

## NRR-PMDAPEm Resource

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**From:** Lingam, Siva  
**Sent:** Tuesday, February 10, 2015 10:59 AM  
**To:** jdshaw@nppd.com  
**Cc:** Oesterle, Eric; Rosenberg, Stacey; McLellan, Thomas  
**Subject:** Cooper Nuclear Station - Requests for Additional Information (RAIs) for Relief Request No. RI-08, Rev. 0 (TAC No. MF4429) (Public)

Please note the following **official** RAIs (Non-Proprietary) for the subject relief request, and provide your responses within 30 days from the date of this e-mail.

The paragraph headings in Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 50.55(a) were changed by *Federal Register* notice dated November 5, 2014 (79 FR 65776), which became effective on December 5, 2014 (e.g., 10 CFR 50.55a(a)(3)(i) is now 50.55a(z)(1), and 50.55a(a)(3)(ii) is now 50.55a(z)(2)). See the cross-reference tables, which are cited in the notice, at Agencywide Documents Access and Management System (ADAMS) Accession No. ML14015A191 and ADAMS package Accession No. ML14211A050.

### 1. SCOPE

By letter dated July 15, 2014 (ADAMS Accession No. ML14202A081), the licensee, Nebraska Public Power District (NPPD), submitted Proposed Alternative RI-08, Revision 0 from the requirements of the American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code* (ASME Code), Section XI, for Cooper Nuclear Station (CNS). The proposed alternative applies to the fourth 10-year inservice inspection (ISI) interval, in which the licensee adopted the 2001 edition through the 2003 addenda of ASME Code, Section XI as the Code of Record.

Section 50.55a of 10 CFR Part 50, paragraph (z), *Alternatives to codes and standards requirements states*: Alternatives to the requirements of paragraphs (b) through (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation, or Director, Office of New Reactors, as appropriate. A proposed alternative must be submitted and authorized prior to implementation. The licensee must demonstrate that:

- (1) *Acceptable level of quality and safety.* The proposed alternative would provide an acceptable level of quality and safety; or
- (2) *Hardship without a compensating increase in quality and safety.* Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Proposed Alternative RI-08, Revision 0 has been submitted under 10 CFR 50.55a(z) under alternative subparagraph 1 the alternative will provide an acceptable level quality and safety.

The staff has reviewed the information submitted by the licensee, and based on this review, determined the following information is required to complete the evaluation.

### 2. REQUEST FOR ADDITIONAL INFORMATION

#### 2.1 Proposed Alternative RI-08, Revision 0, Examination Category B-D, Items B3.90 and B3.100, Full Penetration Welded Nozzles in Vessels

The licensee proposed, in lieu of performing examinations on 100 percent of the reactor pressure vessel (RPV) nozzle-to-vessel welds and nozzle inside radius sections, to incorporate Code Case N-702, *Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-*

*Shell Welds*, which requires a minimum of 25% of nozzle inner radii and nozzle-to-shell welds, including at least one nozzle from each system and nominal pipe size. NRC Regulatory Guide 1.193, Revision 3, *ASME Code Cases Not Approved For Use*, states that:

*The applicability of Code Case N-702 must be shown by demonstrating that the criteria in Section 5.0 of NRC Safety Evaluation dated December 19, 2007 (ML073600374) regarding BWRVIP-108: "BWR Vessel and Internals Project, Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii," EPRI Technical Report 1003557, October 2002 (ML023330203) are met. The evaluation demonstrating the applicability of the Code Case shall be reviewed and approved by the NRC prior to the application of the Code Case.*

On April 19, 2013, the NRC issued a Safety Evaluation (SE) (ADAMS Accession No. ML13071A245) regarding the review of BWRVIP-241, "BWR Vessel and Internals Project, Probabilistic Fracture Mechanics Evaluation for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii." In the SE, the NRC states that:

*Licensees who plan to request relief from the ASME Code, Section XI requirements for RPV nozzle-to-vessel shell welds and nozzle inner radius sections may reference the BWRVIP-241 report as the technical basis for the use of ASME Code Case N-702 as an alternative. However, the licensees should demonstrate the plant-specific applicability of the BWRVIP-241 report to their units in the relief request by addressing the conditions and limitations specified in Section 5.0 of this SE. The licensees may submit their relief requests pursuant to 10 CFR 50.55a(a)(3)(i).*

NPPD provided their calculations and results which meet the criteria (Criterion 1, 2, and 3 for Recirculation Inlet (N2) Nozzles) set forth in Section 5 of the NRC safety evaluation mentioned above for BWRVIP-241. However, there is a discrepancy in the specific values provided for the RPV wall thickness (t) at CNS. The value provided in proposed alternative RI-08, Revision 0 and Table 2-1 of BWRVIP-241 for the RPV wall thickness is [ ]. The value provided in BWRVIP-108, Table 3-1 for the RPV wall thickness is [ ].

- 2.1.1 Please verify and state the specific values for the RPV inner radius and wall thickness provided in proposed alternative RI-08, Revision 0 and explain why there is an inconsistency in the values provided in the BWRVIP-108 and BWRVIP-241 reports, and those provided in your submittal dated July 15, 2014. If the current submittal is based on incorrect geometry information please revise it.
- 2.1.2 Please provide a list of what inspections have already been performed on the Recirculation Inlet nozzle-to-vessel welds and inner radius sections listed in Table RI-08-1 of RI-08, Revision 0, for which this alternative is requested. Please describe any indications that were found and how these indications were dispositioned.
- 2.1.3 The total number of nozzles listed in Table RI-08-02 is 10. The total number of nozzle-to-vessel welds listed in Table RI-08-01 is 7. Please verify the correct number of Recirculation Inlet Nozzles to be evaluated in proposed alternative RI-08 and update the tables provided in the current submittal.
- 2.1.4 ASME Code Case N-702 stipulates that a VT-1 examination may be used in lieu of the volumetric examination for the RPV nozzle inner radius section (ASME Code, Category B-D, Item B3.100). This has not been accepted by the NRC. Please state what type of examination (volumetric or VT-1) is planned for the RPV recirculation inlet nozzle inner radius sections listed in the licensee's submittal and whether or not the licensee invokes Code Case N-648-1, *Alternative Requirements for Inner Radius Examination of Class 1 Reactor Vessel Nozzles, Section XI Division 1* with NRC specified condition.

Siva P. Lingam  
U.S. Nuclear Regulatory Commission  
Project Manager (NRR/DORL/LPL4-1)

Cooper Nuclear Station  
Diablo Canyon Nuclear Power Plant  
Location: O8-D5; Mail Stop: O8-B3  
Telephone: 301-415-1564; Fax: 301-415-1222  
E-mail address: [siva.lingam@nrc.gov](mailto:siva.lingam@nrc.gov)

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**From:** Lingam, Siva

**Created By:** Siva.Lingam@nrc.gov

**Recipients:**

"Oesterle, Eric" <Eric.Oesterle@nrc.gov>  
Tracking Status: None  
"Rosenberg, Stacey" <Stacey.Rosenberg@nrc.gov>  
Tracking Status: None  
"McLellan, Thomas" <Thomas.McLellan@nrc.gov>  
Tracking Status: None  
"jdshaw@nppd.com" <jdshaw@nppd.com>  
Tracking Status: None

**Post Office:**

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