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COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

U.S. HOUSE OF REPRESENTATIVES
 WASHINGTON, DC 20515

April 26, 1985

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RICHARD AGNEW
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The Honorable Nunzio Palladino
 Chairman
 United States Nuclear Regulatory Commission
 Washington, D.C. 20555

Dear Mr. Chairman:

I would like to call your attention to a TVA report: NSRS INVESTIGATION OF CONCERNS RELATED TO FAILURES OF THE HIGH PRESSURE COOLANT INJECTION (HPCI) SYSTEM AT BROWNS FERRY NUCLEAR PLANT. (NSRS Report No. I-84-16-BFN.)

I-84-16-BFN is based on an investigation initiated in March 1984 after TVA employees expressed to the TVA Nuclear Safety Review Staff (NSRS) concerns about the workability of the Browns Ferry High Pressure Coolant Injection (HPCI) system. NSRS concluded overall that the employee concerns were valid and "plant safety, in the event of a LOCA at Browns Ferry (BFN), was in jeopardy." NSRS stated:

From interviews with people from the various TVA organizations, it is obvious that the HPCI system has incurred many failures and has been very unreliable from startup of Unit 1 in 1973. The failures have not been limited to one specific area. The failures have occurred in the components, the control mechanisms, and in structural supports. For a system that is essential for high-pressure cooling of the core in the event of a LOCA, 11 years is too long to repair-as-broken instead of providing a permanent fix. This system must be raised on the priority list and be recognized for its importance to public safety.

The system has been operated in such a manner as to cause fear of testing by the operations group, since they know something will break when testing. The control system in the EGM boxes has malfunctioned continuously due to poor environment. The hanger group along with EN DES personnel agree the piping is inadequately supported to take the loads induced by the fluid flow. Of all the people interviewed no one stated that the system as-designed and as-built is adequate to meet its safety functions.

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Due to the importance to safety of this system, a complete fix to the system so that it will perform its required safety functions must be pursued immediately. Eleven years is too long to rely on not needing a system rather than having it ready if and when it is needed.

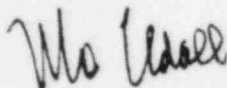
I-84-16-BFN was issued on June 27, 1984. During the period October 10-12, 1984, NRC Region II conducted a "special, unannounced inspection [that] entailed 57 inspector-hours on site in the areas of High Pressure Coolant Injection System Operability." The inspection report (50-259/84-41) is attached. While the inspectors had access to I-84-16-BFN and although they found what would seem to be significant defects, 50-259 84-41 stated that "No violations or deviations were identified."

The fact that for an eleven-year period plant safety would have been in jeopardy in the event of a Loss-of-Coolant accident is a significant matter which raises the following questions:

- When was I-84-16-BFN submitted to the NRC? Were NRC staff aware of the I-84-16-BFN conclusions prior to submission of the report itself? If so, on what date were such conclusions provided to the NRC?
- Did TVA provide NRC I-84-16-BFN in the manner required by applicable NRC regulations? Did TVA fulfill its reporting obligations pursuant to applicable NRC regulations to report HPCI deficiencies in the 1983-1984 time period?
- Does NRC headquarters staff agree with Region II conclusions stated in Inspection Report 59-259/84-41 that the conditions found by NRC inspectors and described in I-84-16-BFN did not represent regulatory violations or deviations?
- In the event that NRC staff believe TVA did fulfill its obligations with respect to reporting and correcting HPCI deficiencies, does the Commission believe there exists a need to strengthen the regulatory requirements vis-a-vis reporting and correcting significant safety defects in reactor systems?

Thank you for your assistance.

Sincerely,



MORRIS K. UDALL
Chairman

November 6, 1984

Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power and Engineering
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

SUBJECT: REPORT NOS. 50-259/84-41, 50-260/84-41 AND 50-296/84-41

On October 10 - 12, 1984, NRC inspected activities authorized by NRC Operating License Nos. DPR-33, DPR-52 and DPR-68 for your Browns Ferry facility. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed inspection report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

Within the scope of the inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC's Public Document Room unless you notify this office by telephone within 10 days of the date of this letter and submit written application to withhold information contained therein within 30 days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1).

Should you have any questions concerning this letter, please contact us.

Sincerely,

(Original signed by DMVerrelli)
David M. Verrelli, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure:
Inspection Report Nos. 50-259/84-41
50-260/84-41, and 50-296/84-41

cc w/encl:
J. A. Coffey, Browns Ferry Nuclear
Plant Site Director
G. T. Jones, Plant Manager
J. W. Anderson, Manager
Office of Quality Assurance
H. M. Culver, Chief, Nuclear Safety Staff
D. L. Williams, Jr., Supervisor
Licensing Section
R. E. Rogers, Project Engineer

bcc w/encl: (See page 3)

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November 6, 1984

bcc w/encl:
NRC Resident Inspector
R. J. Clark, Licensing
Project Manager, NRR
Document Control Desk
State of Alabama

RII
KPoertner:lb
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RII
Julian
10/1/84

RII
AFGibson
10/1/84

RII
RButcher
10/5/84

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FCantrell
10/5/84

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET NW
ATLANTA, GEORGIA 30303

Report Nos.: 50-259/84-41, 50-260/84-41, and 50-296/84-41

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Docket Nos.: 50-259, 50-260 and 50-296

License Nos.: DPR-33, DFK-52,
and DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection Conducted: October 10-12, 1984

Inspectors: W. K. Poertner
W. K. Poertner

11/1/84
Date Signed

P. D. Wagner
P. D. Wagner

11/1/84
Date Signed

L. P. Modenos
L. P. Modenos

10/1/84
Date Signed

Approved by: C. A. Julian
C. A. Julian, Section Chief
Operations Branch
Division of Reactor Safety

11/1/84
Date Signed

SUMMARY

Scope: This special, unannounced inspection entailed 57 inspector-hours on site in the areas of High Pressure Coolant Injection System Operability.

Results: Of the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Licensee Employees Contacted

G. T. Jones, Plant Manager
*J. E. Swindel, Assistant Plant Manager
*B. C. Morris, Compliance Engineer
*M. G. Ray, Site Services
*K. K. Widick, Mechanical Maintenance Engineer
*E. Cornelius, Mechanical Maintenance Engineer
*T. Cosby, Electrical Maintenance Engineer
*H. Walls, Plant Engineering
*G. Dillard, Modifications Engineer
J. Traglia, Modifications Engineer
S. Carter, Electrical Maintenance
W. Roberts, Compliance Engineer
J. Souto, Instrument Engineer
J. Kincaid, Engineering Design
R. Hunkapiller, Operations Supervisor

NRC Resident Inspectors

*F. S. Cantrell, Nuclear Regulatory Commission, Section Chief
*C. A. Patterson
*C. R. Brooks

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 12, 1984, with those persons indicated in paragraph 1 above. A subsequent telephone conversation of October 19, 1984, between the Plant Manager and F. S. Cantrell, Project Section Chief, Region II, was held to discuss the findings of this inspection. The Plant Manager committed to take action to resolve inspector follow-up items 1, 2, and 3 as described in paragraph 5, prior to the restart of Unit 2 from its current refueling outage.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. The inspectors conducted an independent inspection of the High Pressure Coolant Injection (HPCI) system to determine system integrity/operability. Concerns on the HPCI system's integrity/operability were raised by TVA's Nuclear Safety Review Staff (NSRS) Report No. 1-84-16-BFN. The inspectors interviewed selected licensee personnel in the areas of operations, mechanical maintenance, electrical maintenance, design engineering and structural support. The following documentation was reviewed:

NSRS Report 1-84-16-BFN
 Stear 8211 Test Results
 Stear 8202 Test Results
 Browns Ferry Procedure 12.8
 Surveillance Instruction 4.5.E.1.d
 Surveillance Instruction 4.5.E.1.e
 HPCI Task Force Meeting of September 17, 1982 Minutes -
 L26 821006-800
 HPCI Task Force Meeting of June 22, 1984 Minutes - L27 840724-964
 Mechanical Maintenance Instruction - 23
 Electrical Maintenance Instruction - 36
 Browns Ferry Letter L52-840404-856
 DWG #47WB12-R15
 DWG #47W455-SRC
 Trouble Request 131695
 Maintenance Request A-172852
 Maintenance Request A-172853
 Maintenance Request A-170719
 Maintenance Request A-172851
 Maintenance Request A-162181
 Maintenance Request A-172981
 Maintenance Request A-172934
 Maintenance Request A-173749
 Maintenance Request A-173748
 Maintenance Request A-173747
 Maintenance Request A-173746
 Maintenance Request A-173745
 Maintenance Request A-173744
 Maintenance Request A-173743
 Maintenance Request A-173742

The inspectors determined that Browns Ferry recognizes the safety significance of the HPCI system and has instituted a program to identify and resolve potential problems in the HPCI system. This program was initiated in 1980 with the formation of a HPCI Task Force. As a result of this program, extensive testing has been conducted and modifications have been and are being made to the HPCI system to maintain and improve the system's operability/reliability.

The inspectors identified the following inspector followup items during the course of the inspection:

- d. Walkdowns of HPCI system piping and pipe supports after each injection are required by Browns Ferry Procedure 12.8 (Scram Procedure). Also, a monthly walkdown is required by Mechanical Maintenance Instruction 33. However, neither of these requirements specify the criteria these supports and pipes are inspected to. For example, no checklists are provided stating what to look for with respect to restraints or piping. Until specific criteria is provided as to what exactly should be inspected during a HPCI system piping and support walkdown, this will remain an inspector followup item (259, 260, 296/84-41-01).
- b. In January 1984, restraint R-24 was discovered failed in the HPCI system discharge piping of Unit 2. In March 1984, restraint R-23 was discovered failed in the HPCI discharge piping of Unit 2. Based on interviews with plant personnel and review of mechanical maintenance requests a possibility exists that R-23 and R-24 could have both been failed at the same time prior to the discovery of the first broken restraint in January 1984. No stress analysis was subsequently performed on this section of HPCI piping to insure piping integrity. Until an engineering design group stress analysis is performed on the Unit 2 HPCI discharge piping, this will remain an inspector followup item (260/84-41-02).
- c. The HPCI Task force has recommended that Electrical Maintenance Instruction (EMI) 36 be revised to incorporate the Terry Turbine Governor Calibration procedure. Browns Ferry has instituted a revision to EMI-36; however, this revision has not been completed. This is identified as an Inspector Followup Item (259, 260, 296/84-41-03).
- d. The licensee has identified the necessity to relocate the HPCI EGM control boxes due to the harsh environment of high temperature and high humidity in which the control box sits. Steam leaks and the resulting condensation in the box accelerate any corrosion and deterioration of the unit terminals and connections. The licensee plans to move the control boxes off the HPCI stands to an area where any leaks will not impinge directly upon them. Until a Design Change Request (DCR) is approved and the HPCI EGM control boxes relocated, this item will remain an inspector followup item (259, 260, 296/84-41-04).

No violations or deviations were identified.