



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos.: 50-259/83-34, 50-260/83-34 and 50-296/83-34

Licensee: Tennessee Valley Authority

Docket: 50-259, 260, 296

License No.: DPR-33, DPR-52, DPR-68

Facility Name: Browns Ferry 1, 2, 3

Approved by:

F. S. Cantrell
F. S. Cantrell, Chief, Project Section 1B
Division of Project and Resident Programs

8/24/83
Date Signed

SUMMARY

An enforcement conference was held at the Browns Ferry site on August 10, 1983. Mr. D. M. Verrelli opened the meeting by discussing two apparent violations that have occurred recently at the Browns Ferry facility. The licensee discussed the results of their investigation of the apparent violations and responded to questions. Mr. Verrelli summarized the concern of the NRC and stated that these two events indicated a more casual approach to reactor operation than we expect of persons responsible for the operation of nuclear facilities.

Report Details

1. Attendees:

Tennessee Valley Authority

J. A. Coffey, Acting Plant Superintendent
J. E. Swindell, Assistant Plant Superintendent
R. E. Rogers, Browns Ferry, Licensing Engineer
A. J. Zeringue, Supervisor, NSSS Engineering & Analysis Group
B. R. McPherson, Acting Engineering and Test Unit Supervisor
T. L. Chinn, Plant Compliance Supervisor
D. C. Mims, Engineering and Test Unit Supervisor
R. E. Burns, Instrument Maintenance Section Supervisor
R. D. Greer, Acting Electrical Maintenance Supervisor
T. Jordan, Assistant Operations Supervisor
R. Cole, QA Site Representative, Office Of Power

NRC Region II

D. M. Verrelli, Branch Chief, DPRP
F. S. Cantrell, Section Chief, DPRP

2. Enforcement Meeting

Mr. D. M. Verrelli stated that the purpose of the meeting was to review the circumstances related to two Standby Gas Treatment (SBGT) trains for all three units being technically inoperable on June 14, 1983, and the "R" factor being below 1.0 on July 16, 1983 on Unit 2 without resetting the Average Power Range Monitor (APRM) trip setting as required by the Unit 2 Technical Specification.

Mr. J. A. Coffey had the persons involved present the results of their investigation of the two events and answer questions as follows:

SBGT (Inspection Report 50-259, 260, 296/83-27)

The B train of SBGT system was determined to be inoperable at 9:30 p.m., 6/13/83. Operability of A and C trains of SBGT was not demonstrated by 11:30 p.m. as required by Technical Specification. A Limiting Condition for Operation (LCO) was entered. Both A and C SBGT trains were declared operable at 12:10 a.m. 7/14/83 and the LCO condition was lifted. Engineering and maintenance personnel determined that B SBGT train was inoperable because air flow was too low to actuate the flow switch that initiates the charcoal heaters. The dampers on B SBGT were reset to increase the flow to 8458 SCFM (9000±10% SCFM) using a pitot tube traverse and the B train was declared operable at 2:45 a.m., 6/14/83. A and C trains had been declared operable using the same installed flow instrumentation that was found incorrect. Action was not taken to investigate whether A and C trains had adequate flow to be considered operable until 8:45 a.m., 6/14/83 when the engineer

involved reported his findings from the previous shift. Subsequently, the flow through A and C trains (when operating) was determined to be approximately 4200 and 4400 SCFM respectively. Flows were reset and the A and C trains were declared operable at 11:20 a.m., 6/14/83. Corrective Action included (1) adding a locking nut to the damper controls to prevent movement due to vibration (2) changing the procedure to only permit dampers to be adjusted based on a pitot tube traverse rather than the installed flow instrumentation (3) the maximum flow is not permitted to exceed 9900 SCFM. If flow exceeds 11,000 SCFM the meter is considered in error. (4) A design change request has been initiated to replace the flow switch which initiates the heater.

APRM Not Reset (Inspection Report 50-259, 260, 296/83-33)

During rod swaps and scram time testing on Unit 2 on 7/16/83, the "R" factor* decreased below 1.0 several times. Control rod adjustments were made to increase the ratio to 1.0 or greater. At 2:00 p.m. 7/16/83, the R factor again dropped below 1.0 and remained below 1.0 until approximately 5:00 a.m. 7/17. The Shift Engineer was not informed that the "R" factor was out of limits until 7:18 p.m., 7/16. He assumed the unit was in an LCO that required correction or shutdown within 6 hours, and notified management and the load dispatcher that the plant would be manually tripped at 8:00 p.m. if not back in limits. At 7:58 p.m. the trip settings were effectively lowered by adjusting the gain without a procedure.

*Fraction of rated thermal power Core maximum fraction of limiting power density

The licensee identified that:

1. The "R" factor has been removed from Section 2.1 of the Unit 1 Technical Specification and that TVA has submitted a request to revise the Unit 2 and Unit 3 Technical Specification. Exceeding limits in Section 2, LIMITING SAFETY SYSTEM SETTINGS, requires prompt corrective action. Previously, Browns Ferry did not consider that a low "R" factor makes the APRM's inoperable.
2. Technical Specification 3.1, Table 1A provides conflicting instruction in that both Action Notes 1A and 1B are referenced. Note 1A requires insertion of all operable control rods within 4 hours. Note 1B requires reducing power to the IRM range and placing the mode switch in the Startup/Hot Standby position within 8 hours.
3. Various accident analysis assumed the APRM's had a fixed trip of 120% and did not take credit for a variable trip setting as related to flow and "R" factor.
4. An Assistant Shift Engineer (ASE) was informed early that the "R" factor was out of limits. He was a qualified shift engineer and had worked on all units, however, he did not realize that Unit 2 had

different Technical Specifications from Unit 1. As such he did not see a need to promptly inform the responsible Shift Engineer that the R factor was low.

5. Because of local xenon transients that are created when swapping control rods, the proper control rod moves may not be obvious. It is necessary to anticipate xenon movement. General Electric acknowledges that the reactor cannot be operated as indicated by the "R" factor alone.
6. During this period, problems with the Traveling Incore Probe (TIP) System prevented getting a TIP trace to recalibrate the APRMs. It was necessary to return to the original rod pattern to correct the "R" factor.

Mr. Verrelli stated that while there are extenuating circumstances related to these two events and individually the safety significance may be minimal, they point out a need for more diligence on the part of all concerned to ensure that proper levels of management are promptly informed of abnormal events so that appropriate resources are applied to correct the problem. Management cannot accept any less. In both cases, it appears that timely corrective action was not affected, and failure to provide timely information to proper levels of management contributed to the lack of timely action. He stated that the information supplied would be evaluated in order to determine appropriate enforcement action.