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GNRO-2013/00067

November 8, 2013

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: License Amendment Request
Application for Technical Specification Changes; Technical Specification
Task Force (TSTF) Improved Standard Technical Specification Change
Traveler, TSTF-535, "Revise Shutdown Margin Definition to Address
Advanced Fuel Designs"
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. 29

REFERENCE: Traveler, TSTF-535 Revision 0, "Revise Shutdown Margin Definition
To Address Advanced Fuel Designs"

Dear Sir or Madam:

In accordance with the provisions of Section 50.90 of Title 10 *Code of Federal Regulations* (10 CFR), Entergy Operations, Inc. (Entergy) is submitting a request for an amendment to the Technical Specifications (TS) for Grand Gulf Nuclear Station, Unit 1.

The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68 degrees Fahrenheit (°F) or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs which may be more reactive at shutdown temperatures above 68°F.

Attachment 1 provides a description of the proposed change. Attachment 2 provides the existing TS pages marked up to show the proposed change.

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

This letter contains no new commitments. If you have any questions or require additional information, please contact Mr. Jeffery A. Seiter at (601) 437-2344.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 8, 2013

Sincerely,



KJM/jas

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)
3. Proposed Technical Changes (clean page)

cc: U.S. Nuclear Regulatory Commission
ATTN: Mr. Mark Dapas, (w/2)
Regional Administrator, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

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

U. S. Nuclear Regulatory Commission
ATTN: Mr. Alan Wang, NRR/DORL (w/2)
Mail Stop OWFN 8 B1
Washington, DC 20555-0001

Dr. Mary Currier, M.D., M.P.H
State Health Officer
Mississippi Department of Health
P. O. Box 1700
Jackson, MS 39215-1700

Attachment 1

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Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

The proposed amendment modifies the Technical Specifications (TS) definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68 degrees Fahrenheit (°F) or a higher temperature that represents the most reactive state throughout the operating cycle. This change is needed to address new Boiling Water Reactor (BWR) fuel designs which may be more reactive at shutdown temperatures above 68°F.

The availability of the model safety evaluation for this TS improvement was announced in the *Federal Register* as part of the Consolidated Line Item Improvement Process (CLIIP).

2.0 BACKGROUND

The background for this application is adequately addressed by the U.S. Nuclear Regulatory Commission (NRC) Notice of Availability of Model Safety Evaluation on Technical Specification Improvement to modify the requirements regarding Technical Specifications (TS) definition of "Shutdown Margin" (SDM).

Entergy Operations, Inc. (Entergy) is not proposing any variations or deviations from the TS changes described in the TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," or the applicable parts of the NRC staff's model safety evaluation.

3.0 TECHNICAL ANALYSIS

3.1 Applicability of Published Safety Evaluation

Entergy has reviewed the model safety evaluation as part of the Federal Register Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-535. Entergy has concluded that the justifications presented in the TSTF-535 proposal and the model safety evaluation prepared by the NRC staff are applicable to Grand Gulf Nuclear Station, Unit 1 (GGNS), and therefore justify this amendment for the incorporation of the proposed changes to the GGNS TS.

Entergy is not proposing any variations or deviations from the TS changes described in the TSTF-535, Revision 0, or the NRC staff's model safety evaluation.

3.2 CONCLUSIONS

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the NRC'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.

4.0 REGULATORY SAFETY ANALYSIS

4.1 No Significant Hazards Consideration Determination

Entergy requests adoption of TSTF-535, Revision 0, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," which is an approved change to the standard technical specifications (STS), into the GGNS TS. The proposed amendment modifies the TS definition of "Shutdown Margin" (SDM) to require calculation of the SDM at a reactor moderator temperature of 68°F or a higher temperature that represents the most reactive state throughout the operating cycle.

Entergy 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 Title 10 of the *Code of Federal Regulations* (10 CFR) 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The proposed change revises the definition of SDM. SDM is not an initiator to any accident previously evaluated. Accordingly, the proposed change to the definition of SDM has no effect on the probability of any accident previously evaluated. SDM is an assumption in the analysis of some previously evaluated accidents and inadequate SDM could lead to an increase in consequences for those accidents. However, the proposed change revises the SDM definition to ensure that the correct SDM is determined for all fuel types at all times during the fuel cycle. As a result, the proposed change does not adversely affect the consequences of any 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.

The proposed change revises the definition of SDM. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The change does not alter assumptions made in the safety analysis regarding SDM.

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

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

Response: No.

The proposed change revises the definition of SDM. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The proposed change ensures that the SDM assumed in determining safety limits, limiting safety system settings or limiting conditions for operation is correct for all BWR fuel types at all times during the fuel cycle.

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

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

4.2 Applicable Regulatory Requirements/Criteria

A description of the proposed TS change and its relationship to applicable regulatory requirements was provided in the NRC Notice of Availability of the Model Safety Evaluation.

5.0 ENVIRONMENTAL CONSIDERATION

Entergy has reviewed the environmental evaluation included in the safety evaluation, as part of the CLIIP Notice of Availability of the Model Safety Evaluation. Entergy has concluded that the staff's findings presented in that evaluation are applicable to GGNS and the evaluation is hereby incorporated by reference for this application.

6.0 REFERENCES

1. Technical Specifications Task Force (TSTF) 535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs" Revision 0 Dated February 26, 2013. (Accession Number ML112200436)
2. NRC Model Safety Evaluation, Federal Register dated February 26, 2013. (Accession Number ML12355A772)

Attachment 2

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Proposed Technical Specification Changes (mark-up)

Note, markup deletions identified by strikethrough (~~delete~~) and additions identified by underline (addition).

1.1 Definitions (continued)

Insert:
throughout the operating cycle

SHUTDOWN MARGIN (SDM)

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that:

Insert:
≥ 68°F, corresponding to the most reactive state;

- a. The reactor is xenon free;
- b. The moderator temperature is ~~≥ 68°F~~; and
- c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Attachment 3

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Proposed Technical Specification Changes (clean page)

1.1 Definitions (continued)

SHUTDOWN MARGIN (SDM)	<p>SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that:</p> <ol style="list-style-type: none">The reactor is xenon free;The moderator temperature is $\geq 68^{\circ}\text{F}$, corresponding to the most reactive state; andAll control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	<p>A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.</p>
THERMAL POWER	<p>THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.</p>
