



Nebraska Public Power District

COOPER NUCLEAR STATION
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NLS960040
March 29, 1996

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

Subject: Response to Request for Additional Information;
Feedwater Nozzle Examination Results and Relief Request
Cooper Nuclear Station, NRC Docket No. 50-298, License No. DPR-46

- References:
1. Letter (No. NLS950240) to USNRC Document Control Desk from J. H. Mueller (NPPD), dated December 16, 1995, "Report of Feedwater Nozzle Examination Results and Relief Request"
 2. Letter to G. R. Horn (NPPD) from J. R. Hall (US NRC), dated February 1, 1996, "Cooper Nuclear Station - Request for Additional Information Regarding Feedwater Nozzle Examination Results and Relief Request (TAC No. M94260)"
 3. Letter (No. NLS9100849) to USNRC Document Control Desk from G. R. Horn (NPPD), dated December 20, 1991, "Indications in Feedwater Nozzle to Vessel Welds N4A, N4C, and N4D"
 4. Letter to G. R. Horn (NPPD) from R. B. Bevan (USNRC), dated February 13, 1992, "Cooper Nuclear Station - Staff Acceptance of Fracture Mechanics Evaluation of Flaw Indications (TAC No. M82258)"

Gentlemen:

In Reference 1, the Nebraska Public Power District (District) submitted to the Nuclear Regulatory Commission (NRC) the results of feedwater nozzle reexaminations conducted during the recently completed refueling outage at Cooper Nuclear Station (CNS). Included with Reference 1 was a request for relief, from the requirements of Paragraph IWB-2420(b) of the ASME Code, to allow CNS to return to the normal Code inspection frequency for the feedwater nozzles. In Reference 2, the NRC requested that the District provide additional information concerning the feedwater examination results and relief request. In response to Reference 2, the District is providing in the attachment to this letter a summary of the analysis used to support the District's conclusion that the hydrotest was assumed to be the most limiting condition.

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The District would also like to inform you that following startup from the 1995 refueling outage, the thermal sleeve bypass leakage monitoring points for feedwater nozzle N4C were found not to be functioning correctly. The following information provides a brief summary of the background on this system, the conclusion that it is unlikely that the N4C thermal sleeve bypass leakage will exceed the reporting limits established in Reference 4 and that the fracture mechanics evaluation submitted in Reference 1 remains valid.

In Reference 3, the District informed the NRC that an on-line monitoring system for the feedwater nozzles had been installed during the 1991 refueling outage to monitor and calculate thermal sleeve bypass leakage. In Reference 4, the NRC based its approval of the fracture mechanics evaluation of flaw indications found during the 1991 outage, in part, on the presence of this on-line leakage monitoring system. The Safety Evaluation associated with Reference 4 also requested that the District report to the staff any nozzle leakage exceeding 0.3 gpm during operation. The following points provide the District's basis for concluding that it is unlikely that the N4C thermal sleeve bypass leakage will exceed the 0.3 gpm reporting threshold during the current operating cycle, and that the fracture mechanics evaluation submitted in Reference 1 remains valid:

- o Historical leakage rates for the N4C thermal sleeve seal have been low (less than 0.02 gpm), and there was no adverse trend for this leakage prior to shutdown for the 1995 outage.
- o Historical and current leakage data for the N4A, N4B, and N4D thermal sleeve seals also indicate no significant leakage and no adverse trends.
- o No indications in the feedwater nozzle inner radii have been found in successive NUREG 0619 UT examinations in 1991 and 1995.

Although leakage through the N4C thermal sleeve seal is not anticipated to exceed 0.3 gpm, if leakage in excess of this threshold is identified following startup from the 1997 refueling outage, the District will perform an updated fracture mechanics analysis for the N4C nozzle to RPV shell weld to account for the effects of this leakage.

If you have any questions or require any additional information, please contact me.

Sincerely,



John H. Mueller
Site Manager

/dnm
Attachments

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cc: Senior Project Manager w/attachment
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/attachment
USNRC - Cooper Nuclear Station

Regional Administrator w/attachment
USNRC - Region IV

NPG Distribution w/o attachment