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GO2-14-119

10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

**Subject: COLUMBIA GENERATING STATION, DOCKET NO. 50-397
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR
RELIEF REQUEST 3ISI-15**

References: 1) Letter GO2-14-033, dated March 7, 2014, AL Javorik (Energy Northwest) to NRC, "Inservice Inspection (ISI) Program Request 3ISI-15"
2) Email, dated July 11, 2014, Andrea George (NRC) to Lisa Williams (Energy Northwest), "Request for Additional Information - ISI Program Alternative Request 3ISI-15 (TAC No. MF3562)"

Dear Sir or Madam:

By Reference 1, Energy Northwest submitted for approval alternative request 3ISI-15.

Via Reference 2, the Nuclear Regulatory Commission (NRC) submitted Requests for Additional Information (RAIs) to Energy Northwest. Enclosure 1 provides the requested information.

This letter and its enclosure contain no regulatory commitments. If there are any questions or if additional information is needed, please contact Ms. L. L. Williams, Licensing Supervisor, at 509-377-8148.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 20th day of August, 2014.

Respectfully,

A. L. Javorik
Vice President, Engineering

A047
NRC

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR RELIEF
REQUEST 3191-15**

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Enclosure: 1) Response to Response to Request for Additional Information (RAI)

cc: NRC RIV Regional Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector/988C
M Jones - BPA/1399 (email)
WA Horin - Winston & Strawn (email)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR RELIEF REQUEST

3ISI-15

Enclosure 1

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI)

NRC Request:

RAI 1: Describe the Columbia Generating Station operating experience with regard to reactor pressure vessel flange O-ring leakage and/or leak-off line leakage (i.e. history of any leakage, cause, corrective actions).

Energy Northwest Response:

A review of work order history, condition reports and Operations Logs shows no record of Columbia Generating Station (Columbia) ever having a reactor pressure vessel flange O-ring leakage event or leakage in the leak-off piping. In July of 1992 there was an inadvertent pressure switch alarm annunciation from MS-PS-34 during start-up caused by residual water in the leak-off line that had flashed to steam. The calibration procedure was revised to include draining the line.

NRC Request:

RAI 2: What is the fluid head pressure that exists in the leak-off line when the refueling cavity is filled to its normal refueling water level?

Energy Northwest Response:

The high point of the leak-off line is at nozzle N-17 located on the underside of the reactor pressure vessel (RPV) flange. The top of the RPV flange is at elevation 583.1 feet and the flange thickness is 26 inches (2.2 feet). So the nozzle originates at elevation 580.9 feet (583.1 - 2.2). Per procedure the refueling cavity is filled to the fuel pool level during refueling outages. Water level is maintained in the fuel pool above the alarm level of 605.4 feet. Therefore the minimum head pressure in the leak-off line is 24.5 feet (605.4 - 580.9) of water.

NRC Request:

RAI 3: What actions will be taken when using the proposed alternative to ensure the leak-off lines are clear of air prior to performance of the VT-2 examination?

Energy Northwest Response:

Operations will fill and vent the line by opening valves MS-V-753 and MS-V-14 and closing valve MS-V-13. Additionally, a prerequisite in the Work Instructions requires the performer to verify that flood-up of the refuel cavity is completed and the leak-off lines are vented and filled for at least four hours prior to beginning the examination.

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR RELIEF REQUEST
3ISI-15**

Enclosure 1

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NRC Request:

RAI 4: Is the leak-off piping requiring VT-2 examination during the leakage test all accessible for examination? If not, describe the accessible and inaccessible portions of the piping?

Energy Northwest Response:

The leak-off piping is not behind any walls or barriers inside containment. The leak-off piping exits the flange at the 0 degree azimuth just above the ladder to the 568 feet elevation platform. From there the piping extends approximately 20 feet around the Reactor Pressure Vessel (RPV) to pressure switch MS-PS-34 near the 270 degree azimuth. Access is available all the way around the RPV at this level so a VT-2 examination can be performed on the leak-off piping to see signs of leakage up to the ASME Section XI Code boundary valves. The first 43 inches of leak-off piping are behind the RPV insulation. The insulation panel will be removed for the examination allowing access to this length of pipe.

NRC Request:

RAI 5: For the accessible portions of the Reactor Pressure Vessel Flange Leak-off Piping:

- a. Discuss if the piping is insulated or not. If the piping is insulated will the insulation be removed? If insulation will not be removed, discuss how the piping will be examined to identify potential pipe through-wall leakage.
- b. If the subject piping is located in a high elevation or far away location from the examiner, describe how the pipe through-wall leakage can be identified.

Energy Northwest Response:

- a. The leak-off line itself is not insulated. A portion of the line starting at nozzle N-17 is behind the RPV insulation. The RPV insulation panel associated with nozzle N-17 will be removed for the examination. There is no other insulation associated with the leak-off piping. See RAI 6 for accessibility discussion.
- b. The piping is at approximately elevation 579 feet. An averaged sized individual at the platform at elevation 568 feet will be able to examine the piping using standard VT-2 tools such as mirrors and binoculars as needed.

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION FOR RELIEF REQUEST
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Enclosure 1

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NRC Request:

RAI 6: If any of the piping segments requiring VT-2 examination during the leakage test are inaccessible, discuss how the structural integrity of this piping will be demonstrated.

Energy Northwest Response:

All of the leak-off piping is accessible as discussed in Responses 4 & 5. The RPV insulation will be removed to gain access to nozzle N-17 at the RPV flange. The panel is approximately 40 x 42 inches. From nozzle N-17 to the first elbow is 22 3/8 inches with the first elbow six inches below the top of the access panel. The elbow directs the piping away from the RPV into the containment volume. With the panel removed there is sufficient access to view the nozzle and lower portion of the drain line for signs of leakage per ASME Section XI IWA-5241(d). In the event portions of the pipe are obstructed from view, IWA-5241 requires the examiner look for indications of leakage on adjacent piping and surrounding area. In the event that no signs of leakage are found, the piping still communicates directly with the containment volume so in the event of a seal failure and coincident pipe leak the condition will be detected as unidentified leakage and the appropriate actions taken as outlined in the relief request.