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GNRO-2014/00011

February 28, 2014

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

SUBJECT: Entergy's Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)  
Grand Gulf Nuclear Station, Unit 1  
Docket No. 50-416  
License No. NPF-29

- REFERENCES:
1. NRC Order Number EA-12-049, *Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events*, dated March 12, 2012 (ML12054A735)
  2. Entergy Letter to NRC, *Overall Integrated Plan in Response to March 12, 2012, Commission Order Modifying License with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)*, dated February 27, 2013 (GNRO-2013/00015, ML13059A316)
  3. Entergy Letter to NRC, *Entergy's first Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)*, dated August 28, 2013 (GNRO-2013/0060, ML13240A264)

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an order (Reference 1) to Entergy. Reference 1 was immediately effective and directs Entergy to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event.

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan (Reference 2). Reference 3 provided the first six-month status report. The purpose of this letter is to provide the second six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The attached report provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any.

This letter contains no new regulatory commitments. Should you have any questions regarding this submittal, please contact Mr. Jeffery A. Seiter, Acting Regulatory Assurance Manager, at (601) 437-2344.

I declare under penalty of perjury that the foregoing is true and correct; executed on February 28, 2014.

Sincerely,



KJM/slw

Attachment: Grand Gulf Nuclear Station's Second Six Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

cc: U. S. Nuclear Regulatory Commission  
ATTN: Steven A. Reynolds  
Acting Regional Administrator, Region IV  
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U. S. Nuclear Regulatory Commission  
Attn: Director, Office of Nuclear Reactor Regulation  
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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 to GNRO-2014/00011**

**Grand Gulf Nuclear Station's Second Six Month Status Report for the  
Implementation of Order EA-12-049, Order Modifying Licenses with Regard to  
Requirements for Mitigation Strategies for Beyond-Design-Basis External Events**

**Grand Gulf Nuclear Station's  
Second Six-Month Status Report for the Implementation of Order EA-12-049, Order  
Modifying Licenses with Regard to Requirements for Mitigation Strategies for  
Beyond-Design-Basis External Events**

## 1 Introduction

Grand Gulf Nuclear Station (GGNS) developed an Overall Integrated Plan (Reference 1 in Section 8), documenting the diverse and flexible strategies (FLEX), in response to Reference 2. This attachment provides an update of milestone accomplishments since submittal of the Overall Integrated Plan, including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

## 2 Milestone Accomplishments

The following milestone(s) have been completed since August 28, 2013 and are current as of January 31, 2014:

- Submit Six-Month Status Report 1 — August 2013
- Submit Six-Month Status Report 2 — Complete with submission of this document in February 2014.

## 3 Milestone Schedule Status

The following provides an update to Attachment 2 of the Overall Integrated Plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

- There are no changes to milestone completion dates for this report.

Milestone	Target Completion Date <sup>†</sup>	Activity Status	Revised Target Completion Date
<b>Submit 60 Day Status Report</b>	Oct 2012	Complete	
<b>Submit Overall Integrated Plan</b>	Feb 2013	Complete	
<b>Submit Six-Month Updates:</b>			
Report 1	Aug 2013	Complete	N/A
Report 2	Feb 2014	Complete	
Report 3	Aug 2014	Not Started	
Report 4	Feb 2015	Not Started	
Report 5	Aug 2015	Not Started	
Report 6	Feb 2016	Not Started	
Report 7	Deleted	Deleted	Deleted*
<b>Perform Staffing Analysis</b>		Not Started	
<b>Modifications</b>			
Develop Mods (Design Start)	May 2014	Not Started	

Milestone	Target Completion Date <sup>†</sup>	Activity Status	Revised Target Completion Date
Develop Strategies	Nov 2014	Started	
Develop Mods (Design Complete)	Nov 2014	Not Started	
Implementation Outage**	Mar 2016	Not Started	
Implement Mods	Mar 2016	Not Started	
<b>On-site FLEX Equipment</b>			
Purchase		Started	
Procure		Started	
<b>Off-site FLEX Equipment</b>			
Develop Strategies / Contract with RRC		Started	
<b>Procedures</b>			
Issue GG FSGs		Not Started	
Create Maintenance Procedures		Not Started	
Procedure Changes Training Material Complete		Not Started	
<b>Training</b>			
Develop Training Plan		Not Started	
Implement Training		Not Started	
<b>Validation / Demonstration</b>	Mar 2016	Not Started	
<b>Submit Completion Report</b>	Aug 2016	Not Started	

\*Deleted due to Completion Report being submitted in August 2016.

\*\*Full compliance since second refueling outage is before 12/31/2016.

<sup>†</sup>Target Completion Date is the last submitted date from either the overall integrated plan or previous six-month status report.

#### 4 Changes to Compliance Method

In preparation for the design phase of the FLEX project at GGNS, changes have been identified to the compliance strategies as described in the original OIP (Reference 1). The changes are described below. The changes will be incorporated into a revised OIP which will be included with a subsequent six-month status report.

- The external flood hazard assessment for GGNS is discussed on OIP page 1 of 69. The site was originally designated as a dry site for FLEX because the GGNS UFSAR, in Appendix 3A, identified the plant as a dry site based on the plant grade elevation being 30 feet greater than the probable maximum flood (PMF) level. However, after consideration of the updated flood level due to probable maximum precipitation (PMP), the need for flood barriers for PMP and the guidance of NEI 12-06, Entergy has determined that GGNS will be classified as a wet site for beyond design basis events. As such, the GGNS FLEX strategy will incorporate, as applicable, the guidance of NEI 12-06 sections 6.2.2 and 6.2.3 (including sub-sections 6.2.3.1 through 6.2.3.4).
- The description of storage and protection of equipment on OIP page 22 of 69 erroneously referenced NEI 12-06 Section 11. Section 11 is related to programmatic controls. Therefore, this section is revised to reflect the following.

### **Seismic**

GGNS will have two pre-engineered metal buildings which will be designed for seismic per NEI 12-06, Section 5.3.1.1.b (ASCE 7-10 and local building codes). If information is not already available, soil borings will be taken and a geotechnical report generated to determine the appropriate foundation system and to ensure that soil liquefaction will not be an issue under either building. If information is not already available, soil borings will also be taken along the primary travel path from each building to the deployment locations to ensure that at least one pathway will not be susceptible to soil liquefaction, which satisfies NEI 12-06, Section 5.3.2.1 for soil liquefaction.

### **Flooding**

At least one of the two storage buildings will be located above the flood elevation to satisfy NEI 12-06, Section 6.2.3.1 Consideration 1.a.

### **Severe Storms with High Winds**

GGNS intends to locate the FLEX equipment storage buildings in accordance with NEI 12-06, Section 7.3.1.1.c (ASCE 7-10 and local building codes) to address high wind design criteria. Additionally, to provide reasonable assurance that at least one of the storage buildings would not be damaged by tornado missiles, the two buildings will be separated based on a site specific evaluation and installed on an axis that is approximately perpendicular to the axis of the predominant path for tornadoes in the area of the site. The selected building separation will be based on an evaluation of historical tornado data for the region immediately surrounding the GGNS site.

### **Snow, Ice, and Extreme Cold**

The storage buildings will be designed to meet NEI 12-06, Section 8.3.1.1.b (ASCE 7-10 and local building codes) for ice. The site's design basis temperature will be used for the extreme cold considerations. Local block heaters, water jackets, etc. may be provided for equipment such that the entire storage building will not have to be heated.

### **High Temperatures**

The storage buildings will be designed to maintain the inside temperature within the FLEX equipment manufacturers' recommended storage temperatures to satisfy NEI 12-06, Section 9.3.1.

- Information regarding the transfer of diesel fuel from the underground safety related fuel tanks for use by portable FLEX equipment is provided on pages 20 and 55 of the OIP. GGNS has revised this strategy. The new strategy for all applicable hazards is to initially access fuel oil from the installed external event protected standby diesel generator day tanks. The installed fuel oil transfer pumps will be repowered to replenish the day tank inventories when necessary.

## **5 Need for Relief/Relaxation and Basis for the Relief/Relaxation**

GGNS expects to comply with the order implementation date and no relief/relaxation is required at this time.

## 6 Open Items from Overall Integrated Plan and Interim Staff Evaluation

The following tables provide a summary and status of any open items documented in the Overall Integrated Plan and any open items or confirmatory items documented in the Interim Staff Evaluation (ISE). A fourth table includes a listing of Audit Questions and the status of each item.

Overall Integrated Plan Open Items	Status
1. Structure, content and details of the Regional Response Center playbooks [Grand Gulf Response Plan] will be determined.	Not Started

Interim Staff Evaluation Open Items	Status
The U.S. Nuclear Regulatory Commission (NRC) has not issued an Interim Staff Evaluation for GGNS; therefore, there are no open items for the Interim Staff Evaluation identified at this time.	N/A

Interim Staff Evaluation Confirmatory Items	Status
The U.S. Nuclear Regulatory Commission (NRC) has not issued an Interim Staff Evaluation for GGNS; therefore, there are no confirmatory items for the Interim Staff Evaluation identified at this time.	N/A

Audit Questions	Status	Completion or Target Date
GGN-001	In Progress	Feb 2015
GGN-002	Closed	
GGN-003	In Progress	Feb 2015
GGN-005	Closed	
GGN-007	Closed	
GGN-008	Closed	
GGN-010	In Progress	Feb 2015
GGN-011	Closed	
GGN-012	Closed	
GGN-013	In Progress	Feb 2015
GGN-014	Closed	
GGN-015	In Progress	Feb 2015
GGN-016	In Progress	Feb 2015
GGN-017	In Progress	Feb 2015
GGN-019	In Progress	Feb 2015
GGN-021	Closed	
GGN-022	Closed	
GGN-023	Closed	
GGN-024	In Progress	Feb 2015
GGN-025	In Progress	Feb 2015

<b>Audit Questions</b>	<b>Status</b>	<b>Completion or Target Date</b>
GGN-026	Closed	
GGN-028	In Progress	Feb 2015
GGN-029	Closed	
GGN-030	Closed	
GGN-031	In Progress	Feb 2015
GGN-034	In Progress	Feb 2015
GGN-036	Closed	
GGN-038	Closed	
GGN-039	In Progress	Feb 2015
GGN-040	Closed	
GGN-041	Closed	
GGN-042	Closed	
GGN-043	In Progress	Feb 2015
GGN-044	Closed	
GGN-045	In Progress	Feb 2015
GGN-046	In Progress	Feb 2015
GGN-047	Closed	
GGN-048	Closed	
GGN-050	Closed	
GGN-052	Closed	
GGN-053	In Progress	Feb 2015
GGN-055	In Progress	Feb 2015
GGN-057	Closed	
GGN-058	In Progress	Feb 2015
GGN-061	Closed	
GGN-062	In Progress	Feb 2015
GGN-063	Closed	
GGN-064	In Progress	Feb 2015
GGN-065	Closed	
GGN-066	Closed	
GGN-067	Closed	
GGN-071	In Progress	Feb 2015
GGN-072	Closed	

## **7 Potential Interim Staff Evaluation Impacts**

The NRC has not yet issued an interim staff evaluation for GGNS; therefore, there are no potential impacts to the Interim Staff Evaluation identified at this time.

## **8 References**

The following references support the updates to the Overall Integrated Plan described in this Attachment.

1. "Overall Integrated Plan in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 27, 2013 (GNRO-2013/00015, ML13059A316).



2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012 (ML12054A735).
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