

CATEGORY 1

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SUBJECT: Forwards results of exam & evaluation of flaw in
 recirculation piping weld 20RRC(6)-8 in ltrs dtd 950526 &
 15. Procedure encl.

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May 14, 1996
GO2-96-102

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
REPORT ON FLAW IN REACTOR RECIRCULATION PIPING**

- References:
- 1) Letter GI2-95-133, dated May 26, 1995, JW Clifford (NRC) to JV Parrish (SS), "Reactor Recirculation Piping Weld Flaw Reinspection Results Review at Washington Public Power Supply System Nuclear Project No. 2 (TAC NO. M92351)"
 - 2) Letter GO2-95-097, dated May 15, 1995, JV Parrish (SS) to NRC, "Report on Flaw in Reactor Recirculation Piping"
 - 3) Letter GO2-91-096, dated May 10, 1991, GC Sorensen (SS) to USNRC, "Report on Flaw in Reactor Recirculation Piping, (TAC No. 80358)"
 - 4) Letter G02-91-098, dated May 15, 1991, GC Sorensen (SS) to USNRC, "Report on Flaw in Reactor Recirculation Piping, Additional Information (TAC No. 80358)"
 - 5) Letter G02-92-123, dated May 14, 1992, GC Sorensen (SS) to USNRC, "Report on Flaw in Reactor Recirculation Piping (TAC 80358)"
 - 6) Letter G02-93-119, dated May 21, 1993, JV Parrish (SS) to USNRC, "Report on Flaw in Reactor Recirculation Piping (TAC 80358)"
 - 7) Letter G02-94-135, dated June 9, 1994, JV Parrish (SS) to USNRC, "Report on Flaw in Reactor Recirculation Piping (TAC 80358)"
 - 8) Letter dated January 25, 1988, USNRC to All Licensees, "NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping (Generic Letter 88-01)"
 - 9) Letter GI2-93-025, dated January 19, 1993, JW Clifford (NRC) to GC Sorensen (SS), "Alternate Schedule for IGSCC Inspection (TAC M84714)"

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REPORT ON FLAW IN REACTOR RECIRCULATION PIPING

The Supply System herein transmits the results of the examination and evaluation of the flaw in recirculation piping weld 20RRC(6)-8 as discussed in References 1 and 2. Attachments 1 and 2 provide the evaluation and examination results, respectively.

The Supply System has examined this weld indication during each refueling outage since it was first identified in 1991, and has not detected any adverse change in the indication. Since the weld was subjected to induction heating stress improvement in 1983, this weld will be placed in Generic Letter 88-01 category "E" consistent with guidance in Reference 8. The next scheduled examination of this weld will be during the Spring, 1999 refueling outage, consistent with guidance in Reference 9.

Based on the examination results of the past five refueling outages and the evaluations submitted by References 2 through 7, the Supply System has verified that the structural integrity of weld 20RRC(6)-8 will be maintained during the next three (3) operating cycles.

Should you have any questions or desire additional information regarding this matter, please call me or Ms. Lourdes Fernandez at (509)-377-4147

Respectfully,



J. V. Parrish
Chief Executive Officer
(Mail Drop 1023)

Attachments: (1) Results and Evaluation
(2) Examination Data Report

cc: LJ Callan - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Sr. Resident Inspector - 927N

ATTACHMENT 1
REPORT ON FLAW IN REACTOR RECIRCULATION PIPING

The indication in ISI weld number 20RRC(6)-8 was reexamined April 23, 1996, during refueling outage R11, for the fifth consecutive refueling outage, to determine any size change. No adverse changes in the flaw depth nor ultrasonic (UT) signal characteristics were noted. The flaw depth was found to be 0.187 inches or 18.7% of wall thickness (0.187 inches at R10). The signal characteristics are not typical of intergranular stress corrosion cracking (IGSCC). These examination results verify that the indication remains bounded by the initial evaluation documented in References 3 and 4.

Summary of Weld 20RRC(6)-8 Examination Results

Outage	Depth(inch)	Length(inch)	Examination Method
R6	0.15	4.5 (CE-2 method ¹)	manual
R7	0.17	3.6 (Reference gain method)	manual
R7	0.15	3.6 (Reference gain method ²)	mechanized
R8	0.175	3.6 (Reference gain method)	mechanized
R9	0.184	3.6 (Reference gain method)	mechanized
R10	0.187	3.6 (Reference gain method)	mechanized
R11	0.187	3.6 (Reference gain method)	mechanized

The results from R11 are still bounded within the analysis that was performed at R6. The potential crack growth rates are also bounded by the crack growth calculation. The final crack depth and length at the end of the next three (3) years will not exceed the maximum allowable crack depth or length even if the IGSCC mechanism were active.

Based on the examination results of this outage, the past four refueling outages and the bounding calculation analysis, the Supply System concludes that the structural integrity of ISI weld number 20RRC(6)-8 will be maintained during the next three (3) operating cycles of WNP-2.

Generic Letter 88-01, page 5 provides guidance for upgrading of category "F" welds if they have been subject to a stress improvement and there has not been any significant change (as defined on page 5, Attachment A of the Generic Letter) in the indication in the past 4 successive examinations. Using this guidance, the weld is being reclassified from a Generic Letter 88-01 category "F" weld to a category "E" weld. This weld received stress improvement in 1983, prior to operation, and the indication has not shown any adverse change in the last five (5) successive examinations. The indication also does not have UT signals indicative of IGSCC.

¹ Length based on CE-2 signal disappearing into the baseline.

² Length based on reference gain

ATTACHMENT 2

EXAMINATION DATA REPORT