A 04/06/78

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SUBJECT:
LICENSEE EVENT REPT (RO 50-296/78-004) ON 03/15/78 CONCERNING DURING QUALIFICATION TESTING OF BENDIX ELEC CONNECTORS IDENTICAL TO THOSE USED IN THE PRIMARY CONTAINMENT, THREE OF FIVE TEST SPECIMENS FAILED DURING SIMULATED LOCA CONDITIONS... W/ENCL.

PLANT NAME: BROWNS FERRY - UNIT 3

REVIEWER INITIAL: XJM
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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

MAR 28 1978

REGULATORY DOCKET FILE COPY

1978 APR 3 PM 5 26

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-50-296/784

The enclosed report provides details concerning three of five test specimens which failed during simulated LOCA conditions and during qualification testing of Bendix electrical connectors identical to those used in the primary containment. This report is submitted in accordance with Browns Ferry unit 3 Technical Specification 6.7.2.A.(9).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

H. S. Fox
Director of Power Production

Enclosure
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

A002 S 1/1

NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

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

01 | ALBFR3 (2) | 00-0000-00 (3) | 4 (4) | 6 (5)
7 8 9 LICENSEE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 57 CAT 58

REGULATORY DOCKET FILE COPY

CON'T
01 | REPORT SOURCE L (6) | 05000296 (7) | 031578 (8) | 032878 (9)
7 8 60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During qualification testing of Bendix electrical connectors
03 identical to those used in the primary containment, three of five
04 test specimens failed during simulated LOCA conditions. There
05 was no effect on the public health or safety since this was
06 a laboratory test.
07
08
7 8 9 80

09 | SYSTEM CODE XX (11) | CAUSE CODE E (12) | CAUSE SUBCODE A (13) | COMPONENT CODE PENETR (14) | COMP. SUBCODE D (15) | VALVE SUBCODE Z (16)
7 8 9 10 11 12 13 18 19 20

(17) LER/RO REPORT NUMBER: EVENT YEAR 78 (21 22) | — (23) | SEQUENTIAL REPORT NO. 004 (24 26) | / (27) | OCCURRENCE CODE 01 (28 29) | REPORT TYPE T (30) | — (31) | REVISION NO. 0 (32)

ACTION TAKEN F (18) (33) | FUTURE ACTION Z (19) (34) | EFFECT ON PLANT A (20) (35) | SHUTDOWN METHOD A (21) (36) | HOURS (22) 0146 (37 40) | ATTACHMENT SUBMITTED Y (23) (41) | NPRD-4 FORM SUB. N (24) (42) | PRIME COMP. SUPPLIER L (25) (43) | COMPONENT MANUFACTURER B200 (26) (44 47)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The cause was a design deficiency. Three Bendix connectors, P/N 10-214036-78p,
11 shorted between pins on the unpotted side. The short was caused by the entry of
12 moisture through the grommet on the rear of the connector. The connectors in the
13 primary containment, applicable to the safety systems required to be operational
14 during a LOCA, were potted with 3M Scotchcast. The potted connectors were qualified
7 8 9 80

15 | FACILITY STATUS Z (28) (9) | % POWER 095 (29) (10 12) | OTHER STATUS (30) N.A. (13 44) | METHOD OF DISCOVERY C (31) (45) | DISCOVERY DESCRIPTION (32) During special test (46 80)

16 | ACTIVITY RELEASED Z (33) (9) | CONTENT OF RELEASE Z (34) (10) | AMOUNT OF ACTIVITY (35) N.A. (11 44) | LOCATION OF RELEASE (36) N.A. (45 80)

PERSONNEL EXPOSURES
17 | NUMBER 000 (37) (9 11) | TYPE Z (38) (12) | DESCRIPTION (39) N.A. (13 80)

PERSONNEL INJURIES
18 | NUMBER 000 (40) (9 11) | DESCRIPTION (41) N.A. (12 80)

LOSS OF OR DAMAGE TO FACILITY (43)
19 | TYPE Z (42) (9) | DESCRIPTION N.A. (10 80)

PUBLICITY
20 | ISSUED Y (44) (9) | DESCRIPTION (45) Press release on March 16, 1978 (10 68) | NRC USE ONLY (69 80)

NAME OF PREPARER: PHONE:

GPO 917-926

Cause Description and Corrective Actions (Continued)

by laboratory test.

JGD:SGS
3/28/78

Report Number : BFRO-50-296/784

Report Date : March 28, 1978

Occurrence Date : March 15, 1978

Facility : Browns Ferry Nuclear Plant Unit 3

Identification of Occurrence

Three Bendix electrical connectors, P/N 10-214036-78p, failed qualification testing at Wyle Laboratories. The test specimens were the same type connectors as those presently used in primary containment.

Conditions Prior to Occurrence

Unit at approximately 95-percent power.

Description of Occurrence

Pin-to-pin shorts occurred in connectors during simulated LOCA conditions.

Designation of Apparent Cause of Occurrence

Moisture entered the rear of the connectors through the grommets. This moisture, combined with impurities, caused pin-to-pin shorts.

Analysis of Occurrence

Test results indicated that identical connectors used in primary containment could possibly fail during a LOCA. The unit was removed from service for corrective action. Since this test was conducted in a laboratory, no effects existed upon public health or safety.

Corrective Action

Connectors in primary containment were potted with 3M Scotchcast to provide an adequate seal against moisture. The potted connectors were qualified by laboratory test.