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NLS2015133
December 21, 2015

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 for Fifth Ten-Year Inservice Inspection Interval, RI5-02
Cooper Nuclear Station, Docket No. 50-298, DPR-46

References:
1. Email from Thomas Wengert, Nuclear Regulatory Commission, to Jim Shaw, Nebraska Public Power District, dated November 19, 2015, "Cooper - 10CFR 50.55a Request for Fifth Ten-Year Inservice Inspection Interval, RI5-02 (CAC No. MF6336)"

2. Letter from Oscar A. Limpias, Nebraska Public Power District, to the U.S. Nuclear Regulatory Commission, dated June 9, 2015, "10 CFR 50.55a Requests for Fifth Ten-Year Inservice Inspection Interval" (ML15167A066)

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 "10 CFR 50.55a Requests for Fifth Ten-Year Inservice Inspection Interval" (Reference 2).

The response to the specific RAI question is 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,

Oscar A. Limpias
Vice President - Nuclear
and Chief Nuclear Officer

A047
NRR

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/dv

Attachment: Response to Nuclear Regulatory Commission Request for Additional Information for 10 CFR 50.55a Request for Fifth Ten-Year Inservice Inspection Interval, RI5-02

cc: Regional Administrator w/ attachment
USNRC - Region IV

Cooper Project Manager w/ attachment
USNRC - NRR Project Directorate IV-1

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 10 CFR 50.55a Request for Fifth Ten-Year Inservice Inspection Interval, RI5-02

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

The Nuclear Regulatory Commission (NRC) request for additional information (RAI) regarding the 10 CFR 50.55a Request for Fifth Ten-Year Inservice Inspection Interval is shown in italics. The Nebraska Public Power District (NPPD) response to the request is shown in normal font.

RAI

November 9, 2015 E-mail

In an e-mail dated September 16, 2015 (ADAMS Accession No. ML15259A579), the staff requested the following request for additional information (RAI) concerning the subject relief request submitted on June 9, 2015 (ADAMS Accession No. ML15167A066). RAI-1 and RAI-2 are not included.

RAI-3: Confirm whether a plant-specific leakage assessment was performed, as required by BWRVIP-18, BWRVIP-41, and BWRVIP-76 for the internals at CNS [Cooper Nuclear Station] *that accounts for the leakage from all internals that impact the ability to cool the core and maintain peak clad temperature (PCT) within allowed limits during postulated loss of coolant accidents. Provide a summary of all internal components included in the leakage assessment along with a summary of the following for each component:*

(a) the number and length of all cracks detected in past examinations for the component
(b) the number and length of all cracks evaluated in the leakage assessment
(c) the calculated leak rate from each crack evaluated in the leakage assessment

Confirm whether a plant-specific integrated leakage assessment (if any) associated with the aforementioned RVI components was performed at CNS.

In a letter dated October 21, 2015 (ADAMS Accession No. ML15301A249), the licensee sent a response to this RAI. The staff noted that the licensee did not provide information related to the following issue:

"Confirm whether a plant-specific leakage assessment was performed, as required by BWRVIP-18, BWRVIP-41, and BWRVIP-76 for the internals at CNS that accounts for the leakage from all internals that impact the ability to cool the core and maintain peak clad temperature (PCT) within allowed limits during postulated loss of coolant accidents."

The NRC staff requests the licensee to provide this information.

November 19, 2015 E-mail

On November 9, 2015, the U.S. Nuclear Regulatory Commission (NRC) staff sent Nebraska Public Power District (the licensee) the draft request for additional information (RAI), provided below. This RAI is related to the Cooper Nuclear Station (CNS) relief request concerning the fifth Ten-Year Inservice Inspection Interval, RI5-02.

A clarification conference call was conducted on November 10, 2015, between the NRC staff and CNS representatives. The topic for discussion during this call is related to RAI-3, which was initially sent to the licensee in an e-mail dated September 16, 2015 (ADAMS Accession No. ML15259A579).

During the call, the licensee agreed to provide the following additional information related to RAI-3:

The staff requested that the licensee provide a brief summary of the plant-specific integrated leakage assessment considering the flaws in the core spray piping, jet pumps, and core shroud (assuming through wall cracking). The licensee agreed to provide the requested information within 45 days of the date of the conference call.

NPPD Response

In the context of the integrated leakage assessment over one 24-month cycle, the leakage through core spray is conservatively calculated to be 104.2 gallons per minute (gpm) with an allowable limit of 117.5 gpm. For the jet pump DF-1 flaw, the leakage was calculated to be 4.8 gpm with an allowable limit of 25 gpm. The CNS SAFER/GESTR-LOCA analysis assumed 100 gpm leakage in core spray, so adding the leakage of the jet pump diffuser of 25 gpm along with the postulated flaws in the core shroud of 1,250 gpm, the combined leakage would increase the peak cladding temperature approximately 10 degrees Fahrenheit (°F).

The plant-specific integrated leakage assessment concluded that postulated leakage through the shroud at all eight horizontal welds and twenty-three vertical welds combined with leakage in the jet pump diffuser weld and core spray piping could increase the PCT analyzed in the CNS SAFER/GESTR-LOCA analysis by approximately 10°F, or from 2140°F to 2150°F but still below the 10 CFR 50.46(b) regulatory limit of 2200°F. The assessment, using conservative assumptions and BWRVIP methodology, demonstrated that leakage from these reactor pressure vessel internals over a 24-month cycle results in less than a 1% increase in PCT.