UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 15, 2017

Mr. Mark E. Reddemann
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: COLUMBIA GENERATING STATION – RELIEF REQUEST NO. 3ISI-19 FROM THE REQUIREMENTS OF THE ASME CODE, SECTION XI FOR THE THIRD 10-YEAR INSERVICE INSPECTION INTERVAL (CAC NO. MF8925; EPID L-2016-LLR-0007)

Dear Mr. Reddemann:

By letter dated December 7, 2016, as supplemented by letter dated October 3, 2017, Energy Northwest (the licensee) submitted a relief request to the U.S. Nuclear Regulatory Commission (NRC) with regard to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI requirements for volumetric examination of residual heat removal heat exchanger welds at Columbia Generating Station (Columbia).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(g)(5)(iii), the license requested relief for the third inservice inspection (ISI) interval concerning this impracticality.

The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(5)(iii). Therefore, the NRC staff grants Relief Request 3ISI-19 pursuant to 10 CFR 50.55a(g)(6)(i) at Columbia for the third 10-year ISI interval, which began on December 13, 2005, and ended on December 12, 2015.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions regarding this matter, please contact the Project Manager, John Klos at (301) 415-5136 or via e-mail at John.Klos@nrc.gov.

Sincerely,

/RA/

Robert J. Pascarelli, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure:
Safety Evaluation

cc: Listserv

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST NO. 3ISI-19

FOR THE THIRD 10-YEAR INSERVICE INSPECTION INTERVAL

COLUMBIA GENERATING STATION

ENERGY NORTHWEST

DOCKET NO. 50-397

1.0 INTRODUCTION

By letter dated December 7, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16343B035), as supplemented by letter dated October 3, 2017 (ADAMS Accession No. ML17276B587), Energy Northwest (the licensee) submitted Relief Request 3ISI-19 from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI requirements for certain inservice inspections (ISI) of component welds. This relief was requested for Columbia Generating Station (Columbia) for the third 10-Year ISI Interval which began on December 13, 2005, and ended on December 12, 2015.

2.0 REGULATORY EVALUATION

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements except the design and access provisions and the preservice examination requirements set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals, comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(a), 12 months prior to the start of the 120-month interval, subject to the conditions listed in 10 CFR 50.55a(b). The ASME Code of record for the Columbia third 10-year interval ISI program, which began on December 13, 2005, and ended on December 12, 2015, is the 2001 Edition through the 2003 Addenda of the ASME Code.

ASME Code, Section XI, Examination Category C-C, Item Number C3.10 requires surface examination of 100 percent of required areas of each welded attachment as defined in Table IWC-2500-1 and shown in Figure IWC-2500-5.

ASME Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1," as approved for use by the U.S. Nuclear Regulatory Commission (NRC, the Commission) in Regulatory Guide (RG) 1.147, Revision 17, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1" (ADAMS Accession No. ML13339A689), states that a reduction in examination coverage due to part geometry or interference for any ASME Class 1 or 2 weld is acceptable provided that the reduction is less than 10 pecent (i.e., greater than 90 percent examination coverage is obtained).

Paragraph 50.55a(g)(5)(iii), "ISI program update: Notification of impractical ISI Code requirements," of 10 CFR states, in part:

> If the licensee has determined that conformance with [certain ASME Code requirements] is impractical for its facility the licensee must notify the NRC and submit... information to support the determinations. Determination of impracticality in accordance with this section must be based on the demonstrated limitations experienced when attempting to comply with the Code requirements during the inservice inspection interval for which the request is being submitted. Requests for relief made in accordance with this section must be submitted to the NRC no later than 12 months after the expiration of the initial or subsequent 120-month inspection interval or subsequent 120-month inspection interval for which relief is sought.

Paragraph 50.55a(g)(6)(i), "Impractical ISI requirements: Granting of Relief," states:

> The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines are authorized by law, and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request for Relief

In Relief Request 3ISI-19, the licensee requested relief for Columbia for the third 10-Year ISI Interval for the following component welds.

ASME Code Class:	Code Class 2
Examination Category:	C-C, Welded Attachments for Vessels, Piping, Pumps, and Valves
Item Number:	C3.10, Pressure Vessels Welded Attachments
Weld Identification:	RHR "A" Heat Exchanger Support Attachment Welds, AS-1

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief on the basis that compliance with the ASME Code requirement is impractical. The licensee stated that the bottom welds on each of the four heat exchanger support welded attachments are inaccessible since the bottom of the supports are resting on a floor. The licensee further stated that the accessible length of the weld for each support is 111.5 inches or approximately 72 percent of the total length of the weld (153 inches) for each support. The licensee finally stated that to

effectively perform any significant additional ASME Code allowable surface examination, modification and/or replacement of the component would be required.

3.2 NRC Staff Evaluation

As described in the licensee submittal dated December 7, 2016, the surface examination of each of the four heat exchanger support welds would be limited to the top and side portions of the heat exchanger support since the bottom of each support is resting on a floor. In the relief request, the licensee stated that surface examination of only the top and side portions of each heat exchanger support would cover approximately 72 pecent of the weld, which is less than the ASME Code required surface examination coverage.

The licensee's submittal states that the required surface examinations were performed by the magnetic particle method, but it was unclear to the NRC staff if these examinations were performed in accordance with the requirements of the ASME Code. To clarify this, the NRC staff issued a Request for Additional Information (RAI). In its response by letter dated October 3, 2017, the licensee stated that surface examinations were performed in accordance with the requirements of Section V, Article 7 of the ASME Code, as required by Section XI of the ASME Code. The staff finds the licensee response acceptable since the surface examinations were performed in accordance with the requirements of the ASME Code.

The licensee's submittal states that the "A" RHR system is subject to VT-2 visual examination during system pressure testing and that there were no recorded leaks during these pressure tests last interval. However, it was unclear to the NRC staff how the system pressure test is relevant, since the Category C-C attachment welds are not pressure boundary welds. To clarify this, the NRC staff issued an RAI. In its response by letter dated October 3, 2017, the licensee stated that although the support welds are not pressure boundary welds, VT-2 examination results provide some assurance that there is no weld defect in the inaccessible region of the support that resulted in through-wall leakage. The staff finds the licensee's response acceptable since it confirms that the Category C-C attachment welds are not pressure boundary welds and clarifies the benefits and limitations of the VT-2 visual examination for this category of weld.

Based on the examination techniques used and the surface examination coverage obtained, it is reasonable to conclude that, if significant service-induced degradation was present in these welds, evidence would have been detected by the examinations performed. Therefore, the NRC staff finds that the coverage achieved is acceptable. The NRC staff also finds that it would be impractical for the licensee to comply with the ASME Code surface examination coverage requirements if the component could not be modified and/or replaced. Furthermore, the NRC staff finds that to modify and/or replace the component would be a burden on the licensee.

4.0 CONCLUSION

As set forth above, the NRC staff determines that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(5)(iii), and is in compliance

with the ASME Code requirements. Therefore the NRC staff approves Relief Request 3ISI-19 at Columbia for the third 10-Year ISI Interval which began on December 13, 2005, and ended on December 12, 2015.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in the subject relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: J. Jenkins, NRR

Date: December 15, 2017

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