

**ENERGY
NORTHWEST**

P.O. Box 968 ■ Richland, Washington 99352-0968

April 8, 2004
GO2-04-065

10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397;
10 CFR 50.55a REQUEST TO INCORPORATE ASME CODE CASE N-
663 IN COLUMBIA'S SECOND TEN-YEAR INTERVAL INSERVICE
INSPECTION PROGRAM PLAN**

Dear Sir or Madam:

Pursuant to 10 CFR 50.55a(a)(3)(i), Energy Northwest herein requests the NRC to approve the use of an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI requirements for examination of Class 1 Examination Category B-F and Class 2, Examination Category C-F-2 welds at Columbia Generating Station (Columbia). The Attachment to this letter contains Energy Northwest's 10 CFR 50.55a request to use ASME Code Case N-663 for Columbia. The proposed alternative would prevent unnecessary weld inspections and reduce radiological dose while maintaining an acceptable level of safety and quality for examination of the affected welds in accordance with 10 CFR 50.55a(a)(3)(i).

Energy Northwest requests approval of the request detailed in the Attachment prior to March 2005 to allow implementation in Columbia's refueling outage scheduled for spring of 2005.

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If you have any questions or require additional information regarding this matter, please contact Ms. CL Perino, Licensing Manager, at (509) 377-2075.

Respectfully,

H. W. Coleman
acting for

DK Atkinson
Vice President, Technical Services
Mail Drop PE08

Attachment: 10 CFR 50.55a Request

cc: BS Mallet - NRC - RIV
BJ Benney - NRC - NRR
NRC Sr. Resident Inspector - 988C
RN Sherman - BPA/1399
TC Poindexter - Winston & Strawn

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10 CFR 50.55a Request Number 2ISI-028

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

-Alternative Provides Acceptable Level of Quality and Safety-

ASME Code Components Affected

American Society of Mechanical Engineers (ASME) Section XI Class 1 piping welds Examination Category B-F, Item Numbers B5.10 and B5.130 and Class 2 piping welds Examination Category C-F-2, Item Numbers C5.50 through C5.82.

Applicable Code Edition and Addenda

The applicable code is ASME Section XI 1989 Edition with no Addenda. Columbia Generating Station (Columbia) is in its second inservice inspection interval, third inspection period.

Applicable Code Requirements

The ASME Section XI subarticles IWB-2500 and IWC-2500 require components to be examined as specified in Tables IWB-2500-1 and IWC-2500-1. These tables require subjecting a sampling of piping welds (as well as other components) to various types of non-destructive examinations (i.e., NDE, volumetric, and/or surface examinations).

Reason for Request

Code required surface examinations are applicable to the general population of B-F and C-F-2 welds. The proposed alternatives as described in Code Case N-663 would require surface examination of areas identified as susceptible to outside surface attack. Columbia is requesting adoption of Code Case N-663 in order to avoid unnecessary inspections and to reduce radiological dose. The Code Case N-663 methodology would provide these benefits while maintaining an adequate level of quality and safety for examination of the affected welds.

Proposed Alternative

Energy Northwest proposes to use ASME Code Case N-663 in its entirety as an alternative to the surface examination requirements of Tables IWB-2500-1 and IWC-2500-1 for examination categories B-F and C-F-2. All areas of the subject welds identified as susceptible to outside surface attack will receive surface exams during the Columbia Generating Station Second Ten-Year Interval in accordance with Code Case N-663.

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Basis for Use

The subject item numbers in ASME Section XI require a volumetric and/or surface exam on selected piping welds to ensure that generic degradation mechanisms are not active on either the inside diameter or the Outside Diameter (O.D.). Currently, these welds are selected using deterministic criteria that are not based on the probability of exposure to degradation mechanisms. The ASME Code Case N-663 provides an alternative to the current ASME Section XI requirements for defining the number and location of surface examinations for piping components.

The ASME Section XI Task Group on ISI Optimization, Report No. 92-01-01, "Evaluation of Inservice Inspection Requirements for Class 1, Category B-J Pressure Retaining Welds in Piping," dated July 1995, reported (with 50 units responding and a total of 9333 welds inspected) only 2 welds (0.02%) were found to have flaws detected by Section XI surface examinations. These flaws were induced during fabrication. In addition to the ASME task group report, several risk-informed Code cases have been developed for use on piping welds (e.g., ASME Code Cases N-560, N-577, and N-578). One of the methods for risk-informing piping examinations is described in Electric Power Research Institute (EPRI) TR-112657, Rev. B-A, "Revised Risk-informed Inservice Inspection Evaluation Procedure." Table 4-1, "Summary of Degradation-Specific Inspection Requirements and Examination Methods," of the EPRI report lists the required degradation mechanisms to be evaluated in Class 1, 2, and 3 piping. It also identifies the risk-informed examination method required for each of these degradation mechanisms. The only degradation mechanism identified as requiring a surface examination is O.D. chloride cracking. These two initiatives prompted ASME to re-evaluate the value of surface examinations.

Code Case N-663 incorporates lessons learned from the risk-informed initiatives and industry examination experience into Section XI by requiring an evaluation to identify locations, if any, where a surface examination would be beneficial based on a generic piping degradation mechanism perspective. This evaluation would identify locations where O.D. degradation is most likely to occur by reviewing plant-specific programs, practices, and operating experience. When the potential for degradation is identified, Code Case N-663 defines examination techniques, volumes, and frequencies. As such, application of the Code Case N-663 methodology will identify more appropriate locations for surface examination, if any, and eliminate examinations at locations where degradation is unlikely. Other ASME Section XI examination requirements for the subject piping welds, including volumetric examinations and pressure testing, will continue to be performed.

Code Case N-663 was approved by the ASME Boiler and Pressure Vessel Code Committee on September, 17, 2002, but has not yet been included in the most recent listing of NRC approved Code cases provided in Revision 13 of Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability - ASME Section XI Division 1."

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Compliance with the proposed alternative described above will provide an acceptable level of quality and safety for examination of the affected welds.

Duration of Proposed Alternative

The proposed alternative will be implemented for the remainder of the second 10-year inservice inspection interval, or until Code Case N-663 is published in a future version of NRC Regulatory Guide (RG) 1.147, "Inservice Inspection Code Case Acceptability - ASME Section XI, Division 1," at which time the provisions of the Code Case N-663 conditions and limitations specified in RG 1.147 will be followed.

Precedents

Similar requests have been granted to other licensees such as Entergy Operations, Inc.'s ANO-1, Grand Gulf, River Bend, and Waterford 3 plants (ref: TAC Nos. MB 6880, MB 6881, MB 6879, MB 6882, dated August 26, 2003, ADAMS Accession Number ML032390190)

References

1. American Society of Mechanical Engineers (ASME) Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 1989 Edition, No Addenda.
2. Title 10 of the Code of Federal Regulations, Part 50, Section 55a, Codes and Standards
3. ASME Section XI Task Group on ISI Optimization, Report No. 92-01-01, "Evaluation of Inservice Inspection Requirements for Class 1 Category B-J Pressure Retaining Welds in Piping," dated July 1995. (ADAMS Accession Number ML030910450, dated 3/14/2003)
4. ASME Code Case N-663, "Alternative Requirements for Classes 1 and 2 Surface Examinations, Section XI, Division 1."
5. NRC Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1, Revision 13, January 2004.
6. EPRI TR 112657, Revision B-A, Revised Risk-Informed Inservice Inspection Evaluation Procedure, Final Report, December 1999.