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Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-14-166

February 17, 2015

10 CFR 50.90

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: **Application to Revise BFN Units 1, 2, and 3 Technical Specifications 3.3.6.1, Table 3.3.6.1-1, Function 5.g and Bases (BFN-TS-479)**

Reference:
1. Letter, TVA (Abney) to NRC DCD, "Browns Ferry Nuclear Plant (BFN) – Units 1, 2, and 3 – License Amendment – Alternative Source Term," (TVA-BFN-TS-405), dated July 31, 2002 (ML022200382)

2. Letter, NRC (Eva Brown) to TVA (Karl Singer), "Browns Ferry Nuclear Plant, Units 1, 2, and 3 — Issuance of Amendments Regarding Full-Scope Implementation of Alternative Source Term (TAC Nos. MB5733, MB5734, MB5735, MC0156, MC0157 AND MC0158) (TS-405)," dated September 27, 2004 (ML042730028)

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting a request for an amendment to Facility Operating License (OL) Numbers DPR-33, DPR-52, and DPR-68 for Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3, respectively.

The proposed amendment modifies Technical Specification (TS) Table 3.3.6.1-1, Primary Containment Isolation Instrumentation, Function 5.g, Standby Liquid Control (SLC) System Initiation to add "Mode 3" to the column titled "Applicable Modes or Other Specified Conditions." The proposed change corrects an omission in the table and revises the Bases description for Table 3.3.6.1-1, Function 5.g. The inclusion of the Mode 3 designation to Function 5.g was inadvertently omitted from the markups submitted in Reference 1 and approved by NRC in Reference 2.

Enclosure 1 provides a description and assessment of the proposed change. Attachments 1 and 2 of the Enclosure provide the existing BFN, Units 1, 2, and 3, TS and TS Bases pages marked-up to show the proposed changes. Attachments 3 and 4 provide clean typed BFN, Units 1, 2, and 3 TS and TS Bases pages revised to show the proposed changes.

TVA has determined that there are no significant hazard considerations associated with the proposed change and that the change qualifies 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 TVA Nuclear Safety Review Board have reviewed this proposed change and determined that operation of BFN in accordance with the proposed change will not endanger the health and safety of the public.

In accordance with 10 CFR 50.91(b) (1), "Notice for Public Comment; State Consultation," a copy of this application and its reasoned analysis regarding no significant hazards considerations is being provided to the Alabama Department of Public Health.

TVA requests that the NRC approve this amendment by December 31, 2015 with implementation within 60 days of issuance.

No new regulatory commitments are made in this submittal. Please address any questions regarding this request to Mr. Edward D. Schrull at 423-751-3850.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 17th day of February 2015.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

1. Evaluation of Proposed Change, Application to Revise Technical Specifications Table 3.3.6.1-1, Primary Containment Isolation Instrumentation (BFN-TS-479)

cc (Enclosures):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
NRC Project Manager – Browns Ferry Nuclear Plant
State Health Officer, Alabama Department of Public Health

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT
UNITS 1, 2, and 3

EVALUATION OF PROPOSED CHANGE

Subject: Application to Revise Technical Specifications Table 3.3.6.1-1, Primary Containment Isolation Instrumentation (BFN-TS-479)

1.0 SUMMARY DESCRIPTION

2.0 DETAILED DESCRIPTION

3.0 TECHNICAL EVALUATION

4.0 REGULATORY ANALYSIS

4.1 No Significant Hazards Consideration Determination

5.0 ENVIRONMENTAL CONSIDERATION

6.0 REFERENCES

ATTACHMENTS

1. Proposed Technical Specifications Page Markups
2. Proposed Technical Specifications Bases Pages Markups (for information only)
3. Proposed Retyped Technical Specifications Pages
4. Proposed Retyped Technical Specifications Bases Pages (for information only)

1.0 SUMMARY DESCRIPTION

This proposed change revises Browns Ferry Nuclear Plant (BFN) Units 1, 2, and 3 Technical Specification (TS) Table 3.3.6.1-1, "Primary Containment Location Instrumentation," Function 5.g, "SLC System Initiation," and the associated Bases. The proposed change adds "Mode 3" to the first column entitled "Applicable Modes or Other Specified Conditions," correcting an inadvertent omission in the existing Table 3.3.6.1-1, Function 5.g and Bases.

2.0 DETAILED DESCRIPTION

The following changes are being requested;

1. Revise Function 5.g, "SLC System Initiation," of Table 3.3.6.1-1 to add "Mode 3" to the first column entitled, "Applicable Modes or Other Specified Conditions." This addition is consistent with the Standby Liquid Control System (SLCS) applicability in TS 3.1.7 previously approved in Reference 2.

2. Revise the TS Bases for Table 3.3.6.1-1, Function 5.g to include a description including Mode 3 and the reason for this applicability to maintain the suppression pool pH level below 7 following a Loss of Coolant Accident (LOCA) event. Note that the Bases already reference TS 3.1.7 for SLCS applicability. Thus, the proposed change is ensuring consistency between TS 3.1.7, TS Table 3.3.6.1-1, Function 5.g and its associated Bases, and the Final Safety Analysis Report (FSAR).

3.0 TECHNICAL EVALUATION

The proposed change adds "Mode 3" to Function 5.g of Table 3.3.6.1-1 and the associated Bases for the BFN Units 1, 2, and 3 TS. This change corrects an omission in the table that resulted from a previous change to the BFN TS (Reference 1). The proposed change is conservative because it requires the Standby Liquid Control System (SLCS) initiation to be Operable in Modes 1, 2 and 3, whereas per the current TS table, Function 5.g is only required for Modes 1 and 2. The proposed change is consistent with the previously approved (Reference 2) TS 3.1.7 "Standby Liquid Control (SLC) System," and the associated Bases for the SLCS and does not create any new operating conditions that should be evaluated.

As discussed in the TS Bases 3.1.7, "SLC System Applicability," in Modes 1, 2, and 3, the SLCS must be operable to ensure offsite doses remain within 10 CFR 50.67, "Accident Source Term," limits following a loss of coolant accident (LOCA) involving significant fission product releases. In addition to reactivity control in Modes 1 and 2, the SLCS is also used to maintain suppression pool pH below 7 following a LOCA event and to ensure iodine is retained in the suppression pool water. The use of SLCS to control suppression pool pH below 7 is further discussed in Final Safety Analysis Report (FSAR) Section 14.6.3.5 (Reference 3). This FSAR section describes the use of the SLCS operation to add sodium pentaborate solution to the suppression pool water in order to maintain it below a pH of 7 following a LOCA event.

The SLCS operation and operability remain unchanged as a result of this proposed change. No physical plant change or procedural change is required as a result of implementing the proposed change.

4.0 REGULATORY ANALYSIS

4.1 No Significant Hazards Consideration Determination

Tennessee Valley Authority (TVA) requests adoption of the proposed change to TS 3.3.6.1, Table 3.3.6.1-1, Function 5.g and the associated Bases into the BFN, Units 1, 2, and 3 Technical Specifications (TS).

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment(s) 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 consequence of an accident previously evaluated?*

   Response: No.

The proposed change revises the Table 3.3.6.1-1, Function 5.g, "SLC System Initiation," and associated Bases to be applicable in Mode 3. The proposed change is not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not increased. The proposed change ensures that the SLCS continues to be capable of performing its assumed safety function and is not rendered inoperable if any Unit is placed into Mode 3. This proposed change does not alter any previously evaluated changes, but ensures that the applicability of Table 3.3.6.1-1, Function 5.g is consistent with other related Technical Specifications. This change was proposed in Reference 1 and previously evaluated by NRC and found acceptable (Reference 2). The effect of the proposed change is to provide consistency within the BFN Technical Specifications. Thus, the consequences of any accident previously evaluated are not increased.

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 revises the Table 3.3.6.1-1, Function 5.g, "SLC System Initiation," and associated Bases to be applicable in Mode 3. The proposed change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the proposed change does not impose any new or different requirements that could initiate an accident. The proposed change does not alter assumptions made in the safety analysis and is consistent with the safety analysis assumptions.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. *Does the proposed amendment involve a significant reduction in a margin of safety?*

Response: No.

The proposed change revises the Table 3.3.6.1-1, Function 5.g, "SLC System Initiation," to be applicable in Mode 3. The proposed change conservatively requires SLCS initiation to be operable while any BFN Unit is in Modes 1, 2 and 3. The proposed change does not adversely affect any current plant safety margins or the reliability of the equipment assumed in the safety analysis. Therefore, there are no changes being made to any safety analysis assumptions, safety limits or limiting safety system settings that would adversely affect plant safety as a result of the proposed change.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.0 ENVIRONMENTAL EVALUATION

The proposed change does not change any requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or change an inspection or surveillance requirement. The proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a 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 change meets the eligibility criterion 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 change.

6.0 REFERENCES:

1. Letter, TVA (Abney) to NRC DCD, "Browns Ferry Nuclear Plant (BFN) – Units 1, 2, and 3 – License Amendment – Alternative Source Term," (TVA-BFN-TS-405), dated July 31, 2002 (ML022200382)

2. NRC letter from Brown to Singer (TVA), "Browns Ferry Nuclear Plant, Units 1, 2, and 3 — Issuance of Amendments Regarding Full-Scope Implementation of Alternative Source Term (TAC NOS. MB5733, MB5734, MB5735, MC0156, MC0157 AND MC0158) (TS-405)," dated September 27, 2004 (ML042730028)

3. FSAR Section 14.6.3.5, Fission Product Release from Primary Containment

Attachment 1

Proposed Technical Specification Page Markups

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 SR 3.3.6.1.6	≤ 170°F
f. Heat Exchanger Room Area (East Wall) Temperature - High	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 143°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

, 3

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

(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained.

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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

, 3

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

(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained.

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 SR 3.3.6.1.6	≤ 170°F
g.	SLC System Initiation	1,2	1(a), 3	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

(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained

Attachment 2

Proposed Technical Specification Bases Pages Markups (for information only)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

and in MODE 3 because this MODE uses the SLC System sodium pentaborate as a buffering solution to maintain the pH level below 7 in the suppression pool in the event of a LOCA. These

because

The SLC System Initiation Function is required to be OPERABLE ~~only~~ in MODES 1 and 2, ~~since~~ these are the only MODES where the reactor can be critical, ~~and these~~ MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

and in MODE 3 because this MODE uses the SLC System sodium pentaborate as a buffering solution to maintain the pH level below 7 in the suppression pool in the event of a LOCA. These

because

The SLC System Initiation Function is required to be OPERABLE ~~only~~ in MODES 1 and 2, ~~since~~ these are the only MODES where the reactor can be critical, ~~and these~~ MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

and in MODE 3 because this MODE uses the SLC System sodium pentaborate as a buffering solution to maintain the pH level below 7 in the suppression pool in the event of a LOCA. These

because

The SLC System Initiation Function is required to be OPERABLE ~~only~~ in MODES 1 and 2, ~~since~~ these are the only MODES where the reactor can be critical~~, and these~~ MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)

Attachment 3

Proposed Retyped Technical Specifications Pages

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 SR 3.3.6.1.6	≤ 170°F
f. Heat Exchanger Room Area (East Wall) Temperature - High	1,2,3	2	F	SR 3.3.6.1.2 SR 3.3.6.1.5 SR 3.3.6.1.6	≤ 143°F
g. SLC System Initiation	1,2,3	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.
(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained.

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 SR 3.3.6.1.6	≤ 170°F
g. SLC System Initiation	1,2,3	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.
(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained.

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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 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 3.3.6.1.5 SR 3.3.6.1.6	≤ 170°F
g. SLC System Initiation	1,2,3	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.
(b) Only one channel per trip system required in MODES 4 and 5 when RHR Shutdown Cooling System integrity maintained.

Attachment 4

Proposed Retyped Technical Specifications Bases Pages (for information only)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

The SLC System Initiation Function is required to be OPERABLE in MODES 1 and 2, because these are the only MODES where the reactor can be critical, and in MODE 3 because this MODE uses the SLC System sodium pentaborate as a buffering solution to maintain the pH level below 7 in the suppression pool in the event of a LOCA. These MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

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As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

5.g. SLC System Initiation

The isolation of the RWCU System is required when the SLC System has been initiated to prevent dilution and removal of the boron solution by the RWCU System (Ref. 4). An isolation signal for both RWCU isolation valves is initiated when the SLC pump start handswitch is not in the stop position.

There is no Allowable Value associated with this Function since the channels are mechanically actuated based solely on the position of the SLC System initiation switch.

The SLC System Initiation Function is required to be OPERABLE in MODES 1 and 2, because these are the only MODES where the reactor can be critical, and in MODE 3 because this MODE uses the SLC System sodium pentaborate as a buffering solution to maintain the pH level below 7 in the suppression pool in the event of a LOCA. These MODES are consistent with the Applicability for the SLC System (LCO 3.1.7).

As noted (footnote (a) to Table 3.3.6.1-1), the SLC initiation signal provides input to the isolation logic for both RWCU isolation valves.

5.h. Reactor Vessel Water Level - Low, Level 3 (LIS-3-203A-D)

Low RPV water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. Therefore, isolation of some interfaces with the reactor vessel occurs to isolate the potential sources of a break. The isolation of the RWCU System on Level 3 supports actions to ensure that the fuel peak cladding

(continued)