



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 225 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 240 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 199 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

On June 2, 1995, the Tennessee Valley Authority (the licensee) submitted an application for amendment to technical specifications (TS) for the Browns Ferry Nuclear Plant (BFN) Units 1, 2 and 3. The application modifies the definition of operability for the standby coolant supply valves of the Residual Heat Removal Service Water (RHRSW) system in BFN Units 1, 2, and 3 by adding a note to TS 3.5.C.3. The application also administratively updates instrument numbers in unit 3 TS tables 3.2.F and 4.2.F. Modifications to BFN Unit 3 TS table 3.2.F and 4.2.F (except for PIS-64-58A) are administrative changes to reflect instrument updates. Surveillance requirements for the instrumentation have not changed. Instrument PIS-64-58A reflects a change omitted from an earlier TS change request. The operability requirements of the remainder of the service water system and the RHR cross-connect valves are not affected by these changes.

The licensee was requested to add information to the TS bases to further clarify the scope of components subject to the new operability definition. By letter dated October 2, 1995, the licensee submitted planned changes to TS bases, sections 3.5.A. and 3.5.B, "Core Spray System (CSS) and Residual heat removal System (RHRS)," 3.5.C, "RHR Service Water and Emergency Equipment Cooling Water Systems (EECS)." These bases changes do not affect the staff's proposed finding of no significant hazards considerations.

This change request resulted from the licensee's 10 CFR 50 Appendix R safe shutdown evaluation. Based on this evaluation, the residual heat removal (RHR) system cross-connect valves between units 2 and 3 (valve nos. 2-FCV-74-101 and 3-FCV-74-100) will have their power supply breakers open during reactor power operation, rendering the standby coolant supply unable to inject to the RHR system, because the RHR cross-connect valves are in the

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standby coolant supply flowpath. TS 3.5.B.11 requires the cross-connect valves capable of being returned to service within 5 hours.

From a systems viewpoint, the review of the licensee request focused on whether the revised operability definition places the facility in an unanalyzed condition. The licensee safety analysis does not take credit for operability of the standby coolant supply for any accident or transient. Both the standby coolant supply valves and the cross-connect valves will continue to remain closed during normal operation.

2.0 DESCRIPTION OF PROPOSED TECHNICAL SPECIFICATIONS CHANGES

By letter dated June 2, 1995, the licensee has proposed the following TS changes:

Revise BFN Units 1, 2 and 3 TS 3.5.C.3, "Standby Coolant Supply", page 3/4.5-10, by inserting the following note:

Note: Because standby coolant supply capability is not a short-term requirement, a component is not considered inoperable if standby coolant supply capability can be restored to service within 5 hours.

Revise unit 3 TS Table 3.2.F, p. 3/4.2-30, "Surveillance Instrumentation" by changing instrument numbers as shown below:

For the first Drywell Pressure:

Existing TS Instrument #: PI-64-67
Proposed TS Instrument #: PI-64-67B

For Drywell Temperature:

Existing TS Instrument #: TI-64-52 and XR-64-50
Proposed TS Instrument #: XR-64-50 and TI-64-52AB

For the second Drywell Pressure:

Existing TS Instrument #: PS-64-67
Proposed TS Instrument #: PS-64-67B

For the Drywell Temperature and Pressure and Timer:

Existing TS Instrument #: XR-64-50, PS-64-58B and IS-64-67
Proposed TS Instrument #: TS-64-52A, PIS-64-58A and IS-64-67A

Revise unit 3 TS Table 4.2.F, p. 3/4.2-53, "Minimum Test and Calibration Frequency for Surveillance Instrumentation" by changing instrument numbers as shown below:

Instrument Channel-10, Drywell Pressure:

Existing TS Instrument #: PS-64-67
Proposed TS Instrument #: PS-64-67B



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Instrument Channel-12, Drywell Temperature:
Existing TS Instrument #: TR-64-52
Proposed TS Instrument #: TR-64-52A

Instrument Channel-13, Timer:
Existing TS Instrument #: IS-64-67
Proposed TS Instrument #: IS-64-67A

By letter dated October 2, 1995, the licensee has also proposed the following TS bases changes:

Revise units 1, 2 and 3 TS bases, sections 3.5.A and 3.5.B, by adding the following:

Since the RHR system cross-connect capability provides added long term redundancy to the other emergency and containment cooling systems, a 5-hour time to establish flow path availability is allowed. This time limit does not reduce the other requirements associated with RHR system pump operability.

Revise units 1, 2 and 3 TS bases, section 3.5.C, by adding the following:

Since the standby coolant supply capability provides added long term redundancy to the other emergency and containment cooling systems, a 5-hour time to establish flow path availability is allowed. This time limit does not reduce the other requirements associated with RHRSW/EECW system pump operability.

Revise units 1, 2 and 3 TS bases, sections 3.5.A, 3.5.B and 3.5.C by moving the following from section 3.5.C to sections 3.5.A/3.5.B:

Verification that the LPCI subsystem cross-tie valve is closed and power to its operator is disconnected ensures that each LPCI subsystem remains independent and a failure of the flow path in one subsystem will not affect the flow path of the other LPCI subsystem.

3.0 EVALUATION

Standby Coolant Supply System - Operability Definition

The licensee has re-evaluated the programs initiated for restart of Browns Ferry unit 2 to determine restart requirements for unit 3. The 10 CFR 50 Appendix R safe shutdown analysis was re-evaluated based upon two-unit operation to determine plant changes necessary to provide assurance that the minimum safe shutdown systems (SSDS) were available for a fire event. As a result of the evaluation, the normally closed RHR system cross-connect valves 2-FCV-74-101 and 3-FCV-74-100 will have their power supply breakers open during reactor power operation. Manual operator action will be required to restore the power to the affected cross-connect valves, allowing injection by the standby coolant supply.

The standby coolant supply provides a connection between the service water system and the residual heat removal system. The discharge of certain service water pumps are provided with an alternate flowpath through the standby coolant supply valves (1,2-FCV-23-57) to the RHR system via the RHR system cross-connect valves (1,2-FCV-74-101 and 2,3-FCV-74-100). Both valves are normally closed and manually operated. Currently, TS 3.5.B.11 requires the cross-connect valves to be capable of being returned to service within five hours. The RHR system cross-connect valves are designed to allow the RHR pumps and heat exchangers on one unit to provide core/primary containment cooling to an adjoining unit whose RHR and/or core spray pumps have failed. The licensee does not assume availability of the standby coolant supply or the RHR cross-connect valves in the Final Safety Analysis Report (FSAR) Chapter 14 safety analyses. Furthermore, the operability requirements of the remainder of the service water system and the RHR cross-connect valves are unaffected by the proposed modifications. Therefore, this change, taken together with the change to the TS bases described below, is acceptable.

Browns Ferry Unit 3 Instrumentation Updates

Technical Specifications Tables 3.2.F and 4.2.F have been revised to reflect new instrument numbers for the updated instrumentation. Surveillance requirements for the updated instrumentation are unchanged. These changes, except for PIS-64-58A, are administrative in nature and are consistent with the existing Unit 2 TS. The change for PIS-64-58A reflects an instrument number change that was inadvertently omitted from an earlier change request. On these bases, the instrumentation changes are acceptable.

Modifications to Technical Specification bases section 3.5.A, 3.5.B and 3.5.C

The licensee was requested by the staff to add information to the TS bases to further clarify the scope of components subject to the new operability definition. By letter dated October 2, 1995, the licensee submitted the requested changes. The additions to the TS bases state that operability requirements of the RHR system and the RHRSW/EECW system are not affected by the proposed changes. This is acceptable to the staff.

4.0 CONCLUSION

The licensee has requested a modification to the BFN Units 1, 2, and 3 technical specifications. The proposal modifies the definition of operability for the standby coolant supply valves of the RHRSW system. The standby coolant supply system will be considered operable if the capability to inject can be restored within 5 hours. The proposal also changes instrument numbers for BFN Unit 3 updated instrumentation.

Review of the licensee request focused on ensuring that the revised definition of operability for the standby coolant system does not place the facility in an unanalyzed condition. Neither the standby coolant supply connection nor the RHR cross-connect capability is required for mitigation of any event analyzed in the Browns Ferry Final Safety Analysis Report (FSAR) Chapter 14 safety analyses. Furthermore, the operability requirements of the remainder of the service water system and the RHR cross-connect valves are unaffected by



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the proposed modifications. The changes to instrument numbers are administrative changes for the upgraded drywell temperature and pressure instrumentation. The licensee, at the request of the staff, has also added information to the TS bases, stating that operability requirements of the RHR system and the RHRSW/EECW system are not affected by the changes. On these bases, the changes are acceptable to the staff.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (60 FR 42610). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

The Commission has concluded, based upon the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and (3) issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

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