F 05/05/78

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TN VALLEY AUTH

DOCDATE: 04/28/78
DATE RCVD: 05/02/78

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SUBJECT:
FORWARDING LICENSEE EVENT REPT (RO 50-296/78-008) ON 04/15/78 CONCERNING RELIEF VALVE 3-1-31 WHICH FAILED TO RESEAT UNTIL PRESSURE REACHED 280 PSIG DURING A REACTOR SCRAM... W/ATT.

PLANT NAME: BROWNS FERRY - UNIT 3

REVIEWER INITIAL: XJM
DISTRIBUTOR INITIAL: DL

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(DISTRIBUTION CODE A002)

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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US NRC
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RECEIVED DISTRIBUTION
SERVICES UNIT

Mr. James P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
230 Peachtree Street, NW., Suite 1217
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 3 - DOCKET NO. 50-296 - FACILITY OPERATING LICENSE DPR-68 - REPORTABLE OCCURRENCE REPORT BFRO-50-296/788

The enclosed report provides details concerning relief valve 3-1-31 which failed to reseat until reactor pressure reached 280 psig during a reactor scram. This report is submitted in accordance with Browns Ferry unit 3 Technical Specifications 6.7.2.a.(2) and 6.7.2.a.(9).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

H. S. Fox
Director of Power Production

Enclosure (3)
cc (Enclosure):
Director (3)
Office of Management Information and Program Control
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Director (40)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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U.S. NUCLEAR REGULATORY COMMISSION

# LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

| | |
|---|---|
| 0 1 Licensee Code (2) | A L B R F 3 |
| License Number (3) | 0 0 - 0 0 0 0 0 - 0 0 |
| License Type (4) | 4 1 1 1 1 |
| CAT (5) | |
| CON'T 0 1 Report Source (6) | L |
| Docket Number (7) | 0 5 0 0 0 2 9 6 |
| Event Date (8) | 0 4 1 5 7 8 |
| Report Date (9) | 0 4 2 8 7 8 |

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During a reactor scram, relief valve 3-1-31 failed to reseat until reactor
0 3 pressure reached 280 psig. The moderator cooldown rate exceeded the 100°F/
0 4 hr. rate allowed by Technical Specification 3.6.A.1. The torus reached a
0 5 maximum temperature of 118°F. Similar failures of valves to reseat have
0 6 previously been reported in BFAO-50-260/7349, BFAO-50-260/749, BFAO-50-260/
0 7 7429, BFAO-50-260/7430, and BFRO-50-260/783. There was no hazard to the
0 8 public health and safety. (See attached report.)

| 0 9 | System Code (11) | Cause Code (12) | Cause Subcode (13) | Component Code (14) | Comp. Subcode (15) | Valve Subcode (16) |
|---|---|---|---|---|---|---|
| | C C | E | B | V A L V E X | X | B |

| (17) LER/RO Report Number | Event Year | | Sequential Report No. | | Occurrence Code | Report Type | | Revision No. |
|---|---|---|---|---|---|---|---|---|
| | 7 8 | — | 0 0 8 | / | 0 1 | T | — | 0 |

| Action Taken (18) | Future Action (19) | Effect on Plant (20) | Shutdown Method (21) | Hours (22) | Attachment Submitted (23) | NPRD-4 Form Sub. (24) | Prime Comp. Supplier (25) | Component Manufacturer (26) |
|---|---|---|---|---|---|---|---|---|
| C | Z | A | B | 0 1 5 3 | N | N | N | T 0 2 0 |

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The valve which malfunctioned was a Target Rock, model 67F, serial No. 184.
1 1 It was replaced with serial No. 154. The cause of the malfunction is not
1 2 known at this time. Tests and inspections will be performed to determine
1 3 the cause, and results will be reported.
1 4

| 1 5 | Facility Status (28) | % Power (29) | Other Status (30) | Method of Discovery (31) | Discovery Description (32) |
|---|---|---|---|---|---|
| | E | 1 0 0 | NA | A | N/A |

| 1 6 | Activity Released (33) | Content of Release (34) | Amount of Activity (35) | Location of Release (36) |
|---|---|---|---|---|
| | Z | Z | NA | NA |

| 1 7 Personnel Exposures | Number (37) | Type (38) | Description (39) |
|---|---|---|---|
| | 0 0 0 | Z | NA |

| 1 8 Personnel Injuries | Number (40) | Description (41) |
|---|---|---|
| | 0 0 0 | NA |

| 1 9 Loss of or Damage to Facility (43) | Type (42) | Description |
|---|---|---|
| | L | NA |

| 2 0 Publicity | Issued (44) | Description (45) | NRC Use Only |
|---|---|---|---|
| | N | NA | |

NAME OF PREPARER ________________ PHONE: ________________

*Revision 9530

Other Events During the Occurrence

The supply line to the condensate ring header in the unit 3 torus room failed at a welded joint following the reactor scram. The ring header provides reactor quality water to the HPCI and RCIC. The weld failure occurred in the proximity of a junction of a 24-inch and a 20-inch pipe at elevation 552 above core spray pumps A and C and resulted in the loss of about 80,000 gallons of condensate. Water in the core spray pumps A and C room rose to approximately 12 inches and then overflowed the door base and into the torus floor area. Since the floor drain system is common to other corner rooms and the HPCI room, subsequent equalizing of the spilled condensate throughout the basement area resulted.

No apparent cause was evident. A similar event occurred on November 23, 1977. Preliminary evaluation concluded the most probable cause was weld fatigue caused by line movement during repetitive operations of the HPCI system. The corrective action being taken is to remove the junction and replace it with a straight pipe.

The failure of this pipe has been analyzed in a study conducted by TVA titled "Concluding Report on Effects of Postulated Pipe Failure Outside of Containment for Units 2 & 3 for the Browns Ferry Nuclear Plant - DED-TM-PF2" dated March 1, 1974.

The object of the studies performed was to show that the plant could be placed in and maintained in a cold shutdown condition following a postulated pipe failure in any of the high or low energy lines outside of containment. This evaluation included the failure of the condensate storage tank suction line to the HPCI and RCIC systems and showed that its failure would not prevent placing the plant in or maintaining it in a cold shutdown condition.

All equipment functioned as required or remained operable during and ensuing the scram. No personnel received any radiation or contamination exposure as a result of the failure.

HLA:SGS
4/28/78