

June 13, 2007

Mr. James J. Sheppard
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS
RE: CHANGES TO TECHNICAL SPECIFICATION 3.3.3.6, "ACCIDENT
MONITORING INSTRUMENTATION" (TAC NOS. MD0934 AND MD0935)

Dear Mr. Sheppard:

The Commission has issued the enclosed Amendment No. 177 to Facility Operating License No. NPF-76 and Amendment No. 164 to Facility Operating License No. NPF-80 for the South Texas Project, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 30, 2006 (NOC-AE-05001914), as supplemented by letters dated October 2, 2006 (NOC-AE-06002060), February 26, 2007 (NOC-AE-07002104), and April 19, 2007 (NOC-AE-07002145).

The amendments revise TS 3.3.3.6, "Accident Monitoring Instrumentation," with respect to the required action for inoperable wide-range reactor coolant temperature, wide-range steam generator water level, and auxiliary feedwater flow instruments.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Jack Donohew, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures: 1. Amendment No. 177 to NPF-76
2. Amendment No. 164 to NPF-80
3. Safety Evaluation

cc w/encls: See next page

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South Texas Project, Units 1 & 2

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March 2007

South Texas Project, Units 1 & 2

-2-

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March 2007

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 177
License No. NPF-76

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio (CPS), AEP Texas Central Company, and the City of Austin, Texas (COA) (the licensees), dated March 30, 2006, as supplemented by letters dated October 2, 2006, and February 26 and April 19, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

*STP Nuclear Operating Company is authorized to act for Texas Genco, LP, the City Public Service Board of San Antonio, AEP Texas Central Company, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications and Paragraph 2.C.(2) of Facility Operating License No. NPF-76 as indicated in the attachment to this license amendment.
3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas G. Hiltz, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License No. NPF-76
and the Technical Specifications

Date of Issuance: June 13, 2007

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164
License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by STP Nuclear Operating Company* acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio (CPS), AEP Texas Central Company, and the City of Austin, Texas (COA) (the licensees), dated March 30, 2006, as supplemented by letters dated October 2, 2006, and February 26 and April 19, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

*STP Nuclear Operating Company is authorized to act for Texas Genco, LP, the City Public Service Board of San Antonio, AEP Texas Central Company, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications and Paragraph 2.C.(2) of Facility Operating License No. NPF-80 as indicated in the attachment to this license amendment.
3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas G. Hiltz, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility
Operating License No. NPF-80
and the Technical Specifications

Date of Issuance: June 13, 2007

ATTACHMENT TO LICENSE AMENDMENT NOS. 177 AND 164

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

DOCKET NOS. 50-498 AND 50-499

Replace the following pages of the Facility Operating Licenses, Nos. NPF-76 and NPF-80, and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating Licenses

REMOVE

INSERT

Unit 1

-4-

-4-

Unit 2

-4-

-4-

Technical Specifications

REMOVE

INSERT

3/4 3-68

3/4 3-68

3/4 3-70

3/4 3-70

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 177, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Not Used(4) Initial Startup Test Program (Section 14, SER)*

Any changes to the Initial Test Program described in Section 14 of the Final Safety Analysis Report made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Safety Parameter Display System (Section 18, SSER No. 4)*

Before startup after the first refueling outage, HL&P[**] shall perform the necessary activities, provide acceptable responses, and implement all proposed corrective actions related to issues as described in Section 18.2 of SER Supplement 4.

(6) Supplementary Containment Purge Isolation (Section 11.5, SSER No. 4)

HL&P shall provide, prior to startup from the first refueling outage, control room indication of the normal and supplemental containment purge sample line isolation valve position.

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

** The original licensee authorized to possess, use and operate the facility was HL&P. Consequently, historical references to certain obligations of HL&P remain in the license conditions.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 164, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. STPNOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Not Used

(4) Initial Startup Test Program (Section 14, SR)*

Any changes to the Initial Test Program described in Section 14 of the Final Safety Analysis Report made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) License Transfer

Texas Genco, LP shall provide decommissioning funding assurance, to be held in decommissioning trusts for the South Texas Project, Unit 2 (Unit 2) upon the direct transfer of the Unit 2 license to Texas Genco, LP, in an amount equal to or greater than the balance in the Unit 2 decommissioning trust immediately prior to the transfer. In addition, Texas Genco, LP shall ensure that all contractual arrangements referred to in the application for approval of the transfer of the Unit 2 license to Texas Genco, LP to obtain necessary decommissioning funds for Unit 2 through a non-bypassable charge are executed and will be maintained until the decommissioning trusts are fully funded, or shall ensure that other mechanisms that provide equivalent assurance of decommissioning funding in accordance with the Commission's regulations are maintained.

(6) License Transfer

The master decommissioning trust agreement for Unit 2, at the time the direct transfer of Unit 2 to Texas Genco, LP is effected and thereafter, is subject to the following:

* The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 177 AND 164 TO

FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNITS 1 AND 2

DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

By application dated March 30, 2006, as supplemented by letters dated October 2, 2006, and February 26 and April 19, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML061000283, ML062830032, ML070610369, and ML07xxxxxx⁽¹⁾ respectively), STP Nuclear Operating Company (the licensee) requested changes to the Technical Specifications (TSs) for South Texas Project (STP), Units 1 and 2. The proposed changes to the TSs would revise TS 3.3.3.6, "Accident Monitoring Instrumentation," with respect to the required action for inoperable wide-range reactor coolant temperature, wide-range steam generator (SG) water level, and auxiliary feedwater flow (AFW-Flow) instruments.

The supplemental letters dated October 2, 2006, and February 26 and April 19, 2007, provided additional clarifying information, which did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 6, 2006 (71 FR 32608). The supplemental letters dated October 2, 2006, and April 19, 2007, revised the proposed changes to the TS 3.3.3.6, such that the new proposed changes are either (1) more restrictive than the proposed changes in the licensee's application dated March 30, 2006, or (2) clarify proposed changes in the licensee's application dated March 30, 2006, without reducing the requirements in those proposed changes.

2.0 REGULATORY EVALUATION

In Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36), the Commission established its regulatory requirements related to the content of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements; (4) design

(1) At this time, the licensee's letter is not in ADAMS.

features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TSs.

As stated in 10 CFR 50.36(c)(2)(i), the "[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications ..." The remedial actions in the TSs are specified in terms of LCO conditions, required actions, and completion times (CTs), or allowed outage times (AOTs), to complete the required actions. When an LCO is not being met, the CTs specified in the TSs are the times allowed in the TSs for completing the specified required actions. The conditions and required actions specified in the TSs must be acceptable remedial actions for the LCO not being met, and the CTs must be a reasonable time for completing the required actions while maintaining the safe operation of the plant.

Regulatory Guide (RG) 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," provides an acceptable method for complying with the Nuclear Regulatory Commission's (NRC's) regulations to provide instrumentation to monitor plant variables and systems during and following an accident. Appendix 7b, "South Texas Project Compliance With Regulatory Guide 1.97, Revision 2," of the Updated Final Safety Analysis Report (UFSAR) for STP, Units 1 and 2, shows how the licensee meets Revision 2 of RG 1.97 dated December 1980. This appendix is not being changed by this amendment request and, therefore, the licensee is not changing the manner in which it meets the RG.

NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 3.1, dated December 1, 2005, provides the NRC-endorsed standard for the improved TSs for Westinghouse plants, such as STP, Units 1 and 2, which includes the suggested standard for accident monitoring instrumentation in TS 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," including the remedial action for when the LCO, which requires the instrumentation to be operable, is not met. Although, the licensee has not adopted the improved TSs for STP, Units 1 and 2, NUREG-1431 still provides suggested requirements to be considered for Westinghouse plants.

3.0 TECHNICAL EVALUATION

By its application and supplemental letters, the licensee proposed the following changes to TS Table 3.3-10, "Accident Monitoring Instrumentation," of TS 3.3.3.6:

1. Revise the total number of required channels to be operable for Instrument 2, "Reactor Coolant Outlet Temperature- T_{HOT} (Wide Range)," and Instrument 3, "Reactor Coolant Inlet Temperature- T_{COLD} (Wide Range)" from "1/loop" to "4(1/loop)."
2. Revise the total number of required channels to be operable for Instrument 8, "Steam Generator Water Level - Wide Range," and Instrument 11, "Auxiliary Feedwater Flow," from "1/steam generator" to "4 (1/steam generator)."

3. Revise the minimum number of channels required to be operable for Instruments 2 and 3 from "1/loop" to "4."
4. Revise the minimum number of channels required to be operable for Instruments 8 and 11 from "1/steam generator" to "4."
5. Revise required Action 35 for inoperable accident monitoring instrumentation channels. The current Action 35 states:

With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours, or be in at least in HOT SHUTDOWN within the next 12 hours.

and the proposed Action 35 (the underlined text below shows the text proposed to be added to the current Action 35) states:

- a. With the number of OPERABLE channels one less than the Minimum Channels Operable requirement, restore the inoperable channel to OPERABLE status within 30 days or submit a Special Report within the next 14 days describing the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrument channels of the Function to OPERABLE status.
 - b. With the number of OPERABLE channels two or more less than the Minimum Channels Operable requirement, restore one or more of the inoperable channels such that at least three channels are in OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.
6. Delete the required Action 38, which reads as follows:
 - ACTION 38 - a. With the number of OPERABLE channels one less than the Total Number of Channels requirements, restore the inoperable channel to OPERABLE status within 90 days, or be in at least HOT SHUTDOWN within the next 12 hours.
 - b. With the number of OPERABLE channels two less than the Total Number of Channels requirements, restore the inoperable channel to OPERABLE status within 31 days, or be at least HOT SHUTDOWN within the next 12 hours.
 - c. With the number of OPERABLE channels three less than the Total Number of Channels requirement, restore at least one inoperable channel to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.

- d. With the number of OPERABLE channels less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

As shown in TS Table 3.3-10, Action 35 applies to only Instruments 2, 3, 8, and 11 and Action 38 does not apply to any of the instruments listed in Table 3.3-10. LCO 3.3.3.6 requires that the accident monitoring instrumentation shown in TS Table 3.3-10 be operable (i.e., the total number of channels are required to be operable) and the actions specified in the table are for the condition when there are inoperable channels (i.e., the number of operable channels are less than either the total number of channels or minimum number of channels).

3.1 Changes to Number of Channels Listed in TS Table 3.3-10

This license amendment request is addressing the following accident monitoring instrument channels listed in TS Table 3.3-10:

1. Instrument 2, the wide range reactor coolant outlet temperature- T_{HOT} (RCO- T_{HOT} -WR),
2. Instrument 3, the wide range reactor coolant inlet temperature- T_{COLD} (RCI- T_{COLD} -WR),
3. Instrument 8, the wide range steam generator water level (SG-Level-WR), and
4. Instrument 11, the auxiliary feedwater flow (AFW-Flow).

For this instrumentation, the licensee stated in its application that there is one channel for each of the four reactor coolant system (RCS) loops for Instruments 2 and 3, and one channel for each of the four SGs for Instruments 8 and 11. The STP, Units 1 and 2, both have four RCS loops and four SGs, and have only one train of AFW for each SG.

The licensee is neither adding nor removing channels from any of the above instrumentation. This amendment does not change the number of channels required to be operable, but does change the terminology for listing the number of channels required to be operable in Table 3.3-10. The licensee is proposing the following:

1. For Instruments 2 and 3, in the columns entitled "Total No. [Number] of Channels" and "Minimum Channels Operable," to go from listing "1/loop" to "4(1/loop)."
2. For Instruments 8 and 11, in the columns entitled "Total No. [Number] of Channels" and "Minimum Channels Operable," to go from listing "1/steam generator" to "4(1/steam generator)."

In its supplemental letter, the licensee stated that the proposed changes for the above four instruments are an administrative enhancement to the TSs to clarify that there are four channels required to be operable for the instruments instead of listing the number in terms of how many channels per RCS loop, or per SG.

The licensee has not identified any changes to their commitment to RG 1.97 for these instruments and has proposed changes to TS Table 3.3-10 that do not change any requirements related to these instrument channels. The proposed changes simply clarify that there are four channels for Instruments 2, 3, 8, and 11 instead of only stating "1/[RCS] loop" or "1/steam generator."

Because these administrative changes do not change any requirements on these instruments and serve only to clarify that the number of instrument channels for Instruments 2, 3, 8, and 11 of Table 3.3-10 required to be operable is four, the NRC staff concludes that these changes are acceptable and meet 10 CFR Part 50.36.

3.2 Proposed Changes to Actions in TS Table 3.3-10

LCO 3.3.3.6 requires that the accident monitoring instrumentation channels shown in TS Table 3.3-10 shall be operable. The actions specified in the table are the remedial action of 10 CFR 50.36 that specifies the actions to be taken when the number of operable channels is less than either the number of channels specified in the "Total No. of Channels" column or the "Minimum Channels Operable" column. The existing Actions 35 through 43 are listed at the end of TS Table 3.3-10, and each instrument listed in the table has a corresponding action specified in the column entitled "Action" on the right-hand side of the table. Action 35 is listed for Instruments 2, 3, 8, and 11; however, Action 38 is not listed for any instrument in the table.

3.2.1 Proposed Deletion of Action 38

The licensee stated that no instrument listed in Table 3.3-10 has referenced Action 38 and, therefore, the proposed deletion of Action 38 is an administrative change to remove an unneeded action from the TSs. The NRC staff agrees that Action 38 does not apply to any instrument listed in TS Table 3.3-10 and is, therefore, not needed. Because remedial actions listed in the TSs are actions to be taken by the licensee when LCOs are not met and Action 38 does not apply to instrumentation covered by LCO 3.3.3.6, the NRC staff concludes that the deletion of Action 38 is acceptable and meets 10 CFR 50.36.

3.2.2 Proposed Change to Action 35

The current Action 35 for Instruments 2, 3, 8, and 11 states, "With the number of OPERABLE channels one less than the Minimum Channels Operable requirement, restore at least one inoperable channel to OPERABLE status within 48 hours, or be in at least in HOT SHUTDOWN within the next 12 hours."

The licensee stated that the 48-hour AOT of existing Action 35 is unnecessarily restrictive for these instrument functions specifically, when each affected function has sufficient redundancy and functional diversity to justify a less restrictive alternative action.

The proposed Action 35-a, which addresses the AOT with the number of operable channels one less than the minimum channels operable requirement in TS Table 3.3-10, would instead require restoration of the inoperable channel "to OPERABLE status within 30 days, or submit a Special Report within the next 14 days describing the preplanned alternate method of

monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.”

The proposed Action 35-b, which addresses the AOT with the number of operable channels two or more less than the minimum channels operable requirement in TS Table 3.3-10, would require restoration of one inoperable channel “to OPERABLE status within 7 days, or be in at least HOT SHUTDOWN within the next 12 hours.”

The existing Actions 39, 40, 41, and 42 for the containment - high range radiation monitor, SG blowdown radiation monitor, reactor vessel water level, and core exit thermocouples instruments have already been updated to incorporate the AOT proposed for Action 35-a.

NUREG-1431 is the NRC-endorsed standard of the improved TSs for Westinghouse plants and, as such, is an example of TSs acceptable to the NRC staff that plant TSs may be compared to in considering changes to the plant TSs. In the TS Bases for NUREG-1431, the NRC staff states that the selection of 30 days, when one or more instrument functions with one required channel inoperable, and 7 days, when one or more instrument functions with two or more required channels are inoperable, is based on industry operating experience and diversity provided by other channels, the passive nature of the instrument, and the low probability of an event requiring PAM instrumentation during this interval.

The licensee’s proposed Actions 35-a and 35-b parallel the remedial actions for LCO 3.3.3 in NUREG-1431 for (1) one or more instrument functions with one required channel inoperable and (2) one or more instrument functions with two required channels inoperable, respectively. The Condition C for LCO 3.3.3 of one or more instrument functions with “two required channels inoperable” is for a two-loop plant and, thus, is applicable to the proposed Action 35-b of “two or more inoperable channels” because STP, Units 1 and 2, are four-loop plants (i.e., there are four RCS loops).

The licensee stated that the instrumentation involved in this amendment is used by the control room operators to verify the effectiveness of RCS and secondary heat removal, and provide no control or protective function. Although Instruments 2 and 3 are input to the cold overpressure mitigation system (COMS), the COMS is not operable in Modes 1, 2, and 3 where the accident monitoring instrumentation is required to be operable.

The licensee addressed the redundancy and functional diversity of Instruments 2, 3, 8, and 11 in the following manner:

1. For the RCO-T_{HOT}-WR channels, system redundancy is provided by having a channel for each RCS loop. Functional diversity for determination of core cooling identified in UFSAR Table 7B.5-1 is provided by core exit temperature, reactor vessel water level, and RCS sub-cooling. Functional redundancy for determination of secondary heat sink is provided by steam generator water level, AFW flow, and core exit temperature.
2. For the RCI-T_{COLD}-WR channels, system redundancy is provided by having a channel for each RCS loop. Functional diversity for determination of secondary heat sink core cooling identified in UFSAR Table 7B.5-1 includes steam generator water level, AFW-Flow, and core exit temperature.

3. For the SG-Level-WR channels, system redundancy of this function is provided by having four instruments, one for each steam generator. Functional diversity for heat sink availability (for determination of core cooling) identified in UFSAR Table 7B.5-1 is provided by Narrow Range Steam Generator Level, AFW-Flow, core exit temperature, and wide range RCS temperature.
4. For the AFW-Flow channels, the licensee stated that one train of AFW feeding an intact SG is adequate for post-accident decay heat removal. In addition, manual cross-connection capability from the control room allows any AFW train to feed any SG. A diverse indication for AFW-Flow is provided by wide-range SG water level. The accident analyses do not credit automatic AFW-Flow control. Also, loss of AFW-Flow indication does not affect the ability of the operator to manually start and operate the AFW pumps. Indications of AFW-Flow will be evidenced by control board indication of the running AFW pumps, regulator valve position, and by SG water level.

Based on statements by the licensee, the NRC staff concludes that Instruments 2, 3, 8, and 11 meet the criteria given in the TS 3.3.3 Bases of NUREG-1431 for the remedial action AOTs of 30 and 7 days. Thus, the proposed Actions 35-a and 35-b are considered appropriate for Instruments 2, 3, 8, and 11 in the TSs. Therefore, based on the passive nature of the instruments in Modes 1, 2, and 3 (no automatic action in an accident), and the redundancy and functional diversity of instruments cited above, the NRC staff concludes that the proposed Actions 35-a and 35-b are acceptable as remedial actions for Instruments 2, 3, 8, and 11 in Table 3.3-10 in Modes 1, 2, and 3.

Also, in considering the longer AOT that would be allowed by the proposed Action 35, the NRC staff considered the possible effects of the above instrument channels being out of service on the performance of the control room operators. In doing this, UFSAR Chapter 15, "Accident Analyses," was reviewed to determine which analyses-credited operator actions could be impacted by inoperable RCO-T_{HOT}-WR, RCI-T_{COLD}-WR, SG-Level-WR, and AFW-Flow instruments. Based on the UFSAR, the licensee's application and supplemental letters, and information obtained in conference calls with the licensee, which clarified the licensee's letters, the NRC staff assessed the impact on each of the credited actions if one channel of each of the PAM instruments was inoperable. It is important to note that the proposed TS change applies only to the indications for T_{HOT}-WR, T_{COLD}-WR, SG-Level-WR, and AFW-Flow; there are no automatic safety or automatic control functions performed by these instruments. Based on the information provided by the licensee, each of these instruments is discussed below.

RCO-T_{HOT}-WR and RCI-T_{COLD}-WR

These instruments may be used by plant operators to:

1. Verify adequate core cooling.
2. Verify RCS subcooling.
3. Verify the effectiveness of RCS heat removal by the secondary system.
4. Determine if safety injection flow can be reduced.

However, for each of these instrument functions, RCO-T_{HOT}-WR and RCI-T_{COLD}-WR serve as back-up indications. The primary indications used by control room operators are the following: narrow-range T_{HOT} and T_{COLD}, core exit thermocouples (in conjunction with RCS pressure for RCS subcooling), SG narrow-range water level (SG-Level-NR), feedwater/AFW-Flow, and reactor vessel water level.

The functions which uniquely use either RCO-T_{HOT}-WR or RCI-T_{COLD}-WR include the following:

1. Determine residual heat removal system initiation.
2. Monitor plant cooldown and ensure the proper relationship between RCS pressure and temperature.
3. RCI-T_{COLD}-WR is monitored during operator-initiated SG depressurization.

For these functions, even if one loop of RCO-T_{HOT}-WR and/or RCI-T_{COLD}-WR were inoperable and one loop was affected by an event (e.g., a loop-specific event such as SG tube rupture, main steamline break, etc.), there would still be two loops of instrumentation available. The RCO-T_{HOT}-WR and RCI-T_{COLD}-WR do provide control inputs for the COMS; however, this function would not be affected by the proposed TS change for PAM, since the PAM TS only applies in Modes 1, 2, and 3, whereas the COMS is not required to be operable by the TSs, and may not be in service.

SG-Level-WR Instrument

This instrumentation may be used by control room operators to verify the availability of the secondary heat sink for decay-heat removal. However, for this function, SG-Level-WR is a backup indication, as plant operators in the main control room use SG-Level-NR to verify the heat sink in the emergency operating procedures.

Should a complete loss of secondary heat sink occur (as indicated by low feedwater/AFW-Flow to all four SGs and low SG-Level-NR in all four SGs), SG-Level-WR is one indicator uniquely used to determine if RCS feed and bleed should be initiated. However, a complete loss of secondary heat sink is a beyond-design-basis event, and no operator action for initiating RCS feed and bleed is credited in the UFSAR. If a complete loss of secondary heat sink is postulated to occur, however, only three loops of SG-Level-WR instrumentation are needed to determine whether to initiate RCS feed and bleed; therefore, this function could still be performed if one SG-Level-WR instrument were inoperable. An instance where one inoperable SG-Level-WR could have an impact on determining RCS feed and bleed, is a complete loss of secondary heat sink plus a loop-specific event (e.g., SG tube rupture, main steamline break), well beyond the design basis for STP, Units 1 and 2.

AFW-Flow Instrument

Unlike the previous instrumentation discussed, AFW-Flow is used by plant operators as a primary indication for determining the adequacy of the secondary heat sink. However, AFW-Flow to a single SG or adequate SG-Level-NR in a single SG is sufficient for operators to identify an adequate heat sink. Even if one loop of AFW-Flow were inoperable, and one loop

was affected by an event (e.g., a loop-specific event such as SG tube rupture, main steamline break, etc.), there would still be two loops of AFW-Flow instrumentation available. AFW-Flow is used by control room operators in accident classification, to determine the appropriate emergency action level. However, only one loop of operable AFW-Flow is required.

There was one accident sequence with credited operator actions in the UFSAR that could be affected by a single inoperable AFW-Flow instrument channel: loss of normal feedwater. As described in the UFSAR, this event assumes a loss of normal feedwater coincident with a loss of offsite power and a failure of one train of emergency safety features actuation logic that results in the automatic start of only two AFW pumps. For this accident sequence, the licensee has established a performance standard of preventing the pressurizer from going water-solid and the standard requires operator action to manually start a third AFW pump within 15 minutes following the reactor trip. The NRC staff was concerned that an inoperable AFW-Flow instrument channel could impact the ability of plant operators to manually start the associated AFW pump within 15 minutes. In its supplemental letter dated February 26, 2007, in response to an NRC staff request for additional information, the licensee provided the following information regarding the manual start of an AFW pump with an inoperable AFW-Flow instrument channel, under the loss of normal feedwater event described in the UFSAR:

1. Plant operators would manually start the third AFW pump, even if the AFW-Flow indicator was inoperable.
2. Plant operators would rely on alternate indications to verify that the AFW pump was successfully started and delivering AFW-Flow, including AFW pump on/off indicating lights, AFW regulating valve position, and the affect of AFW-Flow on SG-Level-NR. All of these alternate indications are safety grade and powered from safety grade electrical supplies. The licensee stated that these alternate indications will be listed and their use described in the TS bases document for TS 3.3.3.6 to enhance the TS Bases, and the NRC staff does not disagree with this addition to the TS Bases. These alternate indications are the licensee's preplanned alternate method of monitoring AFW-Flow, in accordance with the special report describing preplanned alternate method of monitoring in the proposed Action 35-a, should one channel of AFW-Flow be inoperable for longer than 30 days.
3. Adequate procedural guidance exists for responding to the loss of normal feedwater event presented in the UFSAR, including starting an AFW pump without flow indication. As requested by the NRC staff, the licensee provided the applicable plant procedures in its supplemental letter dated February 26, 2007.
4. Operators will be briefed on the use of the alternate indications for AFW-Flow, if their use is required.
5. Operators are trained to start an AFW pump without indication of AFW-Flow, if required.
6. For the loss of normal feedwater event presented in the UFSAR, operators will continue to be able to meet the 15-minute required action time to start a third AFW pump, even if that pump's AFW-Flow instrument is inoperable, and, therefore, an inoperable AFW-Flow instrument channel will not affect operator response time.

The NRC staff reviewed the above information in combination with the plant procedures that will be used during the loss of normal feedwater event described in the UFSAR. From the review of plant procedures, it should be noted that with one AFW-Flow instrument inoperable, plant operators could always choose to start an AFW pump that has an operable flow instrument. Based upon these reviews, the NRC staff has determined that it is appropriate to continue to give credit to the operator action to manually start a third AFW pump within 15 minutes of this event, even if this will require operators to manually start an AFW pump without AFW-Flow indication.

It should be noted that the AFW-Flow instrument does supply a control signal to the associated AFW regulating valve, to automatically position the flow control valve between preset values of minimum and maximum flow. However, as clarified by the licensee, the proposed amendment will apply to the indication of AFW-Flow only, and other compensatory actions would be taken by plant operators, should the AFW-Flow control function be affected.

Safe Unit Shutdown from the Auxiliary Shutdown Panel

The previous assessment and analysis pertained to operating and monitoring the plant from the main control room. If temporary evacuation of the main control room is required, plant operators can monitor and establish safe shutdown from auxiliary shutdown panels. When operating from the auxiliary shutdown panels, the following instruments discussed above will not be available:

1. SG-Level-NR
2. Core exit thermocouples
3. Narrow-range T_{HOT} and T_{COLD}
4. Reactor vessel water level
5. T_{HOT} -WR

Therefore, from the auxiliary shutdown panels, operators will have to rely on the following PAM instruments that are the subject of the proposed TS change: RCO- T_{COLD} -WR, SG-Level-WR, and AFW-Flow. However, given the four channels of each of these instruments (one channel per RCS loop or one per SG, and each channel has an indication on the auxiliary shutdown panel), even if one loop of instrumentation were inoperable, and one loop or SG is affected by an event (e.g., a loop-specific event such as SG tube rupture, main steamline break, etc.), there would still be two loops of instrumentation available. Therefore, the control room operators would still be able to monitor and establish safe shutdown from the auxiliary shutdown panels.

From the main control room, in most cases, alternate indications are primarily used, and in the remaining cases, including operations from the auxiliary shutdown panels, the four instruments per PAM function (one per RCS loop or one per SG) provide adequate redundancy, even if one RCS loop of instrumentation was inoperable, and one RCS loop or SG is affected by an event. For the loss of normal feedwater event described in the UFSAR, the NRC staff has determined that it is appropriate to continue to credit the operator action to manually start a third AFW

pump within 15 minutes of this event, even if this will require operators to manually start an AFW pump without AFW-Flow indication. Therefore, although the proposed TS change could result in an increased possibility that one set of the affected PAM instruments would be out of service, the proposed TS change is acceptable with regards to human performance.

Based on its review of the proposed Action 35 from the passive nature of the instruments in Modes 1, 2, and 3 (no automatic action in an accident), and the redundancy and functional diversity of instruments, and the effect on control room operators responding to accidents, the NRC staff concludes that the proposed Action 35 is acceptable remedial action for not meeting LCO 3.3.3.6, and meets 10 CFR 50.36.

3.3 Conclusion

The proposed changes to the total number of channels and minimum channels operable for RCO-T_{HOT}-WR, RCI-T_{COLD}-WR, SG-Level-WR, and AFW-Flow clarify that there are four channels and these four channels are required to be operable. This clarification is consistent with the system design. The deletion of Action 38 from TS Table 3.3-10 is administrative because no instruments in Table 3.3-10 refer to this action. The proposed changes to Action 35 in TS Table 3.3-10, are consistent with NUREG-1431, similar to other actions in Table 3.3-10, are for PAM instruments that are passive in nature and of sufficient redundancy and diversity, and do not adversely affect the actions of control room operators in responding to accidents. These proposed changes are addressed with the NRC staff's conclusions in Sections 3.1 and 3.2 above of this safety evaluation.

Based on the NRC staff's conclusions in Sections 3.1 and 3.2 of this safety evaluation that the proposed TS changes are acceptable and meet 10 CFR 50.36, the NRC staff further concludes that the proposed amendment is acceptable.

The licensee identified changes to the TS Bases for this amendment in Attachment 3 to its application and supplemental letter dated October 2, 2006, and in its response to question 5 in its supplemental letter dated February 26, 2007. Changes to the TS Bases are controlled by TS 6.8.3.m, "Technical Specification (TS) Bases Control Program," and are not approved by the NRC staff. The NRC staff has no disagreement with the changes identified by the licensee.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding

(71 FR 32608, published June 6, 2006). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

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

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