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

August 20, 2002

TVA-BFN-TS-417 10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Washington, D.C. 20555-0001

Gentlemen:

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

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 2 AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 417 - REACTOR WATER CLEANUP SYSTEM - MAIN STEAM VALVE VAULT (MSVV) AREA TEMPERATURE - HIGH - EXTENSION OF CHANNEL CALIBRATION SURVEILLANCE REQUIREMENT FREQUENCY

Pursuant to 10 CFR 50.90, the Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS-417) to licenses DPR-52 and DPR-68 for BFN Units 2 and 3, respectively. The proposed amendment revises TS Table 3.3.6.1-1, Function 5.a, Reactor Water Cleanup (RWCU) System Isolation, Main Steam Valve Vault Area Temperature - High, to extend the frequency of the channel calibration Surveillance Requirement from 122 days to 24 months.

This proposed TS change is related to a design change planned for the next Units 2 and 3 refueling outages, which will abandon the four bimetallic temperature switches in MSVV area currently being used for the Main Steam Line Isolation function (TS Table 3.3.6.1-1, Function 1.d) and instead use four RWCU temperature elements to provide the main steam line isolation function in the MSVV.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for a categorical exclusion from environmental review pursuant to the provisions of

A035

10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and attachments to the Alabama State Department of Public Health.

The design change will be installed during the next Unit 2 and Unit 3 refueling outages, which are scheduled for early 2003 and Spring 2004 respectively. Therefore, TVA is asking that this TS change be approved by February 2003 and that the implementation of the revised TS be made within 60 days of the completion of the individual refueling outages.

There are no regulatory commitments associated with this submittal. This letter is being sent in accordance with NRC Regulatory Issue Summary 2001-05, Guidance on Submitting Documents to the NRC by Electronic Information Exchange or on CD-ROM.

If you have any questions about this 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 20th day of August 2002.

Barbara A. Blanton
Barbara A. Blanton
Notary Public
My Commission Expires 09/22/2002

Attachments:
1. TVA Evaluation of Proposed Change
2. Proposed Technical Specifications Changes (mark-up)
3. Changes to Technical Specifications Bases (mark-up)

cc: See Page 3

Attachments
cc (Attachments):
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Attachment 1

TS-417
Reactor Water Cleanup System - Main Steam Valve Vault Area Temperature - High - Extension of Channel Calibration Surveillance Requirement Frequency

TVA Evaluation of Proposed Change

1.0 DESCRIPTION

This letter is a request to amend Operating Licenses DPR-52 and DPR-68 for Browns Ferry Nuclear Plant (BFN) Units 2 and 3, respectively.

The proposed changes revise BFN Units 2 and 3 Technical Specifications (TS) Table 3.3.6.1-1, Function 5.a, Reactor Water Cleanup (RWCU) System Isolation, Main Steam Valve Vault (MSVV) Area Temperature - High, to extend the frequency of the channel calibration Surveillance Requirement (SR) from 122 days to 24 months. The TS change request is based on a recalculation of the Setpoint and Scaling calculations for the subject instrumentation, which demonstrates the calibration frequency can be extended. This proposed change is related to a design change planned for the next Units 2 and 3 refueling outages, which will abandon the four bimetallic temperature switches in MSVV area currently being used for the Main Steam Tunnel Temperature - High, function and instead use the four RWCU temperature elements in the MSVV to provide the same main steam line isolation function.

2.0 PROPOSED CHANGE

The proposed TS change revises TS Table 3.3.6.1-1, Function 5.a, Reactor Water Cleanup (RWCU) System Isolation, Main Steam Valve Vault Area Temperature - High, to reference SR 3.3.6.1.5 (24 month frequency) rather than SR 3.3.6.1.4 (122 day frequency) for the required channel calibration frequency. The TS bases for Table 3.3.6.1-1, Function 1.d, Main Steam Tunnel Temperature - High, are also being revised to add an informational description of the related design change. Refer to the marked-up Units 2 and 3 TS pages and TS Bases pages in Attachments 2 and 3 for the specific revisions.

3.0 BACKGROUND

A discussion of the Primary Containment Isolation System (PCIS), which includes the pipe break detection high area temperature monitoring instrumentation and logic, is provided in Section 7.3 of the Updated Final Safety Analysis Report (UFSAR). PCIS mechanical logic diagrams are provided in the UFSAR Chapter 7.3 Figures and show the standard one-out-of-two taken twice relay logic used throughout the PCIS. The plant area of interest in this submittal is the MSVV room, which houses the Main Steam Isolation Valves, feedwater injection valves, and other system piping. Main steam line piping and RWCU piping traverses the MSVV area, and currently the main steam line isolation function and the RWCU isolation function are provided by separate instrumentation systems.

The temperature monitors for detecting RWCU system pipe breaks in the MSVV are those listed in TS Table 3.3.6.1-1 as Function 5.a, Main Steam Valve Vault Area Temperature - High. In the associated TS Bases under Function 5.a, the four temperature elements in the MSVV are referenced as temperature indicating switches (TIS)-69-834A-D. The RWCU area temperature monitoring instrumentation uses Weed brand Resistance-Temperature Devices (RTDs) coupled with Rosemount Analog Trip Units (ATUs).

The MSVV main steam line tunnel high temperature switches are listed in TS Table 3.3.6.1-1, under Function 1.d, Main Steam Tunnel Temperature - High. Physically, the system consists of sixteen Fenwal brand bimetallic switches arranged in four sets of four along the length of the main steam lines. Of the sixteen switches, four are located in the MSVV and provide the main steam line break detection function in the MSVV area. In the associated TS bases for Function 1.d, these four switches are referenced as temperature switches (TS)1-17A/B/C/D.

As noted above, currently the MSVV area temperature for the PCIS logic is monitored by two separate sets of temperature instruments. TS 1-17A/B/C/D is a 4-channel set of bimetallic switches (part of Function 1.d of TS table 3.3.6.1-1) dedicated to PCIS main steam line isolation. TIS-69-834A-D consists of a 4-channel set of RTD/ATU instruments (Function 5.a of TS Table 3.3.6.1-1) dedicated to RWCU isolation. A modification is planned under 10 CFR 50.59 which will eliminate the bimetallic switches monitoring the MSVV and utilize the RTD/ATU instruments in the MSVV to provide both main steam line isolation and RWCU isolation.

Current TS have two different channel calibration surveillance frequencies for the main steam line and RWCU isolation functions. TS Function 1.d specifies 24 months and Function 5.a specifies 122 days. Since these functions will be supplied by the same instruments, it is desirable to have parity in the surveillance frequency. Additionally, because the instrument loop will be capable of initiating a main steam isolation, it is desirable to perform the surveillance testing at the longer 24-month frequency to minimize testing risks during plant operation. Therefore, this TS change requests that the channel calibration frequency for both Functions 1.d and 5.a be 24 months for the MSVV instrumentation. To justify a longer calibration period, the Setpoint and Scaling calculations were redone to demonstrate that a 24-month calibration frequency was acceptable for the RWCU isolation function and the main steam line isolation function.

The design change will be installed during the next Units 2 and Unit 3 refueling outages, which are scheduled for early 2003 and Spring 2004 respectively. Therefore, TVA is asking that this TS change be approved by February 2003 and that the implementation of the revised TS be made within 60 days of the completion of the refueling outages.

4.0 TECHNICAL ANALYSIS

The Setpoint and Scaling calculations for the TS Table 3.3.6.1-1, Function 5a-f, Reactor Water Cleanup (RWCU) System Isolation, were based, in part, on an 122-day channel calibration frequency, which is currently referenced in TS as SR 3.3.6.1.4. To support this TS change, the Setpoint and Scaling calculations were revised using a 24 month SR frequency for the RWCU temperature elements in the MSVV (TS Function 5.a). The evaluation was performed assuming a interval of 30 months (24 months + 25%) to account for the maximum SR frequency extension allowed by TS SR 3.0.2.

The function is performed by a Weed Model N9017D-1B-SP RTD and Rosemount Model 710DU Master Trip Unit. The Setpoint and Scaling recalculation was performed in accordance with established TVA Engineering methods (EEB-TI-28, Setpoint Calculations) for instrumentation setpoint analyses. The revised calculation considered the affects of increasing the calibration frequency using both historical plant and vendor supplied drift data. A statistical analysis of the historical data shows there was no time dependent variation of the accuracy. The results of the evaluation indicated that the projected 30 month drift value does not exceed the

allowance provided in the setpoint calculation for the instruments for the RWCU isolation and main steam line isolation function, and is, therefore, acceptable.

The High Energy Line Break calculations for the Units 2 and 3 MSVV rooms have also been redone and show that the physical location and response time of the Weed RTDs are satisfactory to detect and provide the required isolation function for high temperature in the MSVV within the current TS Allowable Values for instruments for the RWCU and main steam line isolation function.

TVA Setpoint and Scaling calculations meet the guidance documented in NRC Generic Letter (GL) 91-04 (Reference 1). This methodology has been reviewed by the NRC and is consistent with NRC Regulatory Guide 1.105 (References 2 and 3). Additional detail on the TVA's Setpoint and Scaling calculation approach used is provided in TVA's April 14, 1998, submittal in support of TS change 390S1, which is the TS change for the transition to a 24 month operating cycle (Reference 4). In TS 390S1, a large number of instrument calibrations were extended to 24 months. NRC approved these extensions in the Safety Evaluation Report dated November 30, 1998, which also concluded that TVA's Setpoint and Scaling methodology was consistent with regulatory guidance provided in GL 94-01 and was, therefore, acceptable (Reference 5). This same calculation approach was used in justifying the extension of the SR frequency in this submittal.

In summary, TVA Setpoint and Scaling calculations justify the extension of the calibration frequency from 122 days to 24 months for the RWCU temperature elements in the MSVV area for the purpose of providing the RWCU and main steam line isolation function. Therefore, the proposed TS changes are acceptable.

5.0 REGULATORY SAFETY ANALYSIS

The Tennessee Valley Authority (TVA) is submitting a amendment request to licenses DPR-52 and DPR-68 for the Browns Ferry Nuclear Plant Units 2 and 3 Technical Specifications (TS). The proposed amendment will revise TS Table 3.3.6.1-1, Function 5.a, Reactor Water Cleanup (RWCU) System Isolation, Main Steam Valve Vault Area Temperature - High, to extend the Surveillance Requirement (SR) frequency of the channel calibration surveillance from every 122 days to every 24 months.

5.1 No Significant Hazards Consideration

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment", as discussed below:

1. Does The proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed amendment changes the channel calibration surveillance frequency from 122 days to 24 months. Under certain circumstances, TS SR 3.0.2 would allow a maximum surveillance interval of 30 months for the SR. An instrumentation calculation in accordance with the guidelines of Generic Letter 91-04 has shown that the reliability of protective instrumentation will be preserved for the maximum allowable surveillance interval. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change simply extends the channel calibration interval of instrumentation from 122 days to 24 months and does not affect plant modes of operation. Hence, the change does not create the possibility of any new failure mechanisms. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3.0 Does the proposed amendment involve a significant reduction in a margin of safety.

Response: No

The proposed amendment changes the instrument channel calibration surveillance interval from 122 days to 24 months. An instrumentation calculation in accordance with the guidelines of Generic Letter 91-04 has shown safety margins are preserved with the extended surveillance interval and that the TS allowable values are not changed. Therefore, it is concluded that the

proposed amendment does not involve a significant reduction in a margin of safety.

5.2 Applicable Regulatory Requirements/Criteria

Setpoint and Scaling calculations were performed, which demonstrated that the channel calibration interval may be extended from 122 days to 24 months. These calculations were performed using standard TVA Engineering methods, which are consistent with the guidance provided in Generic Letter 91-04. The TVA instrument calculation methodology has been previously reviewed by NRC and found acceptable in other TS changes. This same calculation approach was used in justifying the extension of the SR frequency in this submittal. Therefore, it is concluded that the proposed changes meet applicable regulatory requirements.

6.0 ENVIRONMENTAL CONSIDERATION

The proposed does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, 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), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

1. Generic Letter 91-04, Changes in Technical Specification Surveillance Intervals to Accommodate a 24 Month Fuel Cycle, April 1991.

2. Regulatory Guide 1.105, Instrument Setpoints for Safety-Related Systems, Revision 2, February 1986.

3. NRC BFN Inspection Report 89-06, May 8, 1989.

4. April 14, 1998, Letter from TVA to NRC transmitting Technical Specifications Change TS-390 Supplement 1 - Request for License Amendment to Support 24 Month Fuel Cycles.

5. November 30, 1998, NRC Safety Evaluation Report for TS-390 (TAC Nos. MA2081, MA2082, and MA2803).

Attachment 2

TS-417
Reactor Water Cleanup System - Main Steam Valve Vault Area Temperature - High - Extension of Calibration Surveillance Requirement Frequency

Proposed Technical Specifications Changes (mark-up)

Table 3 3 6 1-1 (page 3 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5. Reactor Water Cleanup (RWCU) System Isolation					
a. Main Steam Valve Vault Area Temperature - High	1,2,3	2	F	SR 3 3 6 1.2 SR 3 3.6 1.4 SR 3 3 6 1.6	≤ 188°F
b. Pipe Trench Area Temperature - High	1,2,3	2	F	SR 3 3.6 1.2 SR 3 3.6 1.4 SR 3 3.6 1.6	≤ 135°F
c Pump Room A Area Temperature - High	1,2,3	2	F	SR 3 3 6 1.2 SR 3 3.6 1.4 SR 3 3.6.1.6	≤ 152°F
d. Pump Room B Area Temperature - High	1,2,3	2	F	SR 3 3 6.1.2 SR 3 3.6.1.4 SR 3 3.6 1.6	≤ 152°F
e. Heat Exchanger Room Area (West Wall) Temperature - High	1,2,3	2	F	SR 3 3.6.1.2 SR 3 3.6.1.4 SR 3 3.6 1.6	≤ 143°F
f. Heat Exchanger Room Area (East Wall) Temperature - High	1,2,3	2	F	SR 3 3.6.1.2 SR 3 3.6 1.4 SR 3 3.6 1.6	≤ 170°F
g SLC System Initiation	1,2	1(a)	H	SR 3 3.6 1.6	NA
h Reactor Vessel Water Level - Low, Level 3	1,2,3	2	F	SR 3 3.6 1.1 SR 3 3.6 1.2 SR 3 3.6 1.5 SR 3 3.6 1.6	≥ 528 inches above vessel zero
6 Shutdown Cooling System Isolation					
a Reactor Steam Dome Pressure - High	1,2,3	1	F	SR 3 3.6 1.2 SR 3 3.6 1.5 SR 3 3.6 1.6	≤ 115 psig
b Reactor Vessel Water Level - Low, Level 3	3,4,5	2(b)	I	SR 3 3 6 1.1 SR 3 3 6.1.2 SR 3 3.6 1.5 SR 3 3.6 1.6	≥ 528 inches above vessel zero
c Drywell Pressure - High	1,2,3	2	F	SR 3 3 6.1.2 SR 3 3.6 1.5 SR 3 3.6 1.6	≤ 2 5 psig

(a) One SLC System Initiation signal provides logic input to close both RWCU valves

Table 3 3 6.1-1 (page 3 of 3)
Primary Containment Isolation Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION C.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
5	Reactor Water Cleanup (RWCU) System Isolation					
	a. Main Steam Valve Vault Area Temperature - High	1,2,3	2	F	SR 3 3.6 1.2 SR 3 3.6 1.4 SR 3 3.6 1.6	≤ 201°F
	b Pipe Trench Area Temperature - High	1,2,3	2	F	SR 3 3.6.1.2 SR 3 3.6 1.4 SR 3 3.6 1.6	≤ 135°F
	c. Pump Room A Area Temperature - High	1,2,3	2	F	SR 3 3.6.1.2 SR 3 3.6.1.4 SR 3 3 6.1.6	≤ 152°F
	d. Pump Room B Area Temperature - High	1,2,3	2	F	SR 3 3.6.1.2 SR 3 3.6.1.4 SR 3 3 6 1 6	≤ 152°F
	e. Heat Exchanger Room Area (West Wall) Temperature - High	1,2,3	2	F	SR 3.3.6 1.2 SR 3 3 6.1.4 SR 3 3.6.1 6	≤ 143°F
	f Heat Exchanger Room Area (East Wall) Temperature - High	1,2,3	2	F	SR 3 3 6 1 2 SR 3 3 6.1.4 SR 3 3 6 1 6	≤ 170°F
	g SLC System Initiation	1,2	1(a)	H	SR 3 3 6.1.6	NA
	h Reactor Vessel Water Level - Low, Level 3	1,2,3	2	F	SR 3.3 6.1 1 SR 3 3 6.1.2 SR 3 3 6.1.5 SR 3 3 6.1.6	≥ 528 inches above vessel zero
6	Shutdown Cooling System Isolation					
	a Reactor Steam Dome Pressure - High	1,2,3	1	F	SR 3 3 6.1.2 SR 3.3 6.1 5 SR 3.3 6.1.6	≤ 115 psig
	b Reactor Vessel Water Level - Low, Level 3	3,4,5	2(b)	I	SR 3.3 6.1.1 SR 3.3 6 1.2 SR 3.3 6 1 5 SR 3.3 6 1 6	≥ 528 inches above vessel zero
	c. Drywell Pressure - High	1,2,3	2	F	SR 3 3 6 1.2 SR 3.3 6 1.5 SR 3 3 6 1.6	≤ 2.5 psig

(a) One SLC System Initiation signal provides logic input to close both RWCU valves

Attachment 3

TS-417

Reactor Water Cleanup System (RWCU) - Main Steam Valve Vault (MSSV) Area Temperature - High - Extension of Calibration Surveillance Requirement (SR) Frequency

Changes To Technical Specifications Bases (mark-up)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

1.d. Main Steam Tunnel Temperature - High
(TS-1-17A-D, 29A-D, 40A-D, 54A-D)

The Main Steam Tunnel Temperature Function is provided to detect a leak in the RCPB and provides diversity to the high flow instrumentation. The isolation occurs when a very small leak has occurred. If the small leak is allowed to continue without isolation, offsite dose limits may be reached. However, credit for these instruments is not taken in any transient or accident analysis in the FSAR, since bounding analyses are performed for large breaks, such as MSLBs.

twelve

Main Steam Tunnel temperature signals are initiated from bimetallic temperature switches located in the areas being monitored. Sixteen channels of Main Steam Tunnel Temperature - High Function are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

And four temperature elements

The main steam tunnel temperature detection system Allowable Value is chosen to detect a leak equivalent to between 1% and 10% rated steam flow.

This Function isolates the Group 1 valves excluding the Recirculation Loop Sample valves.

The four temperature elements monitor the Main Steam Valve Vault area.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

1.d. Main Steam Tunnel Temperature - High
(TS-1-17A-D, 29A-D, 40A-D, 54A-D)

The Main Steam Tunnel Temperature Function is provided to detect a leak in the RCPB and provides diversity to the high flow instrumentation. The isolation occurs when a very small leak has occurred. If the small leak is allowed to continue without isolation, offsite dose limits may be reached. However, credit for these instruments is not taken in any transient or accident analysis in the FSAR, since bounding analyses are performed for large breaks, such as MSLBs.

twelve

And four temperature elements

Main Steam Tunnel temperature signals are initiated from bimetallic temperature switches located in the areas being monitored. Sixteen channels of Main Steam Tunnel Temperature - High Function are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The four temperature elements monitor the Main Steam Value Vault area.

The main steam tunnel temperature detection system Allowable Value is chosen to detect a leak equivalent to between 1% and 10% rated steam flow.

This Function isolates the Group 1 valves excluding the Recirculation Loop Sample valves.

(continued)