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GNRO-2011/00007

February 23, 2011

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

SUBJECT: Request for Additional Information Regarding
Extended Power Uprate
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

REFERENCES:
1. Email from A. Wang to F. Burford dated January 26, 2011 GGNS EPU Request for Additional Information Related to Fire Protection (ME4679) (Accession Number ML110260287)
2. License Amendment Request, Extended Power Uprate, dated September 8, 2010 (GNRO-2010/00056, Accession Number ML102660403)

Dear Sir or Madam:

The Nuclear Regulatory Commission (NRC) requested additional information (Reference 1) regarding certain aspects of the Grand Gulf Nuclear Station, Unit 1 (GGNS) Extended Power Uprate (EPU) License Amendment Request (LAR) (Reference 2). Attachment 1 provides responses to the additional information related to Fire Protection.

No change is needed to the no significant hazards consideration included in the initial LAR (Reference 2) as a result of the additional information provided. There are no new commitments included in this letter.

If you have any questions or require additional information, please contact Jerry Burford at 601-368-5755.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 23, 2011.

Sincerely,

MAK/FGB/dm

Attachments:
1. Response to Request for Additional Information, Fire Protection

cc: Mr. Elmo E. Collins, Jr.
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U. S. Nuclear Regulatory Commission
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NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

Attachment 1

GNRO-2011/00007

Grand Gulf Nuclear Station Extended Power Uprate

Response to Request for Additional Information

Fire Protection

Response to Request for Additional Information

By letter dated September 8, 2010, Entergy Operations, Inc. (Entergy) submitted a license amendment request (LAR) for an Extended Power Uprate (EPU) for Grand Gulf Nuclear Station, Unit 1 (GGNS). By correspondence dated January 26, 2011 (Accession Number ML110260287), the U.S. Nuclear Regulatory Commission (NRC) staff has determined that the following additional information related to Fire Protection is needed for the NRC staff to complete their review of the amendment. Entergy's response to each item is also provided below.

RAI # 1

The NRC staff notes that license amendment request (LAR), Attachment 5B, to GNRO-2010/00056, "Safety Analysis Report for the Grand Gulf Nuclear Station Constant Pressure Power Uprate," Section 2.5.1.4.1, on page 2-194, states that, "…Any changes in physical plant configuration or combustible loading as a result of modifications to implement the EPU will be evaluated in accordance with the plant modification and FPPs…"

It is unclear to the NRC staff whether there are any fire protection program plant modifications planned (e.g., adding new cable trays, or re-routing of existing cables, or increases in combustible loading affecting fire barrier ratings, or changes to administrative controls) at EPU conditions. Clarify whether this LAR involves plant modifications, or changes to the fire protection program, including any proposed modifications to implement EPU. If any, the NRC staff requests the licensee to identify proposed modifications and discuss the impact of these modifications on the plant's compliance with the fire protection program licensing basis, 10 CFR 50.48, or applicable portions.

Response

The modifications planned to support EPU are listed in Attachment 8 to the License Amendment Request. Several of these plant modifications affect safety-related areas of the plant. These modifications include:

- Increased boron enrichment in the Standby Liquid Control System
- Standby Service Water Cooling Tower Upgrades
- Increase Ultimate Heat Sink Available Water Supply
- Steam Dryer Replacement
- Installation of an additional Fuel Pool Cooling Heat Exchanger
- Component Cooling Water (CCW) Heat Exchanger Tube Cleaning System
- Installation of the Power Range Neutron Monitoring System (PRNMS)

Of these, only modifications associated with the Fuel Pool Cooling Heat Exchanger, the new CCW Heat Exchanger Tube Cleaning System, and the PRNMS have the potential to impact the Fire Hazards Analysis (FHA). The FHA (UFSAR Appendix 9A), which is a portion of the GGNS Fire Protection Plan (UFSAR Appendix 9B), describes the fire areas and zones, the safe shutdown equipment located in the area, the fire suppression equipment in the area and summarizes the analysis of the combustible loading.

These modifications will add new cables to safety-related areas of the plant and, in some cases, involve using new or existing penetrations between rooms. However, the extent of new combustible loadings is small and will not affect the associated fire barrier rating. Affected penetrations are designed and sealed to maintain the required current fire barrier rating. All of these modifications are designed to be consistent with the current GGNS fire protection program such that there is no impact on the plant's compliance with the fire protection program licensing basis or 10 CFR50.48.

RAI # 2

The results of the Appendix R evaluation for current license thermal power (CLTP) and EPU are provided in Table 2.5-1 and Figures 2.5-1 through 2.5-6. The NRC staff notes in Table 2.5-1 that at EPU condition, there is an increase in the suppression pool bulk temperature to 181.4°F, 7.5°F above the current suppression pool bulk temperature of 173.9°F. Does the GGNS safe shutdown instructions credit any operator manual action in the containment? If so, discuss how this operator manual action can be accomplished within the available time at higher suppression pool bulk temperature (e.g., manually opening the main steam relief valves).

Response

GGNS safe shutdown instructions do not credit any manual operator actions in containment.

RAI # 3

Some plants credit aspects of their fire protection system for other than fire protection activities, e.g., utilizing the fire water pumps and water supply as backup cooling or inventory for non-primary reactor systems. If GGNS credits its fire protection system in this way, the LAR should identify the specific situations and discuss to what extent, if any, the extended power and measurement uncertainty recapture uprates affect these "non-fire-protection" aspects of the plant fire protection system. If GGNS does not take such credit, the NRC staff requests that the licensee verify this.

In your response discuss how any non-fire suppression use of fire protection water will impact the need to meet the fire protection system design demands.

Response

GGNS does not credit the fire protection system to support the design basis for non-fire protection functions. This system is considered a potential backup source of water for beyond design basis events that involve inadequate decay heat removal capability or the need for transfer of water inventory. Therefore, there are no non-fire suppression uses of the system that could impact the system's demands during design basis accidents.