Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

October 6, 2000

TVA-BFN-TS-406

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-259
Tennessee Valley Authority	)	50-260
		50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 406 - INCORPORATION OF TS TASK FORCE (TSTF) ITEM 318 REVISION 0 - REVISE TS 3.5.1 FOR ONE LOW PRESSURE COOLANT INJECTION (LPCI) PUMP INOPERABLE IN EACH OF TWO EMERGENCY CORE COOLING SYSTEM (ECCS) DIVISIONS - TAC NOS. MB0161, MB0162, AND MB0163

In accordance with the provisions of 10 CFR 50.90, TVA is submitting a request for a TS change (TS-406) to licenses DPR-33, DPR-52, and DPR-68 to adopt TSTF-318, Revision 0. This TSTF revises Condition A of TS 3.5.1, ECCS-Operating, to include a provision for the inoperability of one LPCI pump in each of the two ECCS divisions.

The subject TSTF item has been approved by the Boiling Water Reactor (BWR) Owner's Group Technical Specifications Issues Coordination Committee, which reviews and endorses proposed generic changes to the BWR/4 Standard Technical Specifications (STS), NUREG-1433, Revision 1, and

D030

NUREG-1434, BWR/6 STS, to clarify usage, correct errors, and make other improvements deemed beneficial to licensees who utilize Improved Technical Specifications (ITS). BFN ITS are based on NUREG-1433, Revision 1.

The TSTF in this submittal package has been previously reviewed and approved by NRC. Following approval by NRC, it is intended that the TSTFs be incorporated by individual licensees as changes to their respective ITS. Adoption of TSTFs has an added benefit of maintaining BFN ITS consistent with the latest approved changes to STS.

Enclosed is a description and justification for the proposed TS change, a comparison of the change with the NRC-approved TSTF, the significant hazards consideration determination, and marked-up copies of the appropriate pages from the current TS and Bases showing the proposed TS revisions.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS changes qualify for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). The BFN Plant Operations Review Committee and the Nuclear Safety Review Board have reviewed these proposed changes, and determined that operation of BFN Units 1, 2, and 3 in accordance with the proposed changes will not endanger the health and safety of the public. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Alabama State Department of Public Health.

TVA is requesting approval of this change as soon as practicable and that it be made effective within 60 days of issuance to allow an orderly implementation of any needed

plant procedures or training. If you have any questions concerning this proposed TS change, please contact me at (256)729-2636.

Sincerely,

T. E. Abney
Manager of Licensing
and Industry Affairs

Subscribed and sworn to before me
on this 6th day of October 2000.

Barbara A. Blanton

Notary Public
My Commission Expires 09/22/2002

Enclosure
cc: See page 4

Enclosure
cc (Enclosure):
Chairman
Limestone County Commission
310 West Washington Street
Athens, Alabama 35611

Mr. Paul Fredrickson, Branch Chief
U.S. Nuclear Regulatory Commission
Region II
61 Forsyth Street, S.W.
Suite 23T85
Atlanta, Georgia 30303

Mr. William O. Long, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

NRC Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, Alabama 35611

State Health Officer
Alabama State Department of Public Health
434 Monroe Street
Montgomery, Alabama 36130-3017

Enclosure

TS-406

Incorporation of TSTF-318, Revision 0

Revise 3.5.1 for One LPCI Pump Inoperable in Each of Two ECCS Divisions

TS-406
Incorporation of TSTF-318, Revision 0

Description of Change

Technical Specifications (TS) Task Force (TSTF) item 318, Revision 0, revises TS 3.5.1 Condition A to include a provision for the inoperability of one Low Pressure Coolant Injection (LPCI) pump in each of the two Emergency Core Cooling Systems (ECCS) divisions. This TS submittal proposes the same change be made to Browns Ferry Nuclear Plant (BFN) TS.

See the attached marked-up Unit 2 TS/TS Bases pages for the detailed changes. The proposed changes are identical for BFN Units 1 and 3 TS.

Reason for the Proposed Change

As part of a continuing effort to maintain and advance the use of Improved TS (ITS), generic changes to NUREG-1433, Revision 1, Boiling Water Reactor (BWR)/4, Standard TS (STS), are initiated by the reactor owners. These proposed changes to the BWR STS are submitted to the BWR Owner's Group Technical Specifications Issues Coordination Committee, which reviews and endorses generic changes to NUREG-1433, Revision 1, STS for BWR/4s and NUREG-1434, STS for BWR/6 reactors. Changes to STS are also proposed by the pressurized water reactor owners' groups who have analogous TS committees. Following approval by the owners' group TS committees, the proposed changes to STS are issued as TSTF items and submitted to NRC for comment, review, and approval. The TSTF incorporated in this submittal package has been previously reviewed and approved by NRC.

Following approval by NRC, it is intended that the TSTFs are incorporated by individual licensees into their ITS. BFN has reviewed TSTF-318, Revision 0, and determined it is appropriate to adopt the TSTF into BFN ITS. In proposing incorporation of this change, BFN is maintaining consistency with the latest approved changes and improvements to STS.

Comparison to TSTF-318, Revision 0

TSTF-318, Revision 0, is adopted with no variances (except that LPCI is spelled out).

Justification for Change

Existing Limiting Condition for Operation (LCO) 3.5.1, ECCS-Operating, Condition A allows one low pressure ECCS injection subsystem to be inoperable for 7 days. TSTF-318, Revision 0, adds an additional Condition A provision that would allow the inoperability of one LPCI pump in each LPCI subsystem for 7 days.

The standard BWR/4 configuration for LPCI systems consists of two LPCI pumps in each of two LPCI subsystems(ECCS injection mode), for a total of 4 LPCI pumps. BFN has this standard LPCI configuration.

Current TS 3.5.1 Condition A provides a 7-day LCO for one inoperable LPCI subsystem (two LPCI pumps in one ECCS injection loop). The proposed TS change to Condition A which also allow the inoperability of one LPCI pump in each LPCI subsystems for 7 days. This configuration reflects an enhanced reliability of at least one LPCI pump being available for post Loss-of-Coolant-Accident (LOCA) injection. With one subsystem (two LPCI pumps in one loop) inoperable, the location of the LOCA pipe break can eliminate the availability of the remaining LPCI subsystem for injection; while the LOCA location during operation with one operable LPCI pump in each ECCS division can only remove one of the two remaining LPCI pumps. Additionally, during an event that does not impact LPCI availability, one pump in each LPCI subsystem provides more injection flow than two pumps in a single subsystem.

Therefore, this new Condition represents a more reliable LPCI configuration than allowed by current TS, and the same 7-day Completion Time is justified. A similar TS change has been approved for Susquehanna and Peach Bottom ITS.

Environmental Impact Consideration

The proposed TS changes do not involve a significant hazards consideration, a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed amendment is not required.

TSTF-318, Revision 0
No Significant Hazards Consideration Determination

TVA is submitting a request for an amendment to the Unit 1, 2, and 3 Technical Specifications (TS) to adopt NRC-approved generic change TS Task Force (TSTF) item TSTF-318, Revision 0. This TSTF revises TS 3.5.1 Condition A to also include a provision for the inoperability of one Low Pressure Coolant Injection (LPCI) pump in both of the two Emergency Core Cooling Systems (ECCS) divisions.

TVA has concluded that operation of Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3 in accordance with the proposed change to the TS does not involve a significant hazards consideration. TVA's conclusion is based on its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

A. **The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.**

The proposed new Condition of one LPCI pump in each LPCI injection subsystem being inoperable is more reliable than the current Limiting Condition for Operation which allows 2 LPCI pumps in one ECCS subsystem to be inoperable for 7 days. Also, the LPCI mode of the Residual Heat Removal system is not assumed to be initiator of any analyzed event. Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

B. **The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed change does not involve a physical alteration of the plant, add any new equipment or require any existing equipment to be operated in a manner different from the present design. The proposed change will not impose any new or eliminate any existing requirements. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

C. <u>The proposed amendment does not involve a significant reduction in a margin of safety.</u>

The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. The proposed new Condition for one LPCI pump in each LPCI injection subsystem represents a more reliable configuration than the existing LCO which allows two LPCI pumps in one ECCS subsystem to be inoperable for 7 days. For these reasons, the proposed amendment does not involve a significant reduction in the margin of safety.

TSTF-318, Revision 0
Marked-up TS Pages

I. Affected Page List

Unit 1	Unit 2	Unit 3
3.5-1	3.5-1	3.5-1
3.5-2	3.5-2	3.5-2
3.5-3	3.5-3	3.5-3
B 3.5-8	B 3.5-8	B 3.5-8
B 3.5-10	B 3.5-10	B 3.5-10
B 3.5-11	B 3.5-11	B 3.5-11

II. Unit 2 marked-up TS/TS Base Pages are attached. The identical changes apply to Units 1 and 3 TS.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.1 ECCS - Operating

LCO 3.5.1 Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of six safety/relief valves shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure ≤ 150 psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore low pressure ECCS injection/spray subsystem(s) to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

(continued)

OR

One low pressure coolant injection (LPCI) pump in both LPCI subsystems inoperable.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. HPCI System inoperable.	C.1 Verify by administrative means RCIC System is OPERABLE. AND C.2 Restore HPCI System to OPERABLE status.	Immediately 14 days
D. HPCI System inoperable. AND ~~One low pressure ECCS injection/spray subsystem is inoperable.~~	D.1 Restore HPCI System to OPERABLE status. OR D.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	72 hours 72 hours
E. One ADS valve inoperable.	E.1 Restore ADS valve to OPERABLE status.	14 days
F. One ADS valve inoperable. AND ~~One low pressure ECCS injection/spray subsystem inoperable.~~	F.1 Restore ADS valve to OPERABLE status. OR F.2 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	72 hours 72 hours

(continued)

Condition A entered.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two or more ADS valves inoperable. OR Required Action and associated Completion Time of Condition C, D, E, or F not met.	G.1 Be in MODE 3. AND G.2 Reduce reactor steam dome pressure to ≤ 150 psig.	12 hours 36 hours
H. Two or more low pressure ECCS injection/spray subsystems inoperable. OR HPCI System and one or more ADS valves inoperable.	H.1 Enter LCO 3.0.3.	Immediately

for reasons other than Condition A

BASES

LCO (continued)

LPCI subsystems may be considered OPERABLE during alignment and operation for decay heat removal when below the actual RHR low pressure permissive pressure in MODE 3, if capable of being manually realigned (remote or local) to the LPCI mode and not otherwise inoperable. At these low pressures and decay heat levels, a reduced complement of ECCS subsystems should provide the required core cooling, thereby allowing operation of RHR shutdown cooling when necessary.

APPLICABILITY

All ECCS subsystems are required to be OPERABLE during MODES 1, 2, and 3, when there is considerable energy in the reactor core and core cooling would be required to prevent fuel damage in the event of a break in the primary system piping. In MODES 2 and 3, when reactor steam dome pressure is $\leq$ 150 psig, ADS and HPCI are not required to be OPERABLE because the low pressure ECCS subsystems can provide sufficient flow below this pressure. ECCS requirements for MODES 4 and 5 are specified in LCO 3.5.2, "ECCS - Shutdown."

ACTIONS

A.1 or if one LPCI pump in both LPCI subsystems is inoperable,

(s)

If any one low pressure ECCS injection/spray subsystem is inoperable, the inoperable subsystem must be restored to OPERABLE status within 7 days. In this condition, the remaining OPERABLE subsystems provide adequate core cooling during a LOCA. However, overall ECCS reliability is reduced, because a single failure in one of the remaining OPERABLE subsystems, concurrent with a LOCA, may result in the ECCS not being able to perform its intended safety function.

BASES

ACTIONS

C.1 and C.2 (continued)

out of service for maintenance or other reasons. It does not mean to perform the Surveillances needed to demonstrate the OPERABILITY of the RCIC System. If the OPERABILITY of the RCIC System cannot be verified, however, Condition G must be immediately entered. If a single active component fails concurrent with a design basis LOCA, there is a potential, depending on the specific failure, that the minimum required ECCS equipment will not be available. A 14 day Completion Time is based on a reliability study cited in Reference 11 and has been found to be acceptable through operating experience.

D.1 and D.2

, or if one LPCI pump in both LPCI subsystems,

If any one low pressure ECCS injection/spray subsystem is inoperable in addition to an inoperable HPCI System, the inoperable low pressure ECCS injection/spray subsystem or the HPCI System must be restored to OPERABLE status within 72 hours. In this Condition, adequate core cooling is ensured by the OPERABILITY of the ADS and the remaining low pressure ECCS subsystems. However, the overall ECCS reliability is significantly reduced because a single failure in one of the remaining OPERABLE subsystems concurrent with a design basis LOCA may result in the ECCS not being able to perform its intended safety function. Since both a high pressure system (HPCI) and a low pressure subsystem are inoperable, a more restrictive Completion Time of 72 hours is required to restore either the HPCI System or the low pressure ECCS injection/spray subsystem to OPERABLE status. This Completion Time is based on a reliability study cited in Reference 11 and has been found to be acceptable through operating experience.

BASES

ACTIONS
(continued)

E.1

The LCO requires six ADS valves to be OPERABLE in order to provide the ADS function. Reference 13 contains the results of an analysis that evaluated the effect of one ADS valve being out of service. Per this analysis, operation of only five ADS valves will provide the required depressurization. However, overall reliability of the ADS is reduced, because a single failure in the OPERABLE ADS valves could result in a reduction in depressurization capability. Therefore, operation is only allowed for a limited time. The 14 day Completion Time is based on a reliability study cited in Reference 11 and has been found to be acceptable through operating experience.

F.1 and F.2

, or one LPCI pump in both LPCI subsystems,

If any one low pressure ECCS injection/spray subsystem is inoperable in addition to one inoperable ADS valve, adequate core cooling is ensured by the OPERABILITY of HPCI and the remaining low pressure ECCS injection/spray subsystem. However, overall ECCS reliability is reduced because a single active component failure concurrent with a design basis LOCA could result in the minimum required ECCS equipment not being available. Since both a high pressure system (ADS) and a low pressure subsystem are inoperable, a more restrictive Completion Time of 72 hours is required to restore either the low pressure ECCS subsystem or the ADS valve to OPERABLE status. This Completion Time is based on a reliability study cited in Reference 11 and has been found to be acceptable through operating experience.