

LICENSEE EVENT REPORT (LER)

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|---|--------|-----------|--|-------------------|-----------------|-------|------------------|-----------|----------------|---|----------------------|----------------------------------|---|------------------|--|------|---|---|---|----------------------|-------------|--|--|--|--|
| FACILITY NAME (1) Browns Ferry - Unit 3 | | | | | | | | | | DOCKET NUMBER (2) 0 5 0 0 0 2 9 6 1 OF 0 2 | | | | | | | | | | PAGE (3) 1 OF 0 2 | | | | | |
| TITLE (4) Jet Pump Instrument Nozzle Cracking | | | | | | | | | | | | | | | | | | | | | | | | | |
| EVENT DATE (5) | | | LER NUMBER (6) | | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | | | | |
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | | | | | DOCKET NUMBER(S) | | | | | | | | | | | |
| 0 | 5 | 1 | 7 | 8 | 4 | 8 | 4 | — | 0 | 0 | 6 | — | 0 | 0 | 0 | 6 | 0 | 8 | 8 | 4 | 0 5 0 0 0 0 | | | | |
| OPERATING MODE (9) N | | | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | | | |
| POWER LEVEL (10) 0 0 0 | | | 20.402(b) | | | | 20.406(c) | | | | 50.73(a)(2)(iv) | | | | 73.71(b) | | | | | | | | | | |
| | | | 20.406(a)(1)(i) | | | | 50.36(e)(1) | | | | 50.73(a)(2)(v) | | | | 73.71(c) | | | | | | | | | | |
| | | | 20.406(a)(1)(ii) | | | | 50.36(e)(2) | | | | 50.73(a)(2)(vii) | | | | OTHER (Specify in Abstract below and in Text, NRC Form 386A) | | | | | | | | | | |
| | | | 20.406(a)(1)(iii) | | | | 50.73(a)(2)(i) | | | | 50.73(a)(2)(viii)(A) | | | | | | | | | | | | | | |
| | | | 20.406(a)(1)(iv) | | | | 50.73(a)(2)(ii) | | | | 50.73(a)(2)(viii)(B) | | | | | | | | | | | | | | |
| | | | 20.406(a)(1)(v) | | | | 50.73(a)(2)(iii) | | | | 50.73(a)(2)(x) | | | | | | | | | | | | | | |
| LICENSEE CONTACT FOR THIS LER (12) | | | | | | | | | | | | | | | | | | | | | | | | | |
| NAME David L. Smith | | | | | | | | | | | | TELEPHONE NUMBER | | | | | | | | | | | | | |
| | | | | | | | | | | | | AREA CODE 2 0 5 7 2 9 0 8 6 5 | | | | | | | | | | | | | |
| COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13) | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPD | | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPD | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPPLEMENTAL REPORT EXPECTED (14) | | | | | | | | | | | | EXPECTED SUBMISSION DATE (15) | | MONTH | DAY | YEAR | | | | | | | | | |
| <input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE:) | | | | | | | | | | | | NO | | 0 | 8 | 1 | 5 | 8 | 4 | | | | | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Based on information received from a Nuclear Regulatory Commission (NRC) publication "Inside NRC," the Tennessee Valley Authority (TVA) inspected 10 additional welds on the jet pump instrument nozzles. Of these, two welds were determined to need repair. These welds will be repaired by the weld overlay procedure to be completed prior to unit startup. TVA has an inspection plan which is carried out during refueling outages for identifying defective welds. These additional welds will be examined in upcoming units 1 and 2 refueling outages.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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|--|---|----------------|-------------------|-----------------|----------|--|
| FACILITY NAME (1) Browns Ferry - Unit 3 | DOCKET NUMBER (2) 0 5 0 0 0 2 9 6 8 4 - 0 0 6 - 0 0 0 2 OF 0 2 | LER NUMBER (8) | | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | |
| | | | | | | |

TEXT (If more space is required, use additional NRC Form 366A, 2) (17)

During normal operation Unit 1 was operating at 95 percent, Unit 2 at 59 percent, and Unit 3 was in a refueling outage. Only Unit 3 was affected by this event.

Additional welds were inspected on the jet pump instrument nozzles (NZL) based on information received via a Nuclear Regulatory Commission (NRC) publication "Inside NRC." Ten welds were examined and two were determined to need weld repair. "Weld overlay" repairs on both nozzles will be complete prior to returning the unit to operating status. These two 4-inch reducer "safe-end" welds had axial indications up to 82 percent through wall in the base metal. One of the "safe ends" has two indications visible from the outside. These two welds are suspected to be a product of intergranular stress corrosion cracking due to the "safe ends" being moderately sensitized.

TVA is presently in an inspection program to ultrasonically test all twelve recirculation reactor vessel (RPV) penetrations (PEN) for indications of intergranular stress corrosion cracking. Metallography (acid etching) will be done on two out the ten recirculation discharge reactor vessel penetrations and on both of the inlet penetrations. The jet pump instrument nozzle welds will be inspected during the upcoming units 1 and 2 refueling outages (Unit 2 refueling outage - August, 1984) and depending on the results of the unit 3 ultrasonic test inspection program a decision will be made on the extent of units 1 and 2 ultrasonic test inspections that will be needed. If an opportunity of a short outage presents itself prior to the next refueling outage, Unit-1 will be checked out at that time.

A contributing factor in this issue may be that Units 2 & 3 were procured from IHI, a Japanese vendor, while Unit 1 was bought from Coulter Steel & Forging Co. The certified material test reports from the Units 2 & 3 vessel penetrations show a higher carbon content than those of U-1. Thus, also pointing to more susceptibility for sensitization areas.

If the cracked welds had failed during normal operation, a minimum of reactor coolant would be lost because these welds were on a 4-inch reducer to the jet pump instrument nozzle "safe-end" and the penetration has twelve 1-inch instrument lines inside it. These instrument lines have .004 tolerance between themselves and the 4-inch penetration. Therefore, a minimum flow would have been released with the drywell sump pumps unidentified leakage alerting the licensed unit operator to the line break. Since the unit is analyzed for a loss of coolant accident for a 24-inch line, these two jet pump instrument nozzle breaks would be negligible.

Previous similar events

BFRO-50-259/83-23

BFRO-50-260/82-40

BFRO-50-296/79-19

Responsible Plant Section

N/A

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

Browns Ferry Nuclear Plant
P. O. Box 2000
Decatur, Alabama 35602

June 8, 1984

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

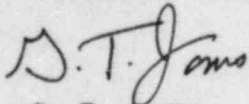
Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 3 - DOCKET
NO. 50-296 - FACILITY OPERATING LICENSE DPR-68 - REPORTABLE OCCURRENCE
REPORT BFRO-50-296/84006

The enclosed report provides details concerning jet pump instrument nozzle
cracking. This report is submitted in accordance with 10 CFR 50.73
(a)(2)(ii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY



G. T. Jones
Power Plant Superintendent
Browns Ferry Nuclear Plant

Enclosure

cc (Enclosure):
Regional Administrator
U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 2900
Atlanta, GA 30303

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

NRC Resident Inspector, BFN

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