

LICENSEE EVENT REPORT

Update Report

Previous Report Date 11-18-82

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(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During the months of October and November, with the unit in cold shut-
03 down for refueling, augmented Inservice Inspections (ISI) were performed
04 on selected welds. Rejectable linear indications were discovered on two
05 RHR welds (20 and 24 inch piping) and five recirculation welds (22 inch
06 piping). The health and safety of the public were not affected by this
07 non-repetitive event.

[illegible]

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The cause of this event has been determined to be Inter-Granular Stress

1 1 Corrosion Cracking (IGSCC). Six of the seven welds contained indications

1 2 that were above allowable limits for depth per ASME Code, and were re-

1 3 paired using the weld overlay method. The seventh weld was not repaired

1 4 but will be monitored by a local leak detection system.

[illegible]

NAME OF PREPARER H. L. Sumner - Supt. Plt. Eng. Serv.

PHONE: 912-367-7851

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LER #: 50-321/1982-089, Rev. 2
LICENSEE: Georgia Power Company
FACILITY: Edwin I. Hatch
DOCKET #: 50-321

Narrative Report
for LER 50-321/1982-089, Rev. 2

During the months of October and November, with the unit in cold shutdown for refueling, augmented Inservice Inspections (ISI) were performed on selected welds. Rejectable indications were discovered on two RHR welds and five recirculation welds.

The recirculation welds were four end cap-to-manifold welds and one manifold-to-sweepolet weld. The 4 end cap-to-manifold welds had axial linear indications that ranged from 31 to 5 indications per end cap. The approximate maximum crack depth for indications ranged from 72% to 63% through wall. All four end caps were overlayed with 308L weld material. During the overlay process on one of the end cap-to-manifold welds, leakage was observed. The piping had a previously undetected axial crack approximately 3/8 inches in length. This is a through wall crack violating Tech. Specs. requirement of section 3.6.K. The manifold was drained and repaired and overlay was continued. The manifold to sweepolet weld had seven small ultrasonic indications transverse to the weld. The largest indication was approximately 12% through wall. This weld was not repaired due to an evaluation that showed the safety factor for these indications is well in excess of the safety factor inherent in the ASME code. The site, however, has installed a local leak detection system to monitor this weld during the next fuel cycle.

The two RHR welds consisted of a 20 inch pipe-to-elbow weld and a 24 inch pipe-to-pipe weld. The pipe-to-elbow weld had one linear axial indication 3/8 of an inch long with an estimated depth of 94% through wall and a linear circumferential indication 1 1/2 inches in length with an estimated depth of 33% through wall. This weld was overlayed with 308L weld material. The pipe-to-pipe weld had 6 axial linear indications 1/4 to 3/8 inches in length with a maximum estimated depth of 47% through wall. This weld was overlayed with 308L weld material. After the pipe weld was completed indications were observed on the O.D. of the adjacent pipe during liquid penetrant testing (P/T). These indications were ground out and the overlay was extended to centerline of the adjacent pipe to valve weld. Again indications were seen during P/T of the extended portion of the weld overlay material. After investigation it was discovered that the cause of these indications in the overlay material was the result of incompatible weld materials (308L to inconel). The pipe-to-valve weld was made with inconel and had a cap layer of 309 stainless steel. The extended portion of the pipe-to-pipe 308L weld material was ground off and re-welded using inconel filler material. This weld was P/T'd and showed no indications.

The repairs were done using the weld overlay method. This method establishes additional "cast-in-place" pipe wall thickness from weld metal deposited 360 degrees around and to either side of the existing weld. The weld deposited band over the cracks will provide wall thickness equal to that required to provide the original design safety margins. In addition, the weld metal deposition will produce a favorable compressive residual stress pattern that is beneficial in retardation of Intergranular Stress Corrosion Cracking (IGSCC). The deposited weld metal, 308L or inconel, is resistant to propagation of IGSCC cracks.

All repairs were conducted in accordance with ASME Code, Section XI 1974 Edition, with Addenda through and including Summer 1975. After completion of repairs, the weld overlay and the base metal within one inch on both ends of each overlay were examined by the liquid penetrant method. In addition, an ultrasonic examination established the soundness of the weld overlay and was used to create a new baseline for Inservice Inspection. A hydrostatic test will be conducted prior to startup.

Ultrasonic and P/T examinations were in accordance with Section XI 1977 Edition, with Addenda through and including Summer 1978. The hydrostatic test will be in accordance with Section XI IWA-5000 1974 Edition, with Addenda through and including Summer of 1975.