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NLS2017095  
November 30, 2017

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

**Subject:** Response to Nuclear Regulatory Commission Request for Additional Information  
for Relief Request RI-21, Revision 1  
Cooper Nuclear Station, Docket No. 50-298, DPR-46

- References:**
1. Email from Thomas Wengert, U.S. Nuclear Regulatory Commission, to Jim Shaw, Nebraska Public Power District, dated October 26, 2017, "Cooper Nuclear Station - Final RAI RE: Relief Request RI-21, Revision 1 (CAC No. MF9623)"
  2. Letter from Kenneth Higginbotham, Nebraska Public Power District, to the U.S. Nuclear Regulatory Commission, dated March 29, 2017, "10 CFR 50.55a Request Number RI-21, Revision 1"

Dear Sir or Madam:

The purpose of this letter is for the Nebraska Public Power District to respond to the Nuclear Regulatory Commission's Request for Additional Information (RAI) (Reference 1) related to the Cooper Nuclear Station Relief Request RI-21 (Reference 2).

The responses to the specific RAI questions are provided in the attachment to this letter.

This letter does not contain any new regulatory commitments.

If you have any questions concerning this matter, please contact Jim Shaw, Licensing Manager, at (402) 825-2788.

Sincerely,

John Dent, Jr.  
Vice President - Nuclear  
and Chief Nuclear Officer

A047  
NRR

/dv

Attachment: Response to Nuclear Regulatory Commission Request for Additional  
Information for Relief Request RI-21, Revision 1

cc: Regional Administrator w/ attachment  
USNRC - Region IV

Cooper Project Manager w/ attachment  
USNRC - NRR Plant Licensing Branch IV

Senior Resident Inspector w/ attachment  
USNRC - CNS

NPG Distribution w/o attachment

CNS Records w/ attachment

**Attachment**

**Response to Nuclear Regulatory Commission Request for Additional Information  
for Relief Request RI-21, Revision 1**

Cooper Nuclear Station, Docket No. 50-298, DPR-46

The Nuclear Regulatory Commission (NRC) request for additional information (RAI) regarding Relief Request RI-21, Revision 1, is shown in italics. The Nebraska Public Power District (NPPD) response to the request is shown in normal font.

RAI-1

*In Section 3 of the attachment to the submittal, the licensee categorized the piping welds as Examination Category R-A, Item No. R1.20-1. The NRC staff notes that this categorization does not exist in Table 1 of ASME Code Case N-578-1 "Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method B, Section XI, Division 1." Revise or justify this categorization.*

NPPD Response:

The RAI references R1.20-1 which CNS believes should be R1.20-4. The R1.20-4 Item No. designation is based on the item numbering convention used in the Cooper Nuclear Station (CNS) Risk-Informed Inservice Inspection Program (RI-ISI) that uses the "Code" Item No. designator but adds the "Risk Categorization" from N-578-1 as referenced in Paragraph I-3.3.2, Risk Categories, and Figure I-1, Risk Evaluation Process for high, medium and low risk categorization as applicable. CNS used this convention to aid in management of the CNS RI-ISI Program for the Fourth Interval.

RAI-2

*As documented in the submittal (Section 4 of the Attachment, Section 12.0, and Section 1.0 (Table 1-1) of Appendix 1),*

*a. Weld No. RVI-BJ-16B1 was subjected to the ultrasonic testing (UT) during the third 10-year inservice inspection (ISI) interval in 2005, and achieved essentially 100 percent coverage of the required examination volume.*

- 1. Confirm that Weld No. RVI-BJ-16B1 is a butt weld.*
- 2. Were there any indications found by UT? If yes, describe.*
- 3. Confirm that the UT procedures were demonstrated and personnel qualified in accordance with ASME Section XI, Appendix VIII.*

- b. Weld No. RVI-BJ-16B1 was subjected to the UT during fourth 10-year ISI interval in 2014. In footnote 1 (Note 1) of the table in Section 12.0 of Appendix 1 (page 70 of 92), the licensee states, in part:

*The previous exam from 2005 reported 100 [percent] Code and procedural coverage (full volume). Current exam coverage from 2014 was calculated to be 88.56 percent with a procedural coverage of 85.69 [percent]. The coverage difference appears to be due to the currently qualified procedure, which requires the use of contoured RL probes.*

1. Describe the differences between the following percent coverages: (a) "calculated to be 88.56 percent" and (b) "procedural coverage of 85.69 percent." [emphasis added]
  2. Provide justification for claiming coverage of 88.56 percent rather than coverage of 85.69 percent (refer to Section 1.0 and 12.0 of Appendix 1) in the fourth 10-year ISI interval.
  3. Describe the differences between "Code Coverage" and "Procedural Coverage."
  4. Confirm that the UT procedures were demonstrated and personnel qualified in accordance with Section XI, Appendix VIII.
- c. In Section 12.0 of Appendix 1 of the relief request, Weld No. RVI-BJ-16B1 is identified as Examination Category R-A, Item No. RI.20 (element not subject to a damage mechanism). In Table 1-1 of Appendix 1 of the relief request, Weld No. RVI-BJ-16B1 is described as SB-166 (Inconel) nozzle and welded to SA-182 (stainless steel) safe end with Inconel 182 weld metal.

*The NRC staff notes that Inconel 182 is known to be susceptible to the intergranular stress corrosion cracking (IGSCC). Justify this categorization.*

- d. The NRC staff notes that NRC NUREG-0313 "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping," Revision 2 (ADAMS Accession No. ML031470422), categorizes (e.g., Category A through G) a weld based on degrees of susceptibility to IGSCC, depending on the materials and processing involved. What is the categorization (e.g., Category A through G) of Weld No. RVI-BJ-16B1 with respect to NUREG-0313?
- e. The NRC staff notes that, as stated on page 4 of 92 of the attachment to the submittal, there are four reactor vessel (RV) instrument penetration nozzle-to-safe-end butt welds identified in this relief request. In accordance with the CNS Risk-informed (RI)-ISI program, one of these four welds was selected for inspection in the fourth 10-year interval.
1. Did the licensee inspect any of these four welds during the third 10-year interval? If yes, discuss the results of the inspections.
  2. Was any through-wall leakage identified in any of these four welds during fourth 10-year ISI interval?

NPPD Response:

- a.1 RVI-BJ-16B1, instrument nozzle to safe-end weld is a butt weld as represented in Figures 12-1 to 12-3 of the Relief Request.
- a.2 No indications have been identified to date with this weld.
- a.3 Examinations performed in both the Third and Fourth ISI Intervals used procedures based on the generic Electric Power Research Institute (EPRI) procedure, PDI-UT-10 that was demonstrated and in full accordance with Appendix VIII requirements. Personnel who performed the examinations were qualified to Appendix VIII.
- b.1 The 88.56 percent reported "Code Coverage" is based on examination volume C-D-E-F (bottom 1/3 of weld thickness) identified in Figure IWB-2500-8 of ASME Section XI. The 85.69 percent reported as "Procedural Coverage" represents the examination volume E-F-G-H (full weld thickness) defined in EPRI demonstrated procedure PDI-UT-10, Revision E. The difference in the two coverages is due to the amount of coverage that could be achieved for each of the respective volumes.
- b.2 American Society of Mechanical Engineers (ASME) Section XI, Figure IWB-2500-8, specifies the required examination volume as the lower one-third of the weld volume extended out one-quarter inch from each weld bevel (volume C-D-E-F). Procedure PDI-UT-10, Figure 5, volume E-F-G-H exceeds the ASME Code requirements that interrogates the full wall thickness. Therefore, CNS is requesting relief based on the 88.56% Code coverage value.
- b.3 "Code Coverage" is based on examination volume C-D-E-F identified in Figure IWB-2500-8 of ASME Section XI. "Procedural Coverage" represents the examination volume E-F-G-H defined in EPRI demonstrated procedure PDI-UT-10, Revision E.
- b.4 Examinations performed in both the Third and Fourth ISI Intervals used procedures based on generic EPRI procedure PDI-UT-10 that were demonstrated and in full compliance with Appendix VIII requirements. Generic procedure PDI-UT-10, Revision A, was used in the Third ISI Interval and required only the use of shear wave transducers. Generic procedure PDI-UT-10, Revision E, was used in the Fourth Interval and required use of both shear wave and refracted longitudinal (RL) wave transducers. The larger sized RL transducers used in the Fourth Interval resulted in lift-off and loss of coverage that was not experienced in the Third Interval using only shear wave transducers. Personnel that performed the examinations were qualified in accordance with Appendix VIII.
- c. In accordance with Code Case N-578-1, Table 1, Item No. 1.16, welds subject to IGSCC require the Extent and Frequency of examination to be in accordance with Note 2 of Table 1. Note 2 states: *"Includes all elements identified in accordance with the risk-informed selection process of Appendix I."*

Table I-1 of Code Case N-578-1, Appendix I, for mechanism SCC/IGSCC, requires the attributes to be evaluated in accordance with the existing plant IGSCC program per NRC Generic Letter (GL) 88-01.

NRC GL 88-01, Supplement 1 (February 4, 1992), states, in part:

*"GL 88-01 applies to all BWR austenitic stainless steel piping that is 4 inches or larger in nominal diameter and that contains reactor coolant at a temperature above 200°F during power operation regardless of ASME Code classification. It also applies to reactor vessel attachments and appurtenances such as jet pump instrumentation penetration assemblies and head spray and vent components."*

The subject weld (RVI-BJ-16B1) is nominal pipe size (NPS) 2 and is therefore excluded from the existing plant IGSCC program. In accordance with Appendix I of the Code Case, the attributes were evaluated against the criteria of GL 88-01 and determined not to be within the scope of the generic letter and therefore assigned Item No. R1.20.

However, it should be noted that CNS performed the examination of this weld by extending the examination volume out to one-half (1/2) inch from the weld bevel in accordance with EPRI TR-112657, Figure 4-10 (A-B-C-D), for IGSCC and RI-ISI Category Item R1.20, Note (1) from Code Case N-578-1 (C-D-E-F extended 1/2 inch) instead of the one-quarter (1/4) inch identified in the Code figure IWB-2500-8(c) as well as the PDI-UT-10 figures. If CNS would have assigned this weld as Item R1.16 for IGSCC, the examination volume would have only been extended one-quarter (1/4) inch. Consequently, assignment as R1.20 was the more conservative approach for the UT examination of this weld.

- d. NUREG 0313, Revision 2, provides the technical bases for the NRC staff's revised recommended methods to control the intergranular stress corrosion cracking susceptibility of boiling water reactor (BWR) piping. In itself, NUREG 0313 did not require actions of the licensees or response from the licensees. Licensees evaluated their plants against the criteria of NUREG 0313 as requested by the NRC through generic communications such as GL 84-11, "Inspections of BWR Stainless Piping" and GL 88-01, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping."

GL 88-01, Supplement 1, being the most recent, cites NUREG 0313, Revision 2, as the technical bases for the positions contained in the generic letter. GL 88-01 is also noted as superseding Generic Letter 84-11.

GL 88-01 requested licensees and construction permit holders of BWRs to furnish plans relating to piping replacement, inspection, repair, and leakage detection. The licensee response was to indicate each licensee's plans to follow the staff's positions (staff positions 1 through 13 were contained in Attachment A to the initial GL and then some were modified in Supplement 1 to the GL).

NRC Position 10, Inspection Schedules, was summarized in Table 1 of Attachment A to GL 88-01 and assigns IGSCC Categories based on individual attributes of each weld that is within the scope of the generic letter. Although Table 1 of Attachment A to the generic letter may be representative of information in NUREG 0313, each licensee categorized their welds in accordance with GL 88-01 and not NUREG 0313, Revision 2.

On page 2 of GL 88-01, Supplement 1, it states, in part:

*"GL 88-01 applies to all BWR austenitic stainless steel piping that is 4 inches or larger in nominal diameter and that contains reactor coolant at a temperature above 200°F during power operation regardless of ASME Code classification. It also applies to reactor vessel attachments and appurtenances such as jet pump instrumentation penetration assemblies and head spray and vent components."*

In accordance with the guidance of GL 88-01, welds smaller than NPS 4 were not categorized or included in the licensee's IGSCC inspection programs.

- e.1 Yes, three of the four welds were examined due to CNS transitioning to a RI-ISI Program in the third period of the Third Interval. RVI-BJ-16A1 and RVI-BJ-11A1 were examined by liquid penetrant with no recordable indications in the second period of the Third Interval. These surface examinations were performed prior to CNS adopting a RI-ISI Program. RVI-BJ-16B1 was examined by ultrasonic methods in the third period as a RI-ISI Program examination with no recordable indications identified.
- e.2 No through wall leakage has been identified in any of these welds. CNS also examines these instrument lines per ASME Class 1 pressure test required by Category B-P. CNS last performed a VT-2 examination in RE29 (November 2016).

### RAI-3

*Provide the operating pressure and temperature for each piping weld in this relief request.*

### NPPD Response:

RI-21, Revision 1, is requesting relief on two piping welds, RVI-BJ-16B1, nozzle to safe-end weld (2 inch nominal) and CWB-BJ-27, valve to elbow weld (4 inch nominal).

RVI-BJ-16B1 is on an instrument line connected to the reactor. The operating pressure and temperature for this weld is estimated to be approximately 990 psig and 525 degrees Fahrenheit, respectively.

CWB-BJ-27 is located in the reactor water cleanup line that connects to the reactor feedwater injection line. The operating pressure and temperature for this weld is estimated to be approximately 1045 psig and 425 degrees Fahrenheit, respectively.

RAI-4

For several of the RPV nozzle welds addressed in RI-21, Rev. 1, the licensee reported limited scope examination coverages that had decreased from those that were previously approved by the NRC for an earlier version of this fourth ISI interval relief request. Specifically, in its safety evaluation dated January 12, 2010 (ADAMS Accession No. ML093521350), for Relief Request No. RI-21, Rev. 0, dated February 16, 2009 (ADAMS Accession No. ML090540420), the NRC staff granted relief for limited-scope examinations for several of the RPV nozzle welds that are now addressed again in RI-21, Rev. 1, with lower reported coverages. The limited scope exams that were previously approved for the fourth ISI interval are identified in Table 1 below.

The 2009 submittal for RI-21, Rev. 0 states that CNS performed the limited scope reactor pressure vessel (RPV) nozzle examinations using the alternative examination volume defined in Code Case N-613-1. Since both Rev. 0 and Rev. 1 of RI-21 reported the use of Code Case N-613-1, the NRC staff could not determine the reason for the decrease in the limited-scope examination coverages. In addition, for RPV nozzle welds identified in Table 1 below that were not previously approved in RI-21, Rev. 0, the staff could not determine how the application of Code Case N-613-1 for the fourth ISI interval would result in lower exam coverages than those reported for the third ISI interval. Therefore, please explain how the coverages for the fourth ISI interval limited examination were determined for the subject RPV nozzle welds, as detailed in Table 1 and Parts "a" through "d" below:

**Table 1 – Changes in Reported Coverage for Item No. B3.90 RPV Nozzle Welds**

<b>Component ID</b>	<b>Limited-Scope Exam Coverage Reported in RI-21, Rev. 1</b>	<b>Was 4th Interval Relief Previously Requested/Approved per RI-21, Rev. 0? (Yes or No)</b>	<b>Previously Approved Limited-Scope Coverage per RI-21, Rev. 0</b>	<b>Information Needed for Review of RI-21, Rev. 1</b>
Recirculation Outlet, NVE-BD-N1A	25.76 percent	Yes	46 percent	Parts (a), (b)
Recirculation Inlets, NVE-BD-N2E	37.36 percent	Yes	55 percent	Parts (a), (b)
NVE-BD-N2H	37.36 percent	Yes	55 percent	Parts (a), (b)
NVE-BD-N2K	37.36 percent	Yes	55 percent	Parts (a), (b)
NVE-BD-N2C	37.36 percent	No	N/A	Part (c)
NVE-BD-N2F	37.36 percent	No	N/A	Part (c)
NVE-BD-N2G	37.36 percent	No	N/A	Part (c)
NVE-BD-N2J	37.36 percent	No	N/A	Part (c)
Main Steam Outlet, NVE-BD-N3A	27.85 percent	Yes	49 percent	Parts (a), (b)
Reactor	36.8 percent	No	N/A	Part (c)

<i>Feedwater,</i>	<i>39 percent</i>	<i>No</i>	<i>N/A</i>	<i>Part (c)</i>
<i>NVE-BD-N4A</i>	<i>36.8 percent</i>	<i>No</i>	<i>N/A</i>	<i>Part (c)</i>
<i>NVE-BD-N4B</i>	<i>39 percent</i>	<i>No</i>	<i>N/A</i>	<i>Part (c)</i>
<i>NVE-BD-N4C</i>				
<i>NVE-BD-N4D</i>				
<i>Core Spray</i>				
<i>Inlet</i>				
<i>NVE-BD-N5A</i>	<i>31.05 percent</i>	<i>Yes</i>	<i>51 percent</i>	<i>Parts (a), (b)</i>
<i>Top Head</i>				
<i>Spray</i>				
<i>NVE-BD-N6B</i>	<i>18.52 percent</i>	<i>No</i>	<i>N/A</i>	<i>Part (c)</i>
<i>Top Head Vent</i>				
<i>NVE-BD-N7</i>	<i>59.09 percent</i>	<i>No</i>	<i>N/A</i>	<i>Parts (c), (d)</i>
<i>Control Rod</i>				
<i>Drive (CRD)</i>				
<i>Return</i>				
<i>NVE-BD-N9</i>	<i>37.48 percent</i>	<i>No</i>	<i>N/A</i>	<i>Part (c)</i>

- a. For those RPV nozzle weld exam limitations that were previously approved per RI-21, Rev. 0, please state whether the actual UT that achieved the limited coverages reported in RI-21, Rev. 1 are the same as those previously addressed in RI-21, Rev. 0. Specifically, were the new reduced examination coverages addressed in RI-21, Rev. 1 determined exclusively by recalculation?
- b. If the changes to the RPV nozzle weld limited coverages from RI-21, Rev. 0 to RI-21, Rev. 1 were determined exclusively by recalculation, please explain whether the recalculated limited examination coverages for RI-21, Rev.1 were based on:
- (1) Changes to the definition of the full scope (i.e., 100 percent) exam volume, as specified in Figure IWB-2500-7 of the Code vs. ASME Code Case N-613-1; or
  - (2) changes to the methodology used for crediting and/or determining the achieved coverage;  
or
  - (3) a combination of (1) and (2).

For example, Section 2.0 of Appendix 1 of the attachment to RI-21, Rev. 1 reports "25.76" percent as the limited scope examination coverage of RPV Nozzle Weld NVE-BD-N1A, which is a reduction from the previously approved RI-21, Rev. 0 coverage of "46" percent. However, it is not clear whether the 25.76 percent limited-scope coverage in Rev. 1 is based on the full scope (100 percent) exam volume specified Figure IWB-2500-7 (i.e., Exam Volume "A-B-C-D-E-F-G-H-I") of Table IWB-2500-1 of the ASME Code, Section XI or the alternative reduced examination volume specified in ASME Code Case N-613-1, Figure 1 (i.e., Exam Volume "A-B-C-D-E-F-G-H"), and/or whether there was a change in methodology for crediting actual

*coverage. Please clarify this issue for all limited RPV nozzle weld exams that were previously approved in RI-21, Rev. 0 so that the NRC staff can accurately determine the basis for the changes in limited coverages addressed RI-21, Rev. 1.*

- c. The NRC staff identified that relief was not previously requested or approved in RI-21, Rev. 0 for the reactor feedwater nozzles, top head spray nozzle, top head vent nozzle, CRD return line nozzle, and several of the recirculation inlet nozzles. For these nozzle weld exams, please explain how the application of Code Case N-613-1 for the fourth ISI interval would result in lower exam coverages than those reported for the third ISI interval, given that the full scope (100 percent) exam volume per the Code Case is lower than that required by Figure IWB-2500-7 of the Code. The response to this part should also address any other reasons for a reduction in examination coverage from third to fourth ISI interval not related to Code Case N-613-1 (e.g., such as corrective action for crediting excessive exam coverage, similar to issues raised in RAI-5).*
- d. For the top head vent nozzle, there are inconsistencies in the discussion of the third ISI interval examination coverages in Section 8.0 of Appendix 1 of the attachment to RI-21, Rev. 1. Specifically, the table in this section specifies a third ISI interval examination coverage of "58.6" percent in 1998, whereas the "Note 1" text beneath the table states that previous exams from 1995 and 2001 reported a coverage of "92.25" percent. Please clearly state the actual third ISI interval examination coverage and the corresponding calendar year when this exam was performed.*

NPPD Response:

- a. The examination coverages of the nozzles listed in RI-21, Revision 0, were recalculated based on the original UT examinations conducted early in the Fourth Interval. The recalculated values were included in RI-21, Revision 1, along with the other nozzles that were examined later in the interval.
- b. Due to questions regarding the definition of the full scope (100 percent) volume specified in Figure IWB-2500-7(a) as well as the alternative reduced examination specified in Figure 1 of ASME Code Case N-613-1, CNS requested ASME Section XI clarify the examination volume requirements for the CNS nozzles since the nozzle-to-shell blend radius weld extended well beyond the weld bevel. ASME responded with Interpretation XI-1-10-40 that clarified the examination volume in ASME Section XI and Code Case Figures, i.e., A-B-C-D-E-F-G-H-I in Figure IWB-2500-7(a) and A-B-C-D-E-F-G-H in Figure 1, respectively, is determined from the weld bevel vs. the toe of the nozzle-to-shell blend radius weld as previously calculated. It should also be noted that there was a typographical error in RI-21, Revision 1, where Note 1 for nozzles N1A (page 12), N2 (page 18), N3 (page 23), and N5 (page 40) made reference to 1/2T which should have been 1/2 inch.

Changes in the way CNS applied the definition of the alternative reduced volume in N-613-1 is the basis for the changes in coverages from RI-21, Revision 0, to RI-21, Revision 1. Additional nozzles that were added with Revision 1 because they were examined later in the

Interval were calculated from the alternative reduced volume based on the clarification of the ASME Interpretation. Figures 1, 2, and 3 identify how the examination volume was applied to the CNS nozzles. Figure 1 identifies how the volume was defined in the Third Interval ( $T/2$  beyond weld bevel, nozzle and vessel sides). Figure 2 identifies how the volume was defined for the nozzles listed in RI-21, Rev. 0 ( $1/2$  inch beyond the weld toe of the blend-radius on the vessel side,  $1/2$  inch beyond the bevel on the nozzle side). Figure 3 identifies how the examination volume was defined for all the nozzles examined in the Fourth Interval ( $1/2$  inch beyond weld bevel, both sides) after clarification per Interpretation XI-1-10-40. The reduction of the vessel side exam volume from  $1/2$  inch beyond the weld toe of the blend-radius on the vessel side (Revision 0, Figure 2) to  $1/2$  inch from the weld bevel (Revision 1, Figure 3) attributed to an 18 to 22 percent loss in total reported coverage on the applicable welds previously stated in RI-21, Revision 0. The methodology used for determining and crediting the examination coverages was not changed between the two versions of the Relief Request.

- c. The differences between the Third and Fourth Interval coverages are due to the change in the way CNS defined the examination volume in the Third Interval (Figure 1) compared to the Fourth Interval (Figure 3). Figure 1 shows the Third Interval examination volume vs. Figure 3 that shows the Fourth Interval examination volume associated with the reactor feedwater nozzles, top head spray nozzle, CRD return nozzle, and several recirculation inlet nozzles. The top head vent nozzle is a slightly different configuration that resulted in a slight increase of coverage from the Third to Fourth Interval (i.e., 58.6% to 59.09%).
- d. The first sentence in Note 1 was a "copy and paste" error carried over from the RHR-CA-2A note section and therefore is not applicable to NVE-BD-N7. The achieved examination coverage for this weld in the Third Interval was 58.6% in RE18 (1998).

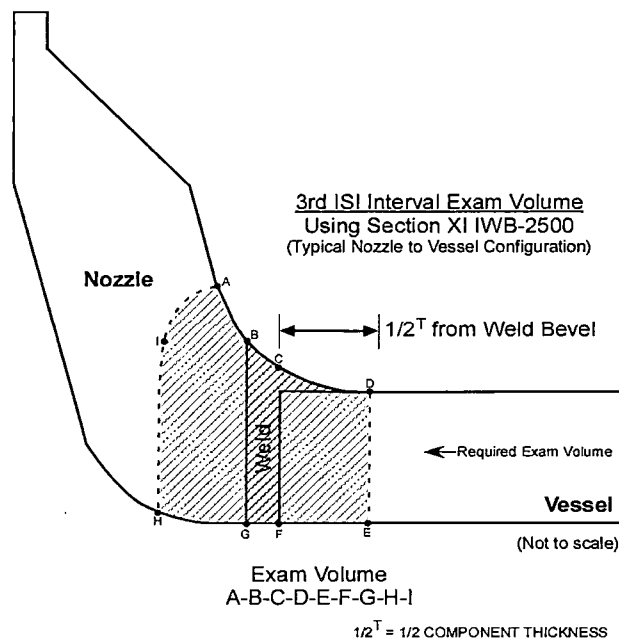
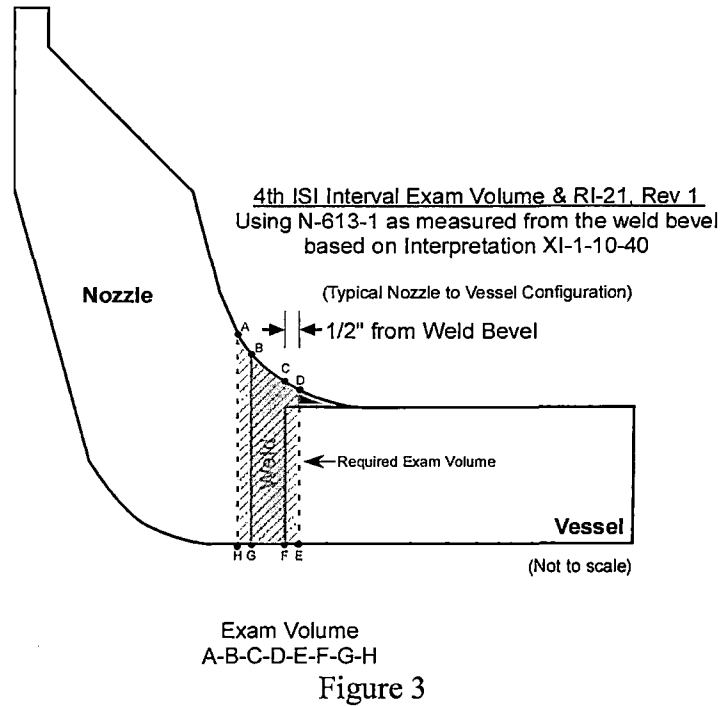
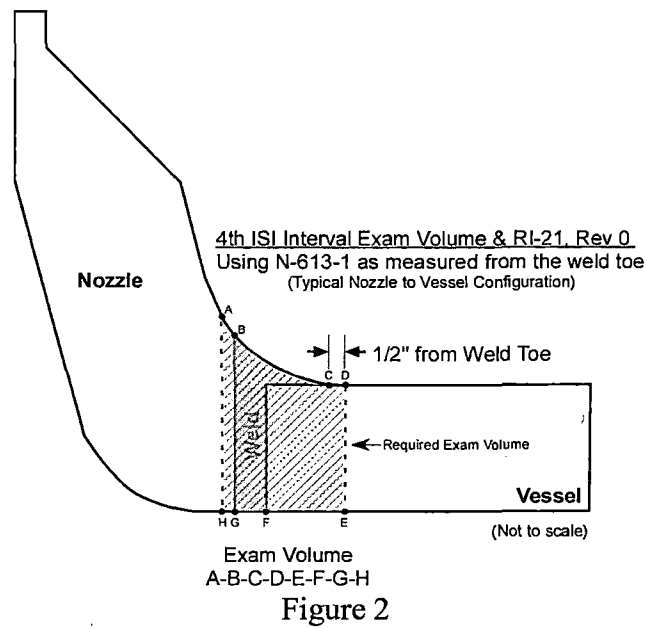


Figure 1



RAI-5

*For several of the Class 1 RPV and Class 2 Residual Heat Removal heat exchanger items addressed in RI-21, Rev. 1, the licensee reported that fourth ISI interval examination coverages had decreased from those reported for the third ISI interval because the third ISI interval exam coverages did not properly account for certain scanning obstructions, access restrictions, or other issues, which resulted in excessive amounts of coverage credited during the third interval.*

- a. Please identify whether the CNS ISI procedures specifically provide for accurate accounting of scanning obstructions, access restrictions, or other design/configurational issues that would result in limited exam coverages.*
- b. For cases where plant design and/or configurational issues preclude achieving the full-scope exam coverage, please identify whether the CNS ISI procedures specifically ensure that examination coverage is accurately determined and credited, based on the documented scan limitations and qualified UT techniques, including applicable Performance Demonstration Initiative requirements of the ASME Code, Section XI, Appendix VIII, as conditioned by 10 CFR 50.55a.*

NPPD Response:

- a. Since the Third Interval, CNS has updated and/or created additional administrative procedure guidance to address limited coverage examinations. The CNS administrative procedures for the ISI and Non-Destructive Examination (NDE) Programs were updated to include the additional guidance for documentation of limited coverage examinations. In addition, the field NDE implementation procedures also include guidance to properly document the limitations in coverage.
- b. CNS has procedures, as stated above, as well as checklists in place to ensure examination coverage is accurately determined and credited based on the documented scan limitations and qualified UT techniques, including the applicable Performance Demonstration Initiative requirements of the ASME Code, Section XI, Appendix VIII, as conditioned by 10 CFR 50.55a. The CNS procedures require limited coverage examinations that do not achieve 100% coverage to contain coverage plots that contain both the cause and percent of reduced coverage documented and that results are compared against previous data to ensure differences in coverage are addressed in the final examination report.