Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

January 28, 2008
NOC-AE- 07002234
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Proposed Amendment to Technical Specification 3.3.1 Required Action for
Inoperable Extended Range Neutron Flux Instrumentation and
Technical Specification 3.4.1.4.2 Action c

In accordance with the provisions of 10 CFR 50.90, STP Nuclear Operating Company (STPNOC) is submitting a request for an amendment to the South Texas Project Operating Licenses NPF-76 and NPF-80 to establish an Action in Technical Specification (TS) 3.3.1, "Reactor Trip Instrumentation" for two inoperable channels of extended range neutron flux instrumentation. STPNOC also proposes a minor correction to TS 3.4.1.4.2 ACTION c.

TS 3.3.1 ACTION 5 applies for the extended range neutron flux instrumentation in MODEs 3, 4, and 5. The TS establishes action for one inoperable channel of extended range neutron flux, but has no action for two inoperable channels; therefore, TS 3.0.3 applies in MODE 3 and MODE 4. However, there is no action for two inoperable channels in MODE 5 and the action for one inoperable channel is not adequate. STP procedures require appropriate action for two inoperable channels and STPNOC proposes to revise the TS to be consistent with the procedures. The proposed action is also consistent with NUREG-1431, "Standard Technical Specifications - Westinghouse Plants", with modifications consistent with the current STP TS.

The Enclosure provides a technical and regulatory evaluation of the changes. Proposed TS page markups are included as attachments to the Enclosure.

STPNOC requests approval by November 1, 2008 and requests 90 days for implementation.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

STI: 32224117

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NRR

The STPNOC Plant Operations Review Committee has reviewed and concurred with the proposed change to the Technical Specifications.

If there are any questions regarding the proposed amendment, please contact Mr. Wayne Harrison at (361) 972-7298 or me at (361) 972-7454.

There are no commitments in this submittal.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 28, 2008
Date

Charles T. Bowman
Charles T. Bowman
General Manager, Oversight

awh/

Enclosure: Evaluation of the Proposed Change

cc:

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ENCLOSURE

Evaluation of the Proposed Change

Subject: Proposed Amendment to Technical Specification 3.3.1 Required Action for Inoperable Extended Range Neutron Flux Instrumentation and Technical Specification 3.4.1.4.2 Action c

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ATTACHMENTS:
1. Technical Specification Page Markup
2. Technical Specification Bases Page Insert

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ENCLOSURE

1.0 SUMMARY DESCRIPTION

In MODE 3, 4, and 5, the STP safety analysis relies on the extended range neutron flux instrumentation to alert the operator to unexpected increases in reactivity from boron dilution with at least 15 minutes to take action before loss of shutdown margin. Technical Specification 3.3.1, "Reactor Trip Instrumentation", provides an action for one inoperable channel of the extended range neutron flux instrumentation, but has no action for loss of both channels (i.e., loss of function). In MODE 3 and MODE 4, TS 3.0.3 applies for this condition. However, TS 3.0.3 does not apply in MODE 5 and the TS 3.3.1 action for one inoperable channel is not adequate. STPNOC proposes to revise the action for the extended range neutron flux instrumentation to address the condition for two inoperable channels by requiring isolation of boron dilution pathways and more frequent monitoring of reactor coolant system (RCS) boron concentration. STPNOC proposes that the action apply in MODE 3 and MODE 4 because it is the appropriate action to address the specific condition, rather than TS 3.0.3.

Although the STP boron dilution mitigation design does not involve automatic actuation of valves from the source range monitor as described in the Westinghouse NUREG-1431 Limiting Condition for Operation (LCO) 3.3.9, "Boron Dilution Protection System", STPNOC has based the proposed actions on the required action from that TS.

STPNOC also proposes to revise ACTION c. of TS 3.4.1.4.2, "Reactor Coolant System, Cold Shutdown – Loops Not Filled" to change the requirement for verification of boron concentration to verification of shutdown margin.

2.0 DETAILED DESCRIPTION

Specifically, STP proposes to revise TS 3.3.1, Table 3.3-1, ACTION 5 to make the existing requirement ACTION 5.a and add ACTION 5.b to address the condition for two inoperable channels of extended range neutron flux instrumentation (Item 7 in Table 3.3-1), as shown below.

ACTION 5

a. With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 72 hours, or suspend all operations involving positive reactivity changes.

   Note: Plant temperature changes or boron dilution is allowed provided the change is accounted for in the calculated SHUTDOWN MARGIN.

b. With the number of OPERABLE channels two less than the Minimum Channels OPERABLE requirement, restore at least one channel to OPERABLE status within 1 hour, or

   1. Suspend all operations involving positive reactivity changes, and

Note: Operations involving plant temperature changes may proceed provided the change is accounted for in the calculated SHUTDOWN MARGIN when ACTION 5.b.2 is completed and reactor coolant system boron concentration has been verified to be within required limits,

2. Immediately initiate action to secure each valve or mechanical joint used to isolate unborated water sources from the reactor coolant system, and
3. Within 4 hours and once per 12 hours thereafter, verify SHUTDOWN MARGIN is within limits specified in the COLR.

The change to divide ACTION 5 in to 5.a and 5.b is an administrative change to accommodate the new requirements established in ACTION 5.b.

ACTION 5.a includes a new proposed completion time of 72 hours to restore the inoperable channel to OPERABLE status. The completion time is consistent with the completion time required in NUREG-1431, LCO 3.9.9, ACTION A. The existing allowance for temperature changes or boron dilution is restated as a note, which is an administrative format change.

ACTION 5.b is a new requirement to address the condition both channels of extended range neutron flux monitoring instrumentation being inoperable. The TS did not previously have an action for this condition. It requires at least one channel to be restored to OPERABLE status within 1 hour or apply the requirements of ACTIONs 5.b.1, 5.b.2, and 5.b.3. The required completion time of 1 hour is consistent with NUREG-1431, LCO 3.9.9, ACTION B.

ACTION 5.b.1 requires the suspension of all operations involving positive reactivity changes and is consistent with the requirement in ACTION 5.a. The loss of function for the neutron flux extended range monitor results in the potential for a reactivity change that could challenge the operators' ability to identify a loss of required shutdown margin and this action restricts operations that could challenge the shutdown margin. The action is modified by a note that allows temperature changes once the boron dilution pathways are isolated and the operators have confirmed the reactor coolant system (RCS) boron concentration is acceptable.

ACTION 5.b.2 requires initiation of action to isolate sources of unborated water from the reactor coolant system. Completion of this action establishes a condition that administratively precludes the potential for a boron dilution, consistent with the design basis in the STP Updated Final Safety Analysis Report (UFSAR).

ACTION 5.b.3 requires verifying RCS SHUTDOWN MARGIN is within limits specified in the COLR within 4 hours and once per 12 hours thereafter. Due to the potential of having diluted the boron concentration of the reactor coolant, verification of shutdown margin must be performed to demonstrate that the required boron concentration exists.

The associated TS Bases will be revised to address ACTION 5.b. The Bases insert is attached for the staff's information.

ACTION c. of TS 3.4.1.4.2 states:

> With a valve or mechanical joint used to isolate unborated water sources not secured in the closed position, immediately suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN specified in the Core Operating Limits Report (COLR) and initiate action to secure the valve(s) or joint(s) in the closed position and within 4 hours verify boron concentration is within limits specified in the COLR. The required action to verify the boron concentration within limits must be completed whenever ACTION c is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

STPNOC proposes to revise the action to read as follows:

> With a valve or mechanical joint used to isolate unborated water sources not secured in the closed position, immediately suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet the SHUTDOWN MARGIN specified in the Core Operating Limits Report (COLR) and initiate action to secure the valve(s) or joint(s) in the closed position and within 4 hours verify SHUTDOWN MARGIN is within limits specified in the COLR. The required action to verify the SHUTDOWN MARGIN is within limits must be completed whenever ACTION c is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

3.0 TECHNICAL EVALUATION

The TS 3.3.1 safety function of the extended range neutron flux monitoring instrumentation is to alert the operator to a loss of shutdown margin from a boron dilution event. In Modes 3, 4 and 5, the extended range neutron flux-multiplication alarm provides the signal indicating an inadvertent boron dilution. This alarm is not part of the RPS but is used as a mitigation function for this event. There are two channels of the monitoring instrumentation with a range of 1E-08 to 200% power. Either channel can provide the required flux multiplication alarm. The extended range neutron flux instrumentation is also used for post-accident neutron flux monitoring and is powered by Class 1E power and is seismically and environmentally qualified. The alarm actuated by the extended range neutron flux signal is not Class 1E qualified. The extended range neutron flux alarm is actuated when the designated flux-multiplication setpoint is reached. No credit is taken for other available functions in these modes to provide a signal or alarm to the plant operator (e.g. source range neutron flux).

The boron dilution analysis was performed to ensure that the operator action time from a flux-multiplication signal to complete loss of shutdown margin is greater than 15 minutes. The event was analyzed for all operating modes except those modes where administrative controls prohibit dilution. As described in the STP Updated Final Safety Analysis Report (UFSAR) Chapter 15.4.6, the boron dilution event is not postulated in MODE 5 with RCS loops not filled and in MODE 6 because administrative controls are used to isolate sources of unborated water and preclude the event.

TS 3.3.1, "Reactor Trip Instrumentation", Table 3.3-1, Item 7 governs the boron dilution mitigation function of the extended range neutron flux monitoring instrumentation. ACTION 5 prescribes the action required for one inoperable channel:

> With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, suspend all operations involving positive reactivity changes. Plant temperature changes or boron dilution is allowed provided the change is accounted for in the calculated SHUTDOWN MARGIN.

TS 3.3.1 has no action for more than one inoperable channel. Consequently, TS 3.0.3 would apply for this condition in MODE 3 or MODE 4. There is no applicable TS action for MODE 5 and the application of the current ACTION 5 for a condition where both flux monitoring channels are inoperable is nonconservative. STPNOC outage planning personnel identified this discrepancy and its resolution is being tracked in the STP Corrective Action Program.

The extended range neutron flux monitors are also governed by TS 3.3.3.5, "Remote Shutdown", and TS 3.3.3.6, "Accident Monitoring Instrumentation". The action requirements of these TS are described in the table below for information and completeness. The STP TS Bases clarifies the application of the TS to the extended range neutron flux functions:

> The Extended Range, Neutron Flux instrumentation denoted in LCO 3.3.1, Item 7 in Tables 3.3-1 and 4.3-1 is referring to the Gamma-Metrics Shutdown Monitors. The circuitry consists of hardware/software components which are unique to the Shutdown Monitor itself, such as the flux multiplication alarm contacts; as well as hardware which is shared with the Remote Shutdown (LCO 3.3.3.5) and the Accident Monitoring (LCO 3.3.3.6) QDPS Extended range, Neutron Flux instrumentation. Inoperability of the Shutdown Monitors does not affect the Operability of the QDPS Extended Range instrumentation except for reasons of common mode failure. Conversely, inoperability of the QDPS Extended Range instrumentation should be evaluated for common mode failure with respect to the Shutdown Monitor to verify OPERABILITY of the Shutdown Monitor. (CR 97-908-8)

STPNOC is not proposing to change the requirements of the Remote Shutdown or Accident Monitoring TS in this amendment request.

Applicable TS	MODE	Requirement	Comment
3.3.3.5 Remote Shutdown	1, 2, 3	With one or more required channels inoperable, restore the inoperable Function(s) to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.	Least restrictive TS requirement that applies to the subject instrumentation
3.3.3.6, Accident Monitoring	1, 2, 3	With one channel inoperable, "...restore one inoperable	Imposes most restrictive requirement for one

Instrumentation (ACTION 36)		channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours."	inoperable channel in MODE 3.
		With two channels inoperable, "...restore at least one channel to OPERABLE status within 48 hours, or be in HOT SHUTDOWN within the next 12 hours."	Provides an action for two inoperable channels in MODE 3, but is superseded by the TS 3.0.3 applicability in TS 3.3.1.

Although there is no TS 3.3.1 action for two inoperable channels, STP's procedures for reactivity management and for nuclear instrument malfunction adequately address the condition where the extended range neutron flux monitoring function is lost. The procedures require the suspension of positive reactivity changes, boron sampling, and isolation of sources of unborated water. These actions are consistent with the design and licensing basis described in UFSAR 15.4.6 for MODE 5 with RCS loops not filled and MODE 6, which preclude a condition where a boron dilution event could occur by isolating the sources of unborated water. Based on the UFSAR design basis and the existing procedure requirements, STPNOC proposes the revised ACTION 5 shown in Section 2.0 and discussed in more detail below.

ACTION 5.a for one inoperable channel of the flux monitor includes a new completion time of 72 hours to restore the inoperable channel to OPERABLE status. The completion time is consistent with the completion time required in NUREG-1431, LCO 3.9.9, ACTION A. The 72 hour Completion Time is based on the extended range flux monitor's shutdown monitoring function and is consistent with other TS Completion Times for loss of one redundant train. In this condition, the remaining extended range neutron flux monitoring channel is adequate to provide protection. The remaining OPERABLE channel provides continuous indication of core power status to the operator and has the required alarm function.

NUREG-1431 includes a note that provides for temperature changes provided the change is accounted for in the calculated SHUTDOWN MARGIN. STP's current TS also allow boron dilutions provided the change is accounted for in the calculated SHUTDOWN MARGIN. The redundant extended range channel provides protection in this condition and STPNOC proposes no change to existing TS allowance.

ACTION 5.b is a new requirement to address the condition both channels of extended range neutron flux monitoring instrumentation being inoperable. The TS did not previously have an action for this condition. It requires at least one channel to be restored to OPERABLE status within 1 hour or apply the requirements of ACTIONs 5.b.1, 5.b.2, and 5.b.3. The required completion time of 1 hour is consistent with NUREG-1431, LCO 3.9.9, ACTION B.

ACTION 5.b.1 requires the suspension of all operations involving positive reactivity changes and is consistent with the requirement in ACTION 5.a. The loss of function for the neutron flux extended range monitor results in the potential for a reactivity change that could challenge the

operators' ability to identify a loss of required shutdown margin and this action restricts operations that could challenge the shutdown margin.

The action allows temperature changes once the boron dilution pathways are isolated and the operators have confirmed the reactor coolant system (RCS) boron concentration is acceptable, provided the change is accounted for in the calculated SHUTDOWN MARGIN. This is acceptable because the verification of acceptable boron concentration and isolation of the unborated water sources puts the plant in a condition that is consistent with the UFSAR boron dilution analysis. Allowing the temperature changes eliminates operational limitations that could other needlessly restrict cooldown or other plant evolutions. Consistent with the existing Bases for ACTION 5, control rod withdrawal is not allowed. Because the dilution pathways are required to be isolated and the flux monitoring function is lost, unlike the allowance in proposed ACTION 5.a, boron dilution is not permitted, This allowance is consistent with the note in NUREG-1431, LCO 3.9.9, ACTION B.

ACTION 5.b.2 requires initiation of action to isolate sources of unborated water from the reactor coolant system. Completion of this action establishes a condition that administratively precludes the potential for a boron dilution, consistent with the design basis in the STP Updated Final Safety Analysis Report (UFSAR). NUREG-1431, LCO 3.9.9, ACTION B establishes a 1 hour completion time for this activity. The STP proposed action to "immediately initiate action" is consistent with TS 3.4.1.4.2 ACTION c for the condition in MODE 5 with RCS loops not filled where a valve or joint used to isolate unborated water sources is not secured in the closed position. When the required action of 5.b.1 is taken to suspend positive reactivity changes, the potential for on-going boron dilution is minimal. The proposed action will achieve the desired result of prompt operator action to isolate the dilution pathways.

ACTION 5.b.3 requires verifying Shutdown Margin is within limits specified in the COLR within 4 hours and once per 12 hours thereafter. Due to the potential of having diluted the boron concentration of the reactor coolant, verification of the Shutdown Margin must be performed to demonstrate that the required boron concentration exists. The Completion Time of 4 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration and the conditional 12 hour surveillance provides assurance that the required shutdown margin is maintained. NUREG-1431 LCO 3.9.9, ACTION B provides a 1 hour completion time for the initial determination of the boron concentration. However, STPNOC proposes to apply the 4 hour completion time consistent with current TS 3.4.1.4.2. ACTION c which specifies the required action for a condition where a valve or mechanical joint used to isolate unborated water sources is not secured in the closed position with the unit in cold shutdown with loops not filled. The proposed 12 hour frequency for the continued verification of boron concentration is consistent with the requirements of NUREG-1431.

As noted earlier, the current TS would require the application of TS 3.0.3. Application of TS 3.0.3 for a condition where the extended range flux monitoring function is lost in MODE 3 would require the unit be in MODE 4 within 6 hours and in MODE 5 within the next 24 hours. Once the unit was in MODE 5, there would be no TS requirement for the condition. Application of TS 3.0.3 is not an appropriate response to the condition because the shutdown and cooldown actions are not effective compensatory actions for loss of the extended range neutron flux

monitoring function and TS 3.3.1 still applies for the affected function in MODE 5 where the existing action is not adequate. Therefore, the proposed action to modify ACTION 5 to add appropriate compensatory action for loss of the monitoring function is considered a nuclear safety improvement over the current TS required action to apply TS 3.0.3.

The proposed change to TS 3.4.1.4.2 is fundamentally an administrative change that makes the TS 3.4.1.4.2 consistent with the wording of proposed TS ACTION 5.b.3. The current TS 3.4.1.4.2 ACTION c requirement to verify the boron concentration is within limits specified in the COLR is imprecise because the COLR specifies SHUTDOWN MARGIN based on RCS critical boron concentration, but does not specify boron concentration limits. The lack of precision does not result in an inadequate TS or inadequate response should ACTION c be applied because boron concentration will be determined to assure that the required SHUTDOWN MARGIN is maintained in accordance with the assumptions in the COLR. Revising the wording of the action makes the requirement more precise and consistent with the requirements of proposed ACTION 5.b.3.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The shutdown monitor function of the extended range neutron flux monitor required by TS 3.3.1 meets Criterion 3 of 10CFR50.36 (c)(2)(ii) as a system that is part of the primary success path and functions to mitigate a design basis transient that presents a challenge to the integrity of a fission product barrier. The proposed change provides additional assurance that appropriate remedial action required by 10CFR50.36(c)(2) will be taken for a loss of the mitigative function.

Section 15.4.6 of the Standard Review Plan lists the regulatory criteria below.

A. General Design Criterion 10, as it relates to the reactor coolant system being designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during normal operations including anticipated operational occurrences.
B. General Design Criterion 15, as it relates to the reactor coolant system and its associated auxiliaries being designed with appropriate margin to assure that the pressure boundary will not be breached during normal operations including anticipated operational occurrences.
C. General Design Criterion 26, as it relates to the reliable control of reactivity changes to assure that specified acceptable fuel design limits are not exceeded, including anticipated operational occurrences. This is accomplished by assuring that appropriate margin for malfunctions, such as stuck rods, are accounted for.

The proposed change does not change the function of the extended range neutron flux monitor. It provides additional assurance that unavailability of shutdown monitor function required by TS 3.3.1 is addressed by appropriate remedial action and reduces the potential for a challenge to a fission product barrier.

The proposed change to TS 3.4.1.4.2 is an editorial clarification that does not affect the regulatory basis.

Based upon the considerations discussed above:

- There is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner;
- Such activities will be conducted in compliance with the Commission's regulations; and
- Issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

4.2 Precedent

As described in the evaluation above, precedent is established in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants".

4.3 Significant Hazards Consideration

STP has evaluated whether a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

   Response:

   No. The extended range neutron flux monitoring instrumentation that is the subject of the proposed change performs a monitoring function and of itself has no potential as an accident initiator. The proposed requirement for the condition where both channels of the function are inoperable establishes actions that preserve the design basis where no actions previously existed. This is a more restrictive change and thus does not increase the probability or consequences of an accident previously evaluated.

   The proposed change to TS 3.4.1.4.2 ACTION c. clarification regarding the verification of shutdown margin does not result in any technical change in the way the TS ACTION is applied. Therefore this proposed change does not increase the probability or consequences of an accident previously evaluated.

   The proposed change includes formatting changes that are administrative and consequently have no effect on accident analyses.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response:

   No. The proposed changes do not involve any physical alteration of plant equipment and does not change the method by which any safety-related structure, system, or component performs its function or is tested. As such, no new or different types of equipment will be installed, and the basic operation of installed equipment is unchanged. The methods governing plant operation and testing remain consistent with current safety analysis assumptions.

   The proposed change includes formatting changes that are administrative and consequently have no effect on accident analyses.

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

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

   Response:

   No. The proposed changes do not negate any existing requirement, and does not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analysis. The purpose of the proposed change is to provide greater assurance that the design basis is maintained. There are no changes being made to safety analysis assumptions, safety limits or safety system settings that would adversely affect plant safety as a result of the proposed change.

   The proposed change includes formatting changes that are administrative and consequently have no effect on accident analyses.

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

Based on the above, STP concludes that the proposed amendment 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.

4.4 Conclusions

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

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment 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 amendment.

6.0 REFERENCES

1. STP UFSAR Section 15.4.6
2. NUREG -1431, Revision 3 "Standard Technical Specifications – Westinghouse Plants"

ENCLOSURE, ATTACHMENT 1

Technical Specification Page Markups

NO CHANGES THIS PAGE
FOR INFORMATION AND COMPLETENESS.

TABLE 3.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
1. Manual Reactor Trip	2	1	2	1, 2	1
	2	1	2	3*, 4*, 5*	10
2. Power Range, Neutron Flux					
a. High Setpoint	4	2	3	1, 2	2
b. Low Setpoint	4	2	3	1###, 2	2
3. Power Range, Neutron Flux High Positive Rate	4	2	3	1, 2	2
4. Deleted					
5. Intermediate Range, Neutron Flux	2	1	2	1###, 2	3
6. Source Range, Neutron Flux					
a. Startup	2	1	2	2##	4
b. Shutdown	2	1	2	3*, 4*, 5*	10
c.					
7. Extended Range, Neutron Flux	2	0	2	3, 4, 5	5
8. Overtemperature ΔT	4	2	3	1, 2	6
9. Overpower ΔT	4	2	3	1, 2	6
10. Pressurizer Pressure -- Low (Interlocked with P-7)	4	2	3	1	6
11. Pressurizer Pressure—High	4	2	3	1, 2	6
12. Pressurizer Water Level--High (Interlocked with P-7)	4	2	3	1	6

TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

ACTION 3 - With the number of channels OPERABLE one less than the Minimum Channels OPERABLE requirement and with the THERMAL POWER level:

a. Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 Setpoint, and

b. Above the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint but below 10% of RATED THERMAL POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 10% of RATED THERMAL POWER.

ACTION 4 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, suspend all operations involving positive reactivity changes. Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SHUTDOWN MARGIN.

ACTION 5 - a. With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 72 hours,or suspend all operations involving positive reactivity changes.

Note: Plant temperature changes or boron dilution is allowed provided the change is accounted for in the calculated SHUTDOWN MARGIN.

b. With the number of OPERABLE channels two less than the Minimum Channels OPERABLE requirement, restore at least one channel to OPERABLE status within 1 hour, or

1. Suspend all operations involving positive reactivity changes, and

Note: Operations involving plant temperature changes may proceed provided the change is accounted for in the calculated SHUTDOWN MARGIN when ACTION 5.b.2 is completed and reactor coolant system boron concentration has been verified to be within required limits.

2. Immediately initiate action to secure each valve or mechanical joint used to isolate unborated water sources from the reactor coolant system, and

3. Within 4 hours and once per 12 hours thereafter, verify SHUTDOWN MARGIN is within limits specified in the COLR.

ACTION 6 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. For Functional Units with installed bypass test capability, the inoperable channel may be placed in bypass, and must be placed in the tripped condition within 72 hours.

Note: A channel may be bypassed for up to 12 hours for surveillance testing per Specification 4.3.1.1, provided no more than one channel is in bypass at any time.

b. For Functional Units with no installed bypass test capability,

1. The inoperable channel is placed in the tripped condition within 72 hours, and

2. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 12 hours for surveillance testing of other channels per Specification 4.3.1.1.

COLD SHUTDOWN - LOOPS NOT FILLED

LIMITING CONDITION FOR OPERATION

3.4.1.4.2

a. At least two residual heat removal (RHR) loops shall be OPERABLE* and at least one RHR loop shall be in operation.**, and

b. Each valve or mechanical joint used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.

b. With no RHR loop in operation, suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet SHUTDOWN MARGIN of LCO 3.1.1 and immediately initiate corrective action to return the required RHR loop to operation.

c. With a valve or mechanical joint used to isolate unborated water sources not secured in the closed position, immediately suspend all operations that would cause introduction into the RCS of coolant with boron concentration less than required to meet the SHUTDOWN MARGIN specified in the Core Operating Limit Report (COLR) and initiate action to secure the valve(s) or joint(s) in the closed position and within 4 hours verify ~~boron concentration~~ the SHUTDOWN MARGIN is within limits specified in the COLR. The required action to verify the ~~boron concentration~~SHUTDOWN MARGIN is within limits must be completed whenever ACTION c is entered. A separate ACTION entry is allowed for each unsecured valve or mechanical joint.

SURVEILLANCE REQUIREMENTS

4.4.1.4.2.1 At least one RHR loop shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

4.4.1.4.2.2 Each valve or mechanical joint used to isolate unborated water sources shall be verified closed and secured in position at least once per 31 days.

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*Two RHR loops may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE and in operation.

**The RHR pump may be deenergized for up to 1 hour provided: (1) no operations are permitted that would cause introduction into the RCS of coolant with boron concentration less than that required to meet SHUTDOWN MARGIN of LCO 3.1.1, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

ENCLOSURE, ATTACHMENT 2

Technical Specification Bases Page Insert

Technical Specification Bases Inserts (For Information)

Following approval of the proposed amendment, the TS Bases for ACTION 5 will be revised to include the following:

ACTION 5.a addresses the condition for loss of one channel of extended range neutron flux monitor and provides 72 hours to restore the inoperable channel. In this condition, the second channel provides the monitoring function. The action requires suspending positive reactivity changes with the exception that reactivity changes from temperature changes or boron dilution be accounted for in the calculated SHUTDOWN MARGIN. Control rod withdrawal is not permitted.

ACTION 5.b addresses the condition two inoperable channels of extended range neutron flux monitoring instrumentation. In this condition, the UFSAR design basis that the flux multiplication alarm provided by the extended range neutron flux monitor will give the operator 15 minutes to respond to a loss of shutdown margin is not valid since the flux monitor design function is lost.

ACTION 5.b.1 requires the suspension of all operations involving positive reactivity changes and is consistent with the requirement in ACTION 5.a. The loss of function for the neutron flux extended range monitor results in the potential for a reactivity change that could challenge the operators' ability to identify a loss of required shutdown margin and this action restricts operations that could challenge the shutdown margin. The action allows temperature changes once the boron dilution pathways are isolated and the operators have confirmed the reactor coolant system (RCS) boron concentration is acceptable. Control rod withdrawal is not allowed.

ACTION 5.b.2 requires initiation of action to isolate sources of unborated water from the reactor coolant system. Completion of this action establishes a condition that administratively precludes the potential for a boron dilution, consistent with the design basis in the STP Updated Final Safety Analysis Report (UFSAR).

ACTION 5.b.3 requires verifying the Shutdown Margin is within limits specified in the COLR within 4 hours and once each 12 hours thereafter. Due to the potential of having diluted the boron concentration of the reactor coolant, verification of Shutdown Margin must be performed to demonstrate that the required boron concentration exists. The Completion Time of 4 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration. The 12 hour surveillance assures the required shutdown margin is maintained.