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Nuclear Power Plant
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New York Power Authority

August 24, 1983
JAFP 83-0880

United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Dr. Thomas E. Murley
Regional Administrator

Gentlemen:

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT
DOCKET NO. 50-333
RECIRCULATION PIPING FLAW INDICATION

The ultrasonic inspections for Intergranular Stress Corrosion Cracking (IGSCC) conducted by the Power Authority during the current refueling outage, revealed one indication not attributable to weld/joint geometry. The indication was approximately 1.9" in length circumferentially and 0.20" in depth. The ultrasonic test data and plots of this indication were submitted in letter JAFP-83-0769, from Corbin A. McNeill, Jr. to Dr. Thomas E. Murley of I&E Region 1, dated July 22, 1983 (copy attached).

The indication has been evaluated as intergranular stress corrosion cracking (IGSCC). The baseline radiographs show a slight change in density or an indication, in the same area as that discovered by UT. This appears to indicate a fabrication defect which may have acted as an initiation site for IGSCC. Both the original and repair construction radiographs were computer enhanced in an attempt to resolve the nature of this fabrication indication. The letter report describing the results of this enhancement is attached.

A conservative worst case flaw analysis has been performed on this indication to evaluate its impact on the structural margin of this piping. Also attached is the fracture mechanics analysis of this indication. This analysis shows that this indication does not reduce the original structural design margin for this piping and would not adversely affect the margin of safety over the next operating cycle. The evaluation also shows that based on the residual stress pattern of this diameter pipe and on crack growth data from both laboratory and field experience, it will

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not reach a critical crack size before the end of plant design life. Additionally, using a worst case assumption of a small diameter pipe residual stress pattern it would not reach a critical crack size before the end of the next operating cycle.

It should be noted also that this indication meets the acceptance standard for indications in austenitic stainless steel piping that was recently approved as paragraph IWB 3640 and Appendix X to the Winter 1983 Addenda of Section XI of the ASME Code.

Therefore, the original design margin and the correspondingly high level of safety will be maintained during this next operating cycle without a repair or replacement of this joint. This weld will be re-examined during the next refueling outage and the results, i.e., any change in indication length of depth, will be reported and re-evaluated in terms of impact on piping integrity.

Very truly yours,

CORBIN A. MCNEILL, JR.
RESIDENT MANAGER

CAM:DS:nan
Attachment

CC: Harry B. Kister
Chief RPSIC, DPRP
NRC, Region 1

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