

## NRR-DMPSPeM Resource

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**From:** Wengert, Thomas  
**Sent:** Tuesday, February 06, 2018 12:04 PM  
**To:** Shaw, Jim D.  
**Cc:** Van Der Kamp, David W.; Pascarelli, Robert  
**Subject:** Cooper Nuclear Station - Final RAI RE: Relief Requests RR-02 and RR-03 (EPIDs L-2017-LRR-065 and -066)  
**Attachments:** Cooper RR5-02 and RR5-03 Final RAI.pdf

On January 22, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff sent Nebraska Public Power District (NPPD or licensee) the draft Request for Additional Information (RAI) identified below. This RAI relates to the licensee's request for relief from certain inservice inspection requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI at Cooper Nuclear Station (CNS), as described below

On January 29, 2018, the NRC staff and the licensee held a conference call to clarify the request. A publicly available version of this final RAI (attached with "Draft" removed and corrections to minor typographical errors) will be placed in the NRC's Agencywide Documents Access and Management System (ADAMS). Subsequently, the licensee agreed to respond to this request within 30 days of the date of this email (i.e., by March 8, 2018).

Note that the NRC staff is still reviewing Relief Requests RI-01, RI-02, and RI-03, which were also included in the August 17, 2017 letter. We will notify you at a later date if additional information is needed for those reviews.

Tom Wengert  
Project Manager – Cooper Nuclear Station  
NRR/DORL/LPL4  
(301) 415-4037

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**From:** Wengert, Thomas  
**Sent:** Monday, January 22, 2018 3:02 PM  
**To:** Shaw, Jim D.  
**Cc:** Van Der Kamp, David W. ; Pascarelli, Robert  
**Subject:** Cooper Nuclear Station - Draft RAI RE: Relief Requests RR-02 and RR-03 (EPIDs L-2017-LRR-065 and -066)

By letter dated August 17, 2017 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML17241A048), Nebraska Public Power District (the licensee) requested relief from certain inservice inspection requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI at Cooper Nuclear Station (CNS). The licensee submitted Relief Requests RR5-02 and RR5-03 for U.S. Nuclear Regulatory Commission (NRC) approval to use to implement repairs to certain degraded CNS piping using ASME Code Case N-513-4.

RR-02 applies to all ASME, Section XI, Class 2 and 3 piping components that meet certain operational and configuration limitations of the Code Case. RR-03 applies to all ASME, Section XI, Class 3 residual heat removal service water booster (RHRWB) system piping with a maximum operating pressure less than or equal to 490 pounds per square inch – gauge (psig) and a maximum operating temperature less than 200 degrees Fahrenheit (F).

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information, as described in the attached request for additional information (RAI), is required for the staff to complete its review of these

relief requests. This RAI is identified as draft at this time to confirm your understanding of the information that the NRC staff needs to complete the evaluations. If the request for information is understood, please respond to this request for additional information within 30 days of the date of this request. Please contact me if you would like to set up a conference call to clarify this request for information.

Note that the NRC staff is still reviewing Relief Requests RI-01, RI-02, and RI-03, which were also included in the August 17, 2017 letter. We will notify you later if additional information is needed for those reviews.

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

RELIEF REQUESTS RR5-02 AND RR5-03

APPLICATION OF ASME CODE CASE N-513-4

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

DOCKET NO. 50-298

By letter dated August 17, 2017 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML17241A048), Nebraska Public Power District (the licensee) requested relief from certain inservice inspection requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI at Cooper Nuclear Station (CNS). The licensee submitted Relief Requests RR5-02 and RR5-03 for U.S. Nuclear Regulatory Commission (NRC) approval to repair certain degraded CNS piping using ASME Code Case N-513-4. RR5-02 applies to all ASME, Section XI, Class 2 and 3 piping components that meet certain operational and configuration limitations of the Code Case. RR5-03 applies to all ASME, Section XI, Class 3 residual heat removal service water booster (RHRSWB) system piping with a maximum operating pressure less than or equal to 490 pounds per square inch – gauge (psig) and a maximum operating temperature less than 200 degrees Fahrenheit (F). To complete its review, the NRC staff requests the following additional information.

**RAIs for Relief Request RR5-02**

**RAI RR5-02-1**

Code Case N-513-4, Paragraph 5(a) requires, in part, that “A sample size of at least five of the most susceptible and accessible locations, or, if fewer than five, all susceptible and accessible locations shall be examined within 30 days of detecting the flaw...” Paragraph 5(b) requires that “...When a flaw is detected, an additional sample of the same size as defined in paragraph 5(a) shall be examined...”

On Page 61 of the attachment to the August 17, 2017 submittal, the licensee states the following, in part:

CNS will follow all requirements of Code Case N-513-4. With regard to augmented examination process as described in Section 5 of the Code Case, a sample size of at least five of the most susceptible and accessible locations shall be examined within 30 days of detecting the original flaw. The intent of this requirement is to identify the extent of condition that exists within similar system piping that could also be susceptible to similar flaws.

Specific to the CNS SW Class 3 piping, if a single flaw is identified within 30 days of scheduled volumetric examinations, CNS may take credit for any previous examination if performed prior to identification of the flaw, as a part of the same set of inspections. Credit will be taken for these examinations to

meet the requirements of Code Case N-513-4 paragraph 5(a), provided that the examination meets the inspection method requirements of the Code Case and was performed on SW Class 3 piping components, the inspected segments are of the same design and operation, and the inspected segments are considered to be of the most susceptible and accessible locations determined from the engineering evaluation. This is consistent with the augmented examination approach in [Generic Letter (GL)] 90-05 as well as previous NRC approved versions of N-513.

In the submittal the licensee appears to convey that if a single flaw is identified, the licensee will examine a fewer number of pipe locations than required by paragraphs 5(a) and 5(b) of Code Case N-513-4, because the licensee proposes to take credit for examinations performed within 30 days prior to identification of the flaw. The NRC staff's understanding of paragraph 5(a) is that within 30 days *after* a flaw is identified, augmented examinations must be performed. The Code Case does not imply that credit may be taken for previously performed examinations. In addition, GL 90-05, does not imply that previously performed examinations may be credited toward augmented examinations performed after a flaw is identified.

- (a) Clarify whether the proposed use of Code Case N-513-4 will examine the same number of pipe locations as required by paragraph 5(a). If not, provide justification.
- (b) Clarify whether the above proposed use of Code Case N-513-4 will meet paragraph 5(b). If not, provide justification.

#### RAI RR5-02-2

On Page 61 of the attachment to the August 17, 2017 submittal, the licensee states the following, in part:

... NPPD will apply ASME Code Case N-513-4 in its entirety along with RG 1.147, Revision 17 (or later NRC defined revision as applicable) for evaluation of Class 2 and 3 piping flaws at CNS if Code repairs cannot reasonably be completed within the Technical Specifications required time limit...  
(underline added)

The NRC staff notes that Regulatory Guide (RG) 1.147, Revision 17 does not reference Code Case N-513-4. Code Case N-513-3 is listed in RG 1.147 with one condition. However, this condition has been addressed in Code Case N-513-4. Clarify if the intent of the statement above is that when Code Case N-513-4 is listed in a subsequent revision of RG 1.147, the licensee intends to utilize the Code Case in accordance with RG 1.147, including any conditions that may be placed on the Code Case by the NRC.

#### RAIs for Relief Request RR5-03

##### RAI RR5-03-1

In the "ASME Code Component(s) Affected" Section of the relief request on page 63 of the attachment to the August 17, 2017 submittal, the licensee discusses the RHR and RHRSWB systems. However, in other sections of the relief request, the licensee discusses only the RHRSWB piping. Confirm that the relief request covers only RHRSWB piping, not RHR piping.

RAI RR5-03-2

Provide the following:

- (a) All RHRSWB pipe outside diameters (or nominal pipe sizes) and schedules (i.e., wall thicknesses),
- (b) Specific maximum operating pressures in the various RHRSWB pipe segments with associated pipe outside diameters and thicknesses, and
- (c) RHRSWB piping isometric drawings showing the pipe support locations and piping routing.

RAI RR5-03-3

Code Case N-513-4, Paragraph 5(a) requires, in part, that “A sample size of at least five of the most susceptible and accessible locations, or, if fewer than five, all susceptible and accessible locations shall be examined within 30 days of detecting the flaw...” Paragraph 5(b) requires that “...When a flaw is detected, an additional sample of the same size as defined in [paragraph 5](a) shall be examined...”

On Page 67 of the attachment to the August 17, 2017 submittal, the licensee proposes the following two deviations from Code Case N-513-4:

**Deviation No. 1:** “...If a single flaw is identified during scheduled volumetric examinations, CNS may take credit for any previous examination if performed within 30 days prior to identification of the flaw, as a part of the same set of inspections. Credit will be taken for these examinations to meet the requirements of Code Case N-513-4 paragraph 5(a)...”.

This exception appears to convey that if a single flaw is identified, the licensee will examine a fewer number of pipe locations than required by paragraphs 5(a) and 5(b) of Code Case N-513-4, because the licensee proposes to take credit for examinations performed within 30 days prior to identification of the flaw.

- (a) Clarify whether the proposed deviation will require the licensee to examine the same number of pipe locations as required by paragraph 5(a). (i.e., if a flaw is detected, a sample size of at least five of the most susceptible and accessible locations, or, if fewer than five, all susceptible and accessible locations shall be examined within 30 days of detecting the flaw.) If not, provide justification.
- (b) Clarify whether the above proposed deviation will meet the requirement of paragraph 5(b). If not, provide justification.

**Deviation No. 2.** The licensee proposes to increase the number of augmented examinations from 5 to 10 pipe locations.

- (c) This is an enhancement and improvement to the sample size as specified in paragraph 5(a) of Code Case N-513-4, however, this may introduce unintended requirements. For example, if a flaw is detected, paragraph 5(b) requires the licensee to increase the number of additional samples of the same size, i.e., from a sample of 10 pipe locations

to 20 locations. Clarify if this is the intent of Deviation No. 2. If not, explain the intent of Deviation No. 2 with respect to the requirements of paragraphs 5(a) and 5(b).

RAI RR5-03-4

Page 67 of the attachment to the August 17, 2017 submittal states that, if the Code Case is applied to a leaking flaw in the RHRSWB system, for leakage greater than 5 gallons per minute (gpm), the leakage will be stopped by use of a mechanical clamping device.

- (a) A leak rate of 5 gpm is not insignificant because it may cause flooding in a room if the sump drainage system does not have adequate capacity to drain the fluid, may affect safety-related components, and may impact personnel safety. Discuss the actions that the licensee will take before the leakage reaches 5 gpm.
- (b) Provide the allowable leakage rate beyond which the relief request will no longer be valid.
- (c) Discuss the minimum leakage rate that would prevent the RHRSWB from performing its intended function, the flow rate in the RHRSWB pipe that is needed to satisfy its designed function, and the average normal flow rate in the RHRSWB piping.
- (d) Discuss how the leakage rate in the RHRSWB piping can be detected and how the operators in the control room are notified. Discuss the minimum leakage rate that can be detected.

RAI RR5-03-5

The "Duration of Proposed Alternative" Section of the relief request on Page 68 of the attachment to the August 17, 2017 submittal states, in part, that "A Section XI compliant repair/replacement will be completed prior to exceeding the next scheduled refueling outage or allowable flaw size, whichever comes first." The NRC staff notes that Table 4, "Allowable Axial and Circumferential Flaw Size Comparison," in Enclosure 2, Attachment 3 of the submittal provides allowable flaw sizes. However, it appears that the allowable flaw size calculations are generic and not specific to CNS.

- (a) Provide the plant-specific allowable flaw sizes and associated calculations for the RHRSWB piping.
- (b) Discuss why the allowable leakage rate is not identified as a criterion to determine repair/replacement in the above statement as a condition on the use of the relief request.