

# PRIORITY 1

ACCELERATED RIDS PROCESSING

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SUBJECT: Forwards Rev 9 to Procedure QCI 6-4, "Ultrasonic Exam  
 Feedwater nozzle Inner Radii," per NUREG-0619.

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December 8, 1995  
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Docket No. 50-397

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
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Gentlemen:

Subject        **WNP-2, OPERATING LICENSE NPF-21**  
                 **WNP-2 FEEDWATER NOZZLE INSPECTION REPORT**

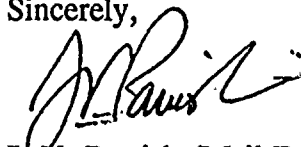
In the response to NUREG-0619, the Supply System committed to perform certain ultrasonic examinations of the six feedwater nozzles as part of the WNP-2 Augmented Inservice Inspection Program.

The Supply System also committed to report the results of those examinations in accordance with the guidance stated in NUREG-0619.

Attached is the Supply Systems's report on the feedwater nozzle examinations performed during the Spring, 1995 refueling outage. This report is being submitted to comply with the reporting recommendations of NUREG-0619, Section 4.4.3.1(2).

Should you have any questions or desire additional information regarding this matter, please contact me or D.A. Swank at (509) 377-4563.

Sincerely,



J.V. Parrish (Mail Drop 1023)  
Vice President, Nuclear Operations

DPR/lm  
Attachment

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10/17/95



This report addresses reactor vessel feedwater nozzle inspections for WNP-2 performed during the tenth refueling outage (R10, Spring 1995). This report is requested in NUREG-0619, Section 4.4.3.1(2). This report covers the period from September 30, 1991 to June 9, 1995.

In response to NUREG-0619, the Supply System WNP-2 Inservice Inspection Program Plan committed to ultrasonically (UT) examine at least one feedwater nozzle inner radius, bore and safe-end from the reactor outside diameter (OD) for six successive refueling outages. If no service-induced indications were found during this time period, subsequent inservice examinations of feedwater nozzles were to be performed in accordance with normal ASME Section XI requirements.

The following information is presented in the same sequence as requested in NUREG-0619, Section 4.4.3.1(2).

- (a) Number of startup/shutdown cycles since the previous inspection, and total number of cycles.

The plant has experienced 31 startup/shutdown cycles from the last feedwater nozzle inner radius examination report<sup>1</sup> (Spring, 1991) to shutdown in April 1995 for the R10 outage. This brings the total reactor feedwater thermal cycles experienced due to startup and shutdowns since initial heatup in April 1984 until shutdown April 22, 1995 to 119.

- (b) Summary of methods used and results of previous inspections.

The Supply System has developed an angle beam shear wave technique that is unique to the WNP-2 feedwater nozzle design. The procedure was qualified on the WNP-2 feedwater mock-up, which is a feedwater nozzle from the scrapped Douglas Point Unit 1 reactor vessel. The inner radius, zone 1, of the nozzle is scanned using a 72 degree angle transducer. The inner radius, zone 2, and bore region, zone 3, are scanned using a 25 degree angle transducer. The UT procedure used for the examinations is Supply System NDE&I Instructions QCI 6-4 "Ultrasonic Examination of Feedwater Nozzle Inner Radii." (Appendix). Any changes to this procedure that affect UT scanning techniques are verified on the feedwater nozzle mock-up.

Calibration data for reactor feedwater nozzle inner radius examinations have been predetermined using the WNP-2 feedwater nozzle mock-up. This allows the examiner to use the reactor vessel calibration block representing the shell course containing the feedwater nozzle for calibration. The transfer data is contained in Table I of procedure QCI 6-4.

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<sup>1</sup> Letter, GO2-92-008, G.C. Sorensen (SS) to J. B. Martin (NRC), "Nuclear Plant No. 2, Operating License NPF-21, WNP-2 Feedwater Nozzle Inspection Report", dated January 14, 1992



Indications that exceed 25% full screen height (FSH) are recorded and indications that exceed 50% FSH are evaluated.

All previous feedwater nozzle inner radius examinations detected no unacceptable indications.

- (c) **Changes in feedwater system or operating procedures that will affect feedwater flow or temperature.**

There have been no changes to the system or the way it is operated since the last report<sup>2</sup> that will increase future tendencies for nozzle cracking.

- (d) **Inspection results.**

During WNP-2 refueling outage ten (R10), the Supply System performed ultrasonic examination of one reactor feedwater nozzle inner radius, bore and nozzle-to-safe-end weld at azimuth 150 from the vessel outside diameter (OD).

The examinations were performed by Supply System and General Electric examiners certified to either Level II or Level III UT.

As with all previous feedwater nozzle inner radius examinations, no unacceptable indications were found.

- (e) **Leakage monitoring.**

WNP-2 does not have on-line leakage monitoring for the RFW sparger<sup>3</sup>.

- (f) **Information regarding all UT crack-like indications and any subsequent PT information.**

No crack-like indications have been observed.

**Next scheduled examination.**

The next examination is scheduled for refueling outage 11 in the Spring, 1996.

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<sup>2</sup> **ibid.**

<sup>3</sup> **WNP-2 FSAR Section 5.2.4.10**

APPENDIX

Procedure QCI 6-4, Rev. 9, "Ultrasonic Examination of Feedwater Nozzle Inner Radii."

