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 FACIL:50-296 BROWNS FERRY #3, TENNESSEE VALLEY AUTHORITY
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 FOX,H.S. TENNESSEE VALLEY AUTHORITY
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 O'REILLY, J.P. **REG.2,ATLANTA,OFF.OF THE DIRECTOR

DOCKET #
 05000296

SUBJECT: R0-50-296/782:Bendix connectors used inside primary
 containment which failed post-aging environ test were
 modified by potting plug & receptacle portion of connectors
 & passed .10 year qualifying tests.

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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

December 6, 1978

REGULATORY DOCKET FILE COPY

Mr. James P. O'Reilly, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 3100
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-50-296/782

My letter to you dated February 28, 1978, provided details concerning the Bendix connectors of the type used inside the primary containment which failed a post-aging environmental test at Wyle Laboratories testing facility. The following information is provided which we feel will close out this occurrence.

In February 1978, Wyle Laboratories completed qualification tests on all types of electrical connectors used at Browns Ferry Nuclear Plant units 1, 2, and 3. Of these connectors, the type used in the unit 3 drywell (Bendix) failed the tests. The failures were attributed to deterioration caused by excessive heat-accelerated aging of the connectors. It was believed that they were aged at too high a temperature which deteriorated the neoprene seals in the connectors. This explanation was presented to NRC's Washington office, and it was agreed that additional tests would be run.

In March 1978, Wyle Laboratories completed the additional qualification tests on Bendix connectors. Of the ten Bendix connectors tested, three, which were 480-volt connectors, failed. However, another 480-volt Bendix connector which had been modified by potting both the plug and receptacle portion of the connector passed all the tests for a 2-year life. TVA proposed to NRC's Washington office that potting all the safety-related connectors in the unit 3 containment would ensure safe and proper operation of the unit until the planned refueling outage in September 1978. This would allow TVA the necessary time to make provisions to splice out the connectors or to requalify the potted connectors for a longer life. NRC agreed to TVA's proposal. The connectors in unit 3 were potted, and the unit was returned to service.

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Mr. James P. O'Reilly, Director
December 6, 1978

In September 1978, Wyle Laboratories completed the additional qualification tests on potted Bendix connectors. Of the eight connectors tested, all eight passed the tests. These tests qualified potted Bendix connectors for a 10-year life. On September 25, 1978, a letter from J. E. Gilleland was sent to T. A. Ippolito, of NRC, explaining that the existing connectors at Browns Ferry Nuclear Plant had been environmentally qualified for a 10-year life when potted.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

H. S. Fox
Director of Power Production

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

Director (40)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
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