



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 27, 2011

Vice President, Operations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT
RE: CONDENSATE STORAGE TANK LEVEL-LOW SETPOINT CHANGE (TAC
NO. M5032)

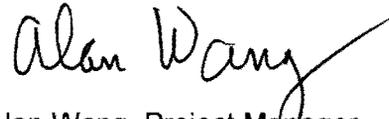
Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 185 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1 (GGNS). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 8, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103140580).

The amendment revises the GGNS TSs to be consistent with the NRC-approved Technical Specifications Task Force (TSTF) change traveler TSTF-493, "Clarify Application of Setpoint Methodology for LSSS [Limiting Safety System Setting] Functions," Revision 4, Option A. Under Option A, two surveillance notes are added to TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.d, "Condensate Storage Tank Level - Low," and to TS Table 3.3.5.2-1, "Reactor Core Isolation Cooling System Instrumentation," Function 3, "Condensate Storage Tank Level - Low," for the suction swap from the condensate storage tank (CST) to the suppression pool function for the high pressure core spray and reactor core isolation cooling function, respectively. Specifically, surveillance notes would be added to surveillance requirements that require verifying trip setpoint setting values (i.e., channel calibration and trip unit calibration). The amendment completes a commitment made by the licensee to address an unresolved issue associated with TS Amendment No. 181 for the CST level-low setpoint change approved by the NRC in its letter dated February 25, 2009 (ADAMS Accession No. ML090290209).

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,

A handwritten signature in black ink that reads "Alan Wang". The signature is written in a cursive style with a long, sweeping tail on the "g".

Alan Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures:

1. Amendment No. 185 to NPF-29
2. Safety Evaluation

cc w/encls: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY OPERATIONS, INC.
SYSTEM ENERGY RESOURCES, INC.
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
ENTERGY MISSISSIPPI, INC.
DOCKET NO. 50-416
GRAND GULF NUCLEAR STATION, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 185
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee), dated November 8, 2010, 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, 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 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.

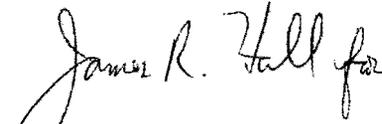
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 185 are hereby incorporated in the license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-29 and the
Technical Specifications

Date of Issuance: April 27, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Facility Operating License No. NPF-29 and the 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 License

<u>Remove</u>	<u>Insert</u>
-4-	-4-

Technical Specifications

<u>Remove</u>	<u>Insert</u>
3.3-41	3.3-41
3.3-47	3.3-47

(b) SERI is required to notify the NRC in writing prior to any change in (i) the terms or conditions of any new or existing sale or lease agreements executed as part of the above authorized financial transactions, (ii) the GGNS Unit 1 operating agreement, (iii) the existing property insurance coverage for GGNS Unit 1 that would materially alter the representations and conditions set forth in the Staff's Safety Evaluation Report dated December 19, 1988 attached to Amendment No. 54. In addition, SERI is required to notify the NRC of any action by a lessor or other successor in interest to SERI that may have an effect on the operation of the facility.

C. The license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Entergy Operations, Inc. is authorized to operate the facility at reactor core power levels not in excess of 3898 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 185 are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

The Surveillance Requirements (SRs) for Diesel Generator 12 contained in the Technical Specifications and listed below, are not required to be performed immediately upon implementation of Amendment No. 169. The SRs listed below shall be successfully demonstrated at the next regularly scheduled performance.

SR 3.8.1.9,
SR 3.8.1.10, and
SR 3.8.1.14

Amendment No. 185

Table 3.3.5.1-1 (page 3 of 5)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
3. High Pressure Core Spray (HPCS) System					
a. Reactor Vessel Water Level — Low Level, Level 2	1, 2, 3, 4(a), 5(a)	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -43.8 inches
b. Drywell Pressure — High	1, 2, 3	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.44 psig
c. Reactor Vessel Water Level — High, Level 8	1, 2, 3, 4(a), 5(a)	2	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 55.7 inches
d. Condensate Storage Tank Level — Low	1, 2, 3, 4(c), 5(c)	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 (d)(e) SR 3.3.5.1.5 (d)(e) SR 3.3.5.1.6	≥ 4.7 ft
e. Suppression Pool Water Level — High	1, 2, 3	2	D	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 7.0 inches
f. HPCS Pump Discharge Pressure — High (Bypass)	1, 2, 3, 4(a), 5(a)	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 108 psig and ≤ 1282 psig
g. HPCS System Flow Rate — Low (Bypass)	1, 2, 3, 4(a), 5(a)	1	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 1124 gpm and ≤ 1327 gpm
h. Manual Initiation	1, 2, 3, 4(a), 5(a)	1	C	SR 3.3.5.1.6	NA

(continued)

- (a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2, ECCS-Shutdown.
- (b) Also required to initiate the associated diesel generator.
- (c) When HPCS is OPERABLE for compliance with LCO 3.5.2, "ECCS — Shutdown," and aligned to the condensate storage tank while tank water level is not within the limit of SR 3.5.2.2.
- (d) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
- (e) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and the as-left tolerances are specified in the Technical Requirements Manual.

Table 3.3.5.2-1 (page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Reactor Vessel Water Level — Low Low, Level 2	4	B	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.3 SR 3.3.5.2.4 SR 3.3.5.2.5	≥ -43.8 inches
2. Reactor Vessel Water Level — High, Level 8	2	C	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.4 SR 3.3.5.2.5	≤ 55.7 inches
3. Condensate Storage Tank Level — Low	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.4 (a)(b) SR 3.3.5.2.5	≥ 3.7 ft
4. Suppression Pool Water Level — High	2	D	SR 3.3.5.2.1 SR 3.3.5.2.2 SR 3.3.5.2.4 SR 3.3.5.2.5	≤ 7.0 inches
5. Manual Initiation	1	C	SR 3.3.5.2.5	NA

- (a) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.
- (b) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and the as-left tolerances are specified in the Technical Requirements Manual.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 185 TO

FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated November 8, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML103140580), Entergy Operations Inc. (Entergy), the licensee, proposed to revise Grand Gulf Nuclear Station, Unit 1 (GGNS), Technical Specifications (TSs) and Operating License to implement Technical Specification Task Force Traveler (TSTF) change traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS [Limiting Safety System Settings] Functions," for the condensate storage tank (CST) low level setpoint. The proposed change is in response to a commitment made by GGNS, as referenced in the U.S. Nuclear Regulatory Commission's (NRC's) safety evaluation dated February 25, 2009 (ADAMS Accession No. ML090290209), approving the revised CST low level allowable value (AV) setpoint for the high pressure core spray (HPCS) and reactor core isolation cooling (RCIC) suction swap from the CST to the suppression pool. The proposed amendment requests TS changes in accordance with TSTF-493, Revision 4. This safety evaluation addresses the proposed addition of surveillance notes in accordance with Option A of TSTF-493, Revision 4, to address instrumentation limiting condition for operation (LCO) issues that could occur during periodic testing and calibration of CST low level instrumentation.

The proposed change will resolve operability determination issues associated with potentially non-conservative TS AVs¹ calculated using some methods in the industry standard ISA-S67.04-1994, Part 2, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation"^[2]. The concern is that when these values are used to assess instrument channel performance during testing, non-conservative decisions about the

¹ The instrument setting "Allowable Value" is a limiting value of an instrument's as-found trip setting used during surveillances. The AV is more conservative than the Analytical Limit (AL) to account for applicable instrument measurement errors consistent with the plant-specific setpoint methodology. If, during testing, the actual instrumentation setting is less conservative than the AV, the channel is declared inoperable and actions must be taken consistent with the TS requirements.

² Instrument Society of America, 67 Alexander Drive, Research Triangle Park, NC 20779.

equipment operability may result. In addition, the proposed change will resolve operability determination issues related to relying on AVs associated with TS limiting safety system settings (LSSSs) to ensure that TSs requirements, not plant procedures, will be used for assessing instrument channel operability.

The suction swap from the CST to the suppression pool for HPCS and RCIC are functions related to variables that have a significant safety function as defined in Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.36(c)(1)(ii)(A).

The proposed change would revise the GGNS TSs to be consistent with the NRC-approved TSTF-493, Revision 4, Option A. Under Option A, two surveillance notes will be added to TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.d, "Condensate Storage Tank Level – Low," and to TS Table 3.3.5.2-1, "Reactor Core Isolation Cooling System Instrumentation," Function 3, "Condensate Storage Tank Level - Low," for the suction swap from the CST to the suppression pool function for the HPCS and RCIC function, respectively. Specifically, surveillance notes would be added to the TS surveillance requirements (SRs) that require verifying trip setpoint setting values (i.e., channel calibration and trip unit calibration).

2.0 REGULATORY EVALUATION

Plant protective systems are designed to initiate reactor trips (scrams) or other protective actions before selected unit parameters exceed analytical limits (ALs) assumed in the safety analysis in order to prevent violation of the reactor core safety limits (SLs) and reactor coolant system (RCS) pressure SL from postulated anticipated operational occurrences (AOOs) and to assist the engineered safety features systems in mitigating accidents. The reactor core SLs and RCS pressure SL ensure that the integrity of the reactor core and RCS is maintained. The design criteria for instrumentation addressed in this evaluation are outlined below.

GGNS's Updated Final Safety Analysis Report (UFSAR) Section 7.1.2.1, "Design Bases," states, in part, that

Design bases and criteria for instrumentation and control equipment design are based on the need to have the system perform its intended function while meeting the requirements of applicable general design criteria, regulatory guides, industry standards, and other documents.

The regulations in 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 13, "Instrumentation and control," state that

Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.

The regulations in 10 CFR Part 50, Appendix A, GDC 20, "Protection system functions," state that

The protection system shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.

The Commission's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36, "Technical specifications." The regulations in 10 CFR 50.36 requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The regulation requires, in part, that the TSs include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) LCOs; (3) SRs; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in TSs.

Instrumentation required by the TSs has been designed to assure that the applicable safety analysis limits will not be exceeded during accidents and AOOs. This is achieved by specifying nominal trip setpoints (NTSPs), including testing requirements to assure the necessary quality of systems, in terms of parameters directly monitored by the applicable instrumentation systems for LSSSs, as well as specifying LCOs on other plant parameters and equipment in accordance with 10 CFR 50.36(c)(2).

The regulations in 10 CFR 50.36(c)(1)(i)(A) state, in part, that

Safety limits for nuclear reactors are limits upon important process variables that are found to be necessary to reasonably protect the integrity of certain of the physical barriers that guard against the uncontrolled release of radioactivity.

The regulations in 10 CFR 50.36(c)(1)(ii)(A) state, in part, that

Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions. Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded. If, during operation, it is determined that the automatic safety system does not function as required, the licensee shall take appropriate action, which may include shutting down the reactor.

The regulations in 10 CFR 50.36(c)(2), "Limiting conditions for operations," state, in part, that

Limiting 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 until the condition can be met.

The regulations in 10 CFR 50.36(c)(3), "Surveillance requirements," state that

Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The regulations in 10 CFR 50.36(c)(5), "Administrative controls," state, in part, that

Administrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner.

In addition to the regulatory requirements stated above, the NRC staff also considered the previously approved guidance in NUREG-1434, "Standard Technical Specifications, General Electric Plants, BWR/6," Revision 3, June 2004 (ADAMS Accession No. ML041910204), and NRC Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Instrumentation," Revision 3, December 1999 (ADAMS Accession No. ML993560062), for determining the acceptability of revising instrumentation TS requirements. RG 1.105, Revision 3, describes a method acceptable to the NRC staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. The regulatory guide endorses Part 1 of ISA-S67.04-1994, "Setpoints for Nuclear Safety-Related Instrumentation," subject to NRC staff clarifications. The ISA standard provides a basis for establishing setpoints for nuclear instrumentation for safety systems and addresses known contributing errors in the channel. Part 1 establishes a framework for ensuring that setpoints for nuclear safety-related instrumentation are established and maintained within specified limits.

In NRC Regulatory Issue Summary (RIS) 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' regarding Limiting Safety System Settings during Periodic Testing and Calibration of Instrument Channels," dated August 24, 2006 (ADAMS Accession No. ML051810077), the NRC addresses requirements on LSSSs that are assessed during the periodic testing and calibration of instrumentation. RIS 2006-17 discusses issues that could occur during the testing of LSSSs and that, therefore, may have an adverse effect on equipment operability.

TSTF-493, "Clarify Application of Setpoint Methodology for LSSS Functions," Revision 4, dated January 5, 2010 (ADAMS Accession No. ML100600064), and an errata sheet, "Transmittal of TSTF-493, Revision 4, Errata," dated April 23, 2010 (ADAMS Accession No. ML101160026), clarify the application of setpoint methodology. The NRC approved TSTF-493, Revision 4, on May 11, 2010 (ADAMS Accession No. ML102601920).

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes to TS Tables 3.3.5.1-1 and 3.3.5.2-1

In its letter November 8, 2010, the licensee proposed adding two surveillance notes, designated as notes (d) and (e) in TS Table 3.3.5.1-1, Function 3.d, "Condensate Storage Tank Level - Low," for SRs 3.3.5.1.3 and 3.3.5.1.5, and designated as notes (a) and (b) in TS Table 3.3.5.2-1, Function 3, "Condensate Storage Tank Level – Low," for SR 3.3.5.2.4. The proposed surveillance notes would state,

Surveillance Note 1

If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

Surveillance Note 2

The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and the as-left tolerances are specified in the Technical Requirements Manual.

3.2 Background

3.2.1 Nominal Trip Setpoints

The licensee added the term "Nominal Trip Setpoint" as the terminology for the setpoint value calculated by means of the plant-specific setpoint methodology documented in the Technical Requirements Manual (TRM).

The licensee stated that the NTSP is more conservative than the AV and is the least conservative value to which the instrument channel is adjusted following surveillance testing. The NTSP is the limiting setting for the channel trip setpoint considering all credible instrument errors associated with the instrument channel. The trip setpoint is the NTSP with margin added. The trip setpoint is more conservative than the NTSP. The NTSP is the least conservative value (with an as-left tolerance (ALT)) to which the channel must be reset at the conclusion of periodic testing to ensure that the ALs will not be exceeded during an AOO or accident before the next periodic surveillance or calibration. It is impossible to set a physical instrument channel to an exact value, so a calibration tolerance is established around the NTSP. Therefore, the NTSP adjustment is considered successful if the instrument trip setpoint is within the ALT (i.e., a range of values around the NTSP).

The AVs are included in the TSs to indicate the least conservative value that the as-found trip point may have during testing for the channel to be operable. The allowable values listed in the TS satisfy the 10 CFR 50.36 requirements that the LSSS be in the TSs. Additionally, to ensure proper use of the AV, trip setpoint, and NTSP, the methodology for calculating the as-left and as-found tolerances is specified in the TRM which is incorporated by reference in the UFSAR and listed in Surveillance Note 2 as discussed in Section 3.2.2 of this safety evaluation.

3.2.2 Addition of Surveillance Notes to TS Functions

Setpoint calculations calculate an NTSP based on the AL of the safety analysis to ensure that trips or protective actions will occur prior to exceeding the process parameter value assumed by the safety analysis calculations. These setpoint calculations may also calculate an allowable limit of change to be expected (i.e., the AFT) between performance of the surveillance tests for assessing the value of the setpoint setting. The least conservative as-found instrument setting value that a channel can have during calibration without requiring performance of a TS remedial action is the setpoint AV. Discovering an instrument setting to be less conservative than the setpoint AV indicates that there may not be sufficient margin between the NTSP setting and the AL. TS channel calibrations are performed to verify channels are operating within the assumptions of the setpoint methodology used to calculate the NTSP and that channel settings have not exceeded the TS AVs. When the measured as-found setpoint is non-conservative with respect to the AV, the channel is inoperable and the actions identified in the TSs must be taken.

Surveillance Note 1 states,

If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

This Note requires evaluation of channel performance for the condition where the as-found setting for the channel setpoint is outside its AFT, but conservative with respect to the AV. Evaluation of channel performance will verify that the channel will continue to function in accordance with safety analysis assumptions and the channel performance assumptions in the GGNS setpoint methodology and establishes a high confidence of acceptable channel performance in the future. Because the AFT allows for both conservative and non-conservative deviation from the NTSP, changes in channel performance that are conservative with respect to the NTSP will also be detected and evaluated for possible effects on expected performance. The purpose of the assessment is to ensure confidence in the channel performance prior to returning the channel to service. For channels determined to be OPERABLE but degraded, after returning the channel to service, the channels will be evaluated under the GGNS Corrective Action Program. Entry into the Corrective Action Program will ensure required review and documentation of the condition to establish a reasonable expectation for continued operability.

Verifying that a trip setting is conservative with respect to the AV when a surveillance is performed does not by itself verify the instrument channel will operate properly in the future because setpoint drift is a concern. Although the channel was operable during the previous surveillance interval, if it is discovered that channel performance is outside the performance predicted by the plant setpoint calculations for the test interval, then the design basis for the

channel may not be met, and proper operation of the channel for a future demand cannot be assured. Surveillance Note 1 formalizes the establishment of the appropriate AFT for each channel. This AFT is applied about the NTSP or about any other more conservative trip setpoint. The as-found setting tolerance ensures that channel operation is consistent with the assumptions or design inputs used in the setpoint calculations and establishes a high confidence of acceptable channel performance in the future. Because the setting tolerance allows for both conservative and non-conservative deviation from the NTSP, changes in channel performance that are conservative with respect to the NTSP will also be detected and evaluated for possible effects on expected performance.

Implementation of Surveillance Note 1 requires the licensee to calculate an AFT. The licensee calculated the AFT using the Square Root of the Sum of the Squares method, and non-conservative bias errors are added algebraically.

Surveillance Note 2 states:

The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm channel performance. The NTSP and the methodologies used to determine the as-found and the as-left tolerances are specified in the Technical Requirements Manual.

Surveillance Note 2 requires that the as-left setting for the channel be returned to within the ALT of the NTSP. Where a setpoint more conservative than the NTSP is used in the plant surveillance procedures, the ALT and AFT, as applicable, will be applied to the surveillance procedure setpoint. This will ensure that sufficient margin to the SL and AL is maintained. If the as-left channel setting cannot be returned to a setting within the ALT of the NTSP, then the channel would be declared inoperable. Surveillance Note 2 also requires that the NTSP and the methodologies for calculating the ALT and the AFT be included in the TRM.

To implement Surveillance Note 2, the ALT for some instrumentation Function channels is established to ensure that realistic values are used that do not mask instrument performance. The licensee stated that setpoint calculations assume that the instrument setpoint is left at the NTSP within a specific ALT (e.g., 25 pounds per square inch gauge (psig) + 2 psig). A tolerance is necessary because it is not possible to read and adjust a setting to an absolute value due to the readability and/or accuracy of the test instruments or the ability to adjust potentiometers. The licensee stated that the ALT is normally as small as possible considering the tools and the objective to meet an as-low-as-reasonably-achievable calibration setting of the instruments. The ALT is considered in the setpoint calculation. Failure to set the actual plant trip setpoint to the NTSP and within the ALT would invalidate the assumptions in the setpoint calculation because any subsequent instrument drift would not start from the expected as-left setpoint.

3.3 NRC Staff Evaluation

3.3.1 Addition of Surveillance Notes to TS Functions

The proposed TS change will add the appropriate notes as specified in TSTF-493, Revision 4, Option A, to the SRs associated with TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," Function 3.d, "Condensate Storage Tank Level - Low," and to TS Table 3.3.5.2-1, "Reactor Core Isolation Cooling System Instrumentation," Function 3, "Condensate Storage Tank Level - Low." The proposed wording for the notes is consistent with TSTF-493, Revision 4, Option A. The licensee stated that the determination to include surveillance notes for specific Functions in these TS Tables is based on these functions being automatic protective devices related to variables having significant safety functions as delineated by 10 CFR 50.36(c)(1)(ii)(A). Furthermore, the licensee stated that if during calibration testing the setpoint is found to be conservative with respect to the AV but outside its predefined AFT band, then the channel shall be brought back to within its predefined calibration tolerance before returning the channel to service. The calibration tolerances are specified in the TRM. Changes to the values will be controlled by 10 CFR 50.59. The licensee has applied surveillance notes to the CST low level suction swap from the CST to the suppression pool for HPCS and RCIC in Tables 3.3.5.1-1 and 3.3.5.2-1.

The proposed surveillance notes will ensure instrument operability will be maintained and that uncertainties will be included in the AFT calculations in an acceptable manner. By establishing the TS requirements in the surveillance notes, the licensee will ensure that there will be a reasonable expectation that these instruments will perform their safety function, if required. Therefore, the NRC staff concludes that the addition of the notes is acceptable. The NRC staff further concludes that the proposed TS changes are acceptable since they meet the requirements of 10 CFR 50.36(c)(3) in that the SRs will ensure that the necessary quality of systems are maintained, that the facility will be maintained within SLs, and the LCOs will continue to be met.

The licensee identified changes to be made to the TS Bases that are associated with the TSs that are being changed in Attachment 4 to its application dated November 8, 2010. The NRC does not approve these changes. The means for changes to the TS Bases are provided in TS 5.5.11, "Technical Specifications (TS) Bases Control Program." However, the NRC has reviewed the identified changes to the TS Bases for this amendment and does not have any comments with regard to these changes.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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. Accordingly, the amendment 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: there is reasonable assurance that (1) the health and safety of the public will not be endangered by operation in the proposed manner, and (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.

Principal Contributors: K. Bucholtz
S. Mazumdar

Date: April 27, 2011

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/

Alan Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures:

1. Amendment No. 185 to NPF-29
2. Safety Evaluation

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ADAMS Accession No. ML110730402

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