos@nrc.gov)>  
Subject: RAIs for MF9469, EPID: L-2017-LLA-0197, ILRT, LLRT LAR

**EXTERNAL: Think Before You Click!**

Email sent from: "Klos, John" [prvs=452ab1b70=John.Klos@nrc.gov](mailto:prvs=452ab1b70=John.Klos@nrc.gov)

Lisa,  
By letter dated March 27, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17086A586), Energy Northwest (the licensee) submitted a License Amendment Request (LAR) for Columbia Generating Station, which requested approval to revise the Columbia Generating Station (Columbia) Technical Specification (TS) 5.5.12 for permanent extension of Type A and Type C Leak Rate Test Frequencies to 15 years (180 months) and 75 months respectively.  
The NRC staff has reviewed the LAR and has identified areas where additional information is needed to complete its review.  
A clarification calls were held on Sept 28<sup>th</sup> and the final set of questions are below which require no further clarification. These RAIs are now released formally with a 60 calendar day response time; thereby, these RAIs are due December 13<sup>th</sup>, 2017.

**REQUEST FOR ADDITIONAL INFORMATION ASSOCIATED WITH  
COLUMBIA GENERATING STATION'S AMENDMENT REQUEST REVISE TECHNICAL SPECIFICATIONS  
5.5.12 FOR PERMANENT EXTENSION OF TYPE A AND TYPE C CONTAINMENT TESTING  
FREQUENCIES  
(CAC NO. MF9469)**

**PRA RAI 1– Internal events PRA Technical Adequacy**

The License Amendment Request (LAR) states that the Columbia Generating Station (CGS) internal events PRA last underwent a peer review in 2009 against the American Society of Mechanical Engineers (ASME)/ American Nuclear Society (ANS) PRA Standard ASME/ANS RA-Sa-2009, as clarified by Regulatory Guide (RG) 1.200, Revision 2. The NRC staff notes that the "License Amendment Request for One-Time 7 Day Extension of Completion Time for TS Condition 3.5.1.A, 3.6.1.5.A, and 3.6.2.3.A" (ADAMS Accession Number ML16313A573) states that the 2009 peer review was a full-scope peer review against ASME/ANS RA-Sa-2009 and RG 1.200, Revision 2, using the industry peer review process guidelines in NEI-05-04, Revision 2.

- a. Confirm that the 2009 peer review included a full-scope peer review of the internal flooding PRA model, otherwise provide the necessary information to assess the quality of the internal flooding PRA model against RG 1.200, Revision 2, including history of peer reviews, Facts and Observations (F&Os) and their resolution or disposition for the application.
- b. Describe the changes made to the internal events and internal flooding PRA since the last full-scope peer review. This description should be of sufficient detail to assess whether these changes are PRA maintenance or PRA upgrades as defined in Section 1-5.4 of the PRA Standard. Since the following may indicate a PRA upgrade, include in your discussion: any new methodologies, changes in scope that impacts the significant accident sequences or the significant accident progression sequences, changes in capability that impacts the significant accident sequences or the significant accident progression sequences.
- c. Indicate, and provide justification, whether the changes described in Part b are PRA maintenance or PRA upgrades as defined in Section 1-5.4 of the PRA Standard.
- d. Indicate whether focused-scope peer review(s) has been performed for those PRA upgrades identified in Part 2. As applicable, provide a list of the F&Os from the peer review(s) that do not meet the appropriate Capability Category in accordance with EPRI TR 1021467-A, and explain how the F&Os were

dispositioned for this application. If focused-scope peer review(s) have not been performed for these PRA upgrades, then provide a quantitative evaluation (e.g., sensitivity or bounding analysis) of its effect on the application until a focused-scope peer review can be completed.

#### **PRA RAI 2 – Internal Events F&Os**

A summary of the F&Os from the 2009 peer review were provided in Table A-1 of Enclosure 3 to the LAR. Address the following:

- a. F&O 1-42 related to SR HR-I2 found that Human Reliability Analysis (HRA) Dependency Analysis has not been conducted for the Level 2 model. In resolution to this F&O, the licensee stated that the Level 2 HRA dependency analysis has been performed and documented. Confirm that the Level 2 dependent Human Error Probabilities (HEPs) meet the HR supporting requirements in the PRA Standard ASME/ANS RA-Sa-2009 and justify why no focused-scope peer review is required.
- b. F&O 2-17 related to SY-A14 identified inadequate consideration of system operational history in the PRA system models. In resolution to this F&O the licensee stated that operational history has been collected and will be added to the PRA documentation. Confirm that the system operational history has been reflected in the PRA models, or alternatively, justify why exclusion of operational history has no impact on the application.

#### **PRA RAI 3 - Seismic**

In Section 3.2.4.2, "Scope of the PRA," of the SE for EPRI TR-1009325, Revision 2, the NRC staff stated that: Although the emphasis of the quantitative evaluation is on the risk impact from internal events, the guidance in EPRI Report No. 1009325, Revision 2, Section 4.2.7, "External Events," states that: "Where possible, the analysis should include a quantitative assessment of the contribution of external events (e.g., fire and seismic) in the risk impact assessment for extended ILRT intervals." This section also states that: "If the external event analysis is not of sufficient quality or detail to directly apply the methodology provided in this document [(i.e., EPRI Report No. 1009325, Revision 2)], the quality or detail will be increased or a suitable estimate of the risk impact from the external events should be performed." This assessment can be taken from existing, previously submitted and approved analyses or other alternate method of assessing an order of magnitude estimate for contribution of the external event to the impact of the changed interval.

In Section 5.4.2 of Enclosure 4 to the LAR, the licensee performed an analysis of the external events contributions. The licensee stated that the seismic CDF and LERF risk estimates were taken from the Individual Plant Examination for External Events (IPEEE), with periodic updates to reflect the as-built and as-operated plant. This estimate does not appear to take into account the re-evaluated seismic hazard for Columbia, obtained in response to the Near-Term Task Force (NTTF) recommendation 2.1. Justify, preferably quantitatively, why the seismic estimate provided in the LAR is a bounding estimate of seismic risk given the re-evaluated seismic hazard, or, alternatively, provide with justification, a conservative or bounding estimate of seismic risk that takes into account the new re-evaluated seismic hazard, and assess its impact on the application.

#### **PRA RAI 4 – External Hazards**

Section 5.4.2 of Enclosure 3 to the LAR states that external hazards other than fire and seismic (e.g., high winds and tornadoes, external floods, transportation accidents, and nearby facility accidents) were not considered because of their negligible contribution to overall plant risk. This conclusion was reached based on the IPEEE.

- a. Since the IPEEE studies were performed in 1994 and have not been updated, discuss, in the context of the current plant and its environs, the applicability of the IPEEE conclusions for the current LAR.
- b. In light of recent external flooding re-evaluation performed in response to the NTTF recommendations, provide technical justification for why the risk from external flooding is negligible, or provide, with justification, a conservative or bounding estimate of the impact of external flooding risk for the current application.

Thank you,

**John Klos**

**DORL Callaway, Columbia Project Manager**

**U.S. NRC, Office of Nuclear Reactor Regulation,**

**Division of Operating Reactor Licensing, O9D09**

**NRC/NRR/DORL/LPL4, MS O9E3**

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date  
**Sent Date:** 12/7/2017 12:36:42 PM  
**Received Date:** 12/7/2017 12:36:43 PM  
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**Created By:** John.Klos@nrc.gov

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Tracking Status: None

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Tracking Status: None

"Christianson, Sandra J." <sjchristianson@energy-northwest.com>

Tracking Status: None

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