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GNRO-2007/00016

March 1, 2007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: License Amendment Request
Condensate Storage Tank Level-Low Setpoint Change
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for Grand Gulf Nuclear Station, Unit 1 (GGNS). A non-conservative error was discovered in the Condensate Storage Tank Level-Low instrument setpoints and associated allowable values. The setpoints have been corrected and administratively controlled in accordance with Administrative Letter 98-10 "Dispositioning of Technical Specifications That Are Insufficient To Assure Plant Safety." This Technical Specification (TS) change incorporates the corrected allowable values in TS Tables 3.3.5.1-1 and 3.3.5.2-1.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards consideration. The bases for these determinations are included in the attached submittal.

Although this request is neither exigent nor emergency, your prompt review is requested. Once approved, the amendment shall be implemented within 60 days.

The proposed change does not include any new commitments.

If you have any questions or require additional information, please contact Bill Brice at 601-368-5076.

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I declare under penalty of perjury that the foregoing is true and correct. Executed on March 1, 2007.

Sincerely,



WRB/MLC/amt

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)
3. Changes to Technical Specification Bases Pages – For Information Only

cc: NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

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Attachment 1

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Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-29 for Grand Gulf Nuclear Station, Unit 1 .

The proposed change would revise Technical Specification (TS) Tables 3.3.5.1-1 and 3.3.5.2-1 to modify the allowable values of the High Pressure Core Spray (HPCS) and Reactor Core Isolation Cooling (RCIC) low Condensate Storage Tank (CST) level suction swap setpoints allowable values. The change is necessary to correct an error in the original plant design. The error, under certain conditions, could have prevented a swap of the HPCS and RCIC suction flow paths to the Suppression Pool. The non-conservative setpoints are being controlled administratively to a higher level. This is consistent with the guidance given in Administrative Letter 98-10 "Dispositioning of Technical Specifications That Are Insufficient To Assure Plant Safety."

2.0 PROPOSED CHANGE

Entergy proposes to revise TS Tables 3.3.5.1-1 and 3.3.5.2-1 to revise the allowable values of the High Pressure Core Spray (HPCS) and Reactor Core Isolation Cooling (RCIC) low Condensate Storage Tank (CST) suction swap level setpoints. Specifically, the allowable value for HPCS low level setpoint specified in Table 3.3.5.1-1 will be changed from ≥ -3 inches to ≥ 4.7 ft. and the allowable value for RCIC low level set point specified in Table 3.3.5.2-1 will be changed from ≥ -3 inches to ≥ 3.7 ft.

The TS Bases were updated to clarify when it is appropriate to use the CST as the HPCS suction path. They were also updated to identify the CST volume available when the CST level is at 18 ft. A change to the Bases was made that informs the user that the current low level setpoint allowable values are non-conservative for certain postulated events and that more conservative setpoints requirements are established by the Technical Requirements Manual and plant procedures. This information will be deleted upon approval of this TS change. The Bases changes are included in Attachment 3 for information only.

In summary, the proposed change would revise the Operating License of Grand Gulf Nuclear Station to provide more conservative low water suction swap level setpoints allowable values for the High Pressure Core Spray and Reactor Core Isolation Cooling systems from the Condensate Storage Tank to the Suppression Pool.

3.0 BACKGROUND

The Condensate Storage and Transfer Subsystem is designed to pump and store condensate for the RCIC and the HPCS systems during emergency conditions and for normal testing, maintain the level of condensate in the condenser hotwell, and provide condensate to other plant systems, where required. The CST tank is a stainless steel storage tank with a capacity of 300,000 gallons and is non seismic. The system has no safety related function.

The CST level is normally maintained above 25 feet and has a low level alarm at 22 feet. The CST level-low alarm warns of a low level in the CST which in turn indicates the potential unavailability of an adequate supply of makeup water. The CST also provides makeup water to several other systems. The CST reserves a volume specifically for HPCS and RCIC. This

is accomplished by the use of standpipes inside the CST that ensures that the non-safety systems cannot draw the CST level below 18.9 feet. For further information, see section 9.2.6 of the GGNS Updated Final Safety Evaluation Report (USFAR).

Normally the suction valves between HPCS/RCIC and the CST are open and, upon receiving a HPCS/RCIC initiation signal, water for injection would be taken from the CST. The accident analyses assume that the Suppression Pool is the suction source for HPCS. If the level in the CST drops below the low level suction swap setpoints the respective Suppression Pool suction valve would open and then the CST suction valve would close. This ensures an adequate supply of water for the pumps during accident conditions. Although the CST is the preferred and normal source of water for these systems, it is not a seismic Category 1 structure, and is therefore not credited as a HPCS suction source. Therefore, an automatic safety-grade suction switchover to the Suppression Pool is provided. This suction switchover function is required for an operable HPCS/RCIC system in accordance with the TS.

The CST level-low signals for both HPCS and RCIC are initiated through two transmitters either of which can affect an automatic suction swap. These safety related transmitters are not connected to the CST **via static sensing lines**, but instead are connected to the HPCS/RCIC suction line inside the Auxiliary Building. It was discovered that these transmitters may not have been capable of providing the CST low level trip that would transfer the HPCS/RCIC suction from the CST to the Suppression Pool under all conditions. This is because the transmitters have an uncorrected static head between the transmitters and the top of the safety related portion of the suction pipe. This static head is normally offset by the inverted HPCS/RCIC suction nozzle inside the CST. This would not be the case if a seismic or other event were to occur that resulted in a failure of the non-safety related HPCS/RCIC suction piping. Resetting of the low level suction swap setpoints resolved this issue by raising the minimum water level in the CST above the level of the HPCS/RCIC suction piping. With this change, in the event of a failure of the HPCS/RCIC piping, an automatic swap to the Suppression Pool will occur.

4.0 TECHNICAL ANALYSIS

For plant operations in MODES 1, 2, and 3, the Suppression Pool is the source of water for HPCS and RCIC assumed in the accident analyses. The automatic transfer to the Suppression Pool must be operable when these systems are aligned to the CST. Therefore, the TS do not require a specific volume of water in the CST.

In MODES 4 and 5 (shutdown) (TS 3.5.2), two operable Emergency Core Cooling Systems (ECCS) injection/spray subsystems are required. Operable ECCS are not required once the upper containment cavity is flooded in MODE 5. In MODES 4 and 5, an operable ECCS requires that the suppression pool level be at least 12 ft 8 inches. The Technical Specifications allow HPCS to be considered operable without the Suppression Pool as a suction source provided the system is aligned to the CST, and the CST has at least a level of 18 feet. This could occur due to work on the HPCS Suppression Pool suction valve, or the transfer logic, etc. (i.e., the transfer function is not available). With the transfer function operable, there is no reliance on the CST inventory. With the transfer inoperable and the system aligned to the CST, the suction transfer setpoint is not applicable since the transfer will not occur. Therefore the volume of water available for use by HPCS is not affected by the proposed changes when relying on the CST as the inventory source during shutdown

conditions. Therefore, the proposed changes do not impact the ability of HPCS to perform its function in MODES 4 and 5.

RCIC is credited for coping with a Station Blackout for four hours as required by the station Blackout (SBO) rule. The CST will be used as the suction source. A calculation was done to ensure adequate inventory in the CST for the duration of this event prior to the automatic transfer. This calculation demonstrates that there is a more than adequate reserve volume available to supply the 115,278 gallons required to cope with a 4 hour SBO event. There is no specific volume requirement for the CST other than SBO.

The proposed change is acceptable because the new setpoint levels for the HPCS/RCIC suction swap assure a suction swap in any event that causes a failure in the non safety related portion of the suction piping.

In summary, because the Suppression Pool is the credited source of water (except under very limited circumstances) and because there is adequate water available in the CST to cope with an SBO, raising the low-level automatic transfer set points will have no adverse effect on the design basis of the plant.

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met.

Entergy has determined that the proposed changes do not require any exemptions or relief from regulatory requirements, other than the TS, and do not affect conformance with any General Design Criterion (GDC) differently than described in the Updated Final Safety Analysis Report (UFSAR.) This change adjusts the CST low-level transfer to the Suppression Pool only. Related changes to the UFSAR have already been made.

5.2 No Significant Hazards Consideration

This change raises the setpoint for an automatic swap of the suction for the High Pressure Core Spray System (HPCS) and Reactor Core Isolation Cooling (RCIC) system from the Condensate Storage Tank to the Suppression Pool. This was done to detect a failure of non-safety related piping and to ensure a transfer to the safety related Suppression Pool.

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

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

Response: No.

This change will adjust the setpoint for an automatic swap of the suction for the HPCS and RCIC systems from the Condensate Storage Tank (CST) to the Suppression Pool. The Suppression Pool is the source of water credited in the accident analyses. This transfer is not the initiator of any analyzed accident. The set point adjustment will allow a transfer of the suction to an assured safety related water source earlier in the event and will have no effect on the probability or consequences of an accident previously evaluated.

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.

Transfer of the suction source for HPCS and RCIC will occur sooner as a result of this change. No new operational conditions beyond those currently allowed are introduced. This change is consistent with the safety analyses assumptions and current plant operating practices. This simply corrects the setpoint consistent with the accident analyses and therefore cannot create the possibility of a new or different kind of accident from any previously evaluated accident.

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

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

Response: No.

The proposed change does not reduce safety, but rather allows the transfer from the CST to the Suppression Pool sooner. The Suppression Pool is the source of water credited in the accident analyses. This change is consistent with the safety analyses assumptions and current plant operating practices. No new operational conditions beyond those currently allowed are created by these changes.

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

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

5.3 Environmental Considerations

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 effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility 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.

Attachment 2

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Proposed Technical Specification Changes (mark-up)

ECCS Instrumentation
 3.3.5.1

Table 3.3.5.1-1 (page 2 of 5)
 Emergency Core Cooling System Instrumentation

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS PER FUNCTION | CONDITIONS REFERENCED FROM 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 B | 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 4.7ft |
| 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 SR 3.3.5.1.5 SR 3.3.5.1.6 | ≥ 1 inches |
| 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 ≤ 1232 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 subsystems are required to be OPERABLE per LCD 3.5.2, "ECCS-Shutdown."
- (b) Also required to initiate the associated diesel generator.
- (c) When HPCS is OPERABLE for compliance with LCD 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.

RCIC System Instrumentation
 3.3.5.2

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 0 | 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 SR 3.3.5.2.5 | ± 4 inches <i>3.7 ft</i> |
| 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 |

(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. ~~169~~ 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

Insert New
Amendment
No.

Attachment 3

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**Changes to Technical Specification Bases Pages
For Information Only**

BASES

APPLICABLE
SAFETY ANALYSES,
LCO, and
APPLICABILITY

3.d. Condensate Storage Tank Level—Low (continued)

HPCS injection would be taken from the CST. However, if the water level in the CST falls below a preselected level, first the suppression pool suction valve automatically opens, and then the CST suction valve automatically closes.

This ensures that an adequate supply of makeup water is available to the HPCS pump. To prevent losing suction to the pump, the suction valves are interlocked so that the suppression pool suction valve must be open before the CST suction valve automatically closes. The Function is implicitly assumed in the accident and transient analyses (which take credit for HPCS) since the analyses assume that the HPCS suction source is the suppression pool.

Condensate Storage Tank Level—Low signals are initiated from two level transmitters. The logic is arranged such that either transmitter and associated trip unit can cause the suppression pool suction valve to open and the CST suction valve to close. The Condensate Storage Tank Level—Low Function Allowable Value is high enough to ensure adequate pump suction head while water is being taken from the CST.

Two channels of the Condensate Storage Tank Level—Low Function are only required to be OPERABLE when HPCS is required to be OPERABLE to ensure that no single instrument failure can preclude HPCS swap to suppression pool source. Thus, the Function is required to be OPERABLE in MODES 1, 2, and 3. In MODES 4 and 5, the Function is required to be OPERABLE only when HPCS is required to be OPERABLE to fulfill the requirements of LCO 3.5.2, HPCS is aligned to the CST and the CST water level is not within the limits of SR 3.5.2.2. With CST water level within limits, a sufficient supply of water exists for injection to minimize the consequences of a vessel draindown event. Refer to LCO 3.5.1 and LCO 3.5.2 for HPCS Applicability Bases.

The currently specified allowable value is non-conservative for certain postulated events (e.g., seismic, tornado) that cause a failure of the non-safety related portion of the suction piping. Pending approval of a TS Amendment for a new allowable value, more conservative setpoint requirements are established by the Technical Requirements Manual and plant procedures.

(continued)

BASES

APPLICABLE
SAFETY ANALYSES,
LCO, and
APPLICABILITY

3. Condensate Storage Tank Level—Low (continued)

Allowable Value is set high enough to ensure adequate pump suction head while water is being taken from the CST.

Two channels of Condensate Storage Tank Level—Low Function are available and are required to be OPERABLE when RCIC is required to be OPERABLE to ensure that no single instrument failure can preclude RCIC swap to suppression pool source. Refer to LCO 3.5.3 for RCIC Applicability Bases.

~~The currently specified allowable value is non-conservative for certain postulated events (e.g., seismic, tornado) that cause a failure of the onon safety related portion of the suction piping. Pending approval of a TS Amendment for a new allowable value, more conservative setpoint requirements are established by the Technical Requirements Manual and plant procedures.~~

4. Suppression Pool Water Level—High

Excessively high suppression pool water level could result in the loads on the suppression pool exceeding design values should there be a blowdown of the reactor vessel pressure through the safety/relief valves. Therefore, signals indicating high suppression pool water level are used to transfer the suction source of RCIC from the CST to the suppression pool to eliminate the possibility of RCIC continuing to provide additional water from a source outside primary containment. This function satisfies Criterion 3 of the NRC Policy Statement. To prevent losing suction to the pump, the suction valves are interlocked so that the suppression pool suction valve must be open before the CST suction valve automatically closes.

Suppression pool water level signals are initiated from two level transmitters. The Allowable Value for the Suppression Pool Water Level—High Function is set low enough to ensure that RCIC will be aligned to take suction from the suppression pool before the water level reaches the point at which suppression design loads would be exceeded.

Two channels of Suppression Pool Water Level—High Function are available and are required to be OPERABLE when RCIC is required to be OPERABLE to ensure that no single instrument failure can preclude RCIC swap to suppression pool source. Refer to LCO 3.5.3 for RCIC Applicability Bases.

(continued)