

September 24, 2008

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 – RE: 3-MONTH RESPONSE TO
GENERIC LETTER 2008-01, “MANAGING GAS ACCUMULATION IN
EMERGENCY CORE COOLING, DECAY HEAT REMOVAL, AND
CONTAINMENT SPRAY SYSTEMS,” PROPOSED ALTERNATIVE COURSE OF
ACTION (TAC NO. MD7831)

Dear Sir or Madam:

The purpose of Generic Letter (GL) 2008-01, “Managing Gas Accumulation In Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,” dated January 11, 2008, is to request licensees to submit information to demonstrate that the emergency core cooling, decay heat removal, and containment spray systems (hereinafter referred to as the “subject systems”) are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance. GL 2008-01 requests that each licensee submit the requested information within 9 months. However, if a licensee cannot meet the requested 9-month response date, a 3-month written response is required that describes a proposed alternative course of action and the bases for why the alternative actions are acceptable.

In accordance with Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR), GL 2008-01 required that each licensee submit the requested information within 9 months (hereinafter referred to as the “9-month submittal”) of the date of the GL. The GL also stated that if a licensee cannot meet the requested 9-month response date, the licensee is required to provide a response within 3 months (hereinafter referred to as the “3-month submittal”) of the date of the GL, describing the alternative course of action it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

By letters dated May 6 and June 30, 2008 (GNRO-2008/00033 and GNRO-2008/00050), Entergy Operations, Inc. (EOI), submitted the 3-month response to GL 2008-01 for Grand Gulf Nuclear Station, Unit 1 (GGNS). In its letters, EOI stated that for GGNS the only GL reporting requirement that will not be completed by the 9-month submittal response time is walkdowns of some segments of piping for the following GL-applicable systems: the high-pressure core spray, low-pressure core spray, and residual heat removal systems. EOI stated that the walkdowns of these systems would be completed in the upcoming fall 2008 refueling outage and the 9-month submittal for GGNS would be submitted within 1 month after the restart from the fall 2008 outage, but no later than December 19, 2008.

Enclosed is the NRC staff's assessment of the 3-month response for GGNS. The NRC staff reviewed EOI's proposed alternative course of action and the associated basis for acceptance and concluded that for GGNS, with the exception of the clarifications and associated requests

discussed in the enclosure, they are acceptable. This letter requests EOI to implement its proposed alternative course of action consistent with the clarifications and associated requests discussed in the enclosure.

Instead of requesting that you submit a 3-month supplemental response for GGNS to revise the EOI's proposed alternative course of action related to the content and schedule for your 9-month responses as described in the enclosure, I discussed the 9-month response to the GL with Mr. Michael Larson, acting Licensing Manager for GGNS. By email dated September 24, 2008, he stated that a 9-month response to the GL will be submitted by October 11, 2008, and then a supplement to that letter will be submitted after the current refueling outage. This commitment to meet the 9-month response date of October 11, 2008, addresses our concern with the above letters dated May 6 and June 30, 2008. Therefore, nothing further is requested except the 9-month initial submittal and the 9-month supplemental submittal described in the enclosure.

If you have any questions, please contact me at 301-415-1307 or via e-mail at jack.donohew@nrc.gov.

Sincerely,

/RA/

Jack N. Donohew, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure:
As stated

cc w/encl: See next page

discussed in the enclosure, they are acceptable. This letter requests EOI to implement its proposed alternative course of action consistent with the clarifications and associated requests discussed in the enclosure.

Instead of requesting that you submit a 3-month supplemental response for GGNS to revise the EOI's proposed alternative course of action related to the content and schedule for your 9-month responses as described in the enclosure, I discussed the 9-month response to the GL with Mr. Michael Larson, acting Licensing Manager for GGNS. By email dated September 24, 2008, he stated that a 9-month response to the GL will be submitted by October 11, 2008, and then a supplement to that letter will be submitted after the current refueling outage. This commitment to meet the 9-month response date of October 11, 2008, addresses our concern with the above letters dated May 6 and June 30, 2008. Therefore, nothing further is requested except the 9-month initial submittal and the 9-month supplemental submittal described in the enclosure.

If you have any questions, please contact me at 301-415-1307 or via e-mail at jack.donoheiw@nrc.gov.

Sincerely,

/RA/

Jack N. Donohew, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure:
As stated

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NRR-106

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(7/2/2008)

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NRC STAFF ASSESSMENT OF 3-MONTH RESPONSE

TO GENERIC LETTER 2008-01

ENTERGY OPERATIONS, INC.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

On January 11, 2008, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The GL requested licensees to submit information to demonstrate that the emergency core cooling, decay heat removal, and containment spray systems (hereinafter referred to as the "subject systems") are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance. Specifically, the GL requested licensees to provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

In accordance with Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR), GL 2008-01 required that each licensee submit the requested information within 9 months (hereinafter referred to as the "9-month submittal") of the date of the GL. The GL also stated that if a licensee cannot meet the requested 9-month response date, the licensee is required to provide a response within 3 months (hereinafter referred to as the "3-month submittal") of the date of the GL, describing the alternative course of action it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

2.0 BACKGROUND

One of the purposes of GL 2008-01 "is to request [licensees] to submit information to demonstrate that the subject systems are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance." Requested actions are "that each [licensee] evaluate its ECCS, DHR system, and containment spray system licensing basis, design, testing, and corrective actions to ensure that gas accumulation is maintained less than the amount that challenges operability of these systems, and that appropriate action is taken when conditions adverse to quality are identified." Requested information is "that each [licensee] provide the following information: (a) A description of the results of evaluations that were performed pursuant to the above requested actions. This description should provide sufficient information to demonstrate that you are or will be in compliance with the quality assurance

ENCLOSURE

criteria in Sections III, V, XI, XVI, and XVII of Appendix B to 10 CFR Part 50 and the licensing basis and operating license as those requirements apply to the subject systems; (b) A description of all corrective actions, including plant, programmatic, procedure, and licensing basis modifications that you determined were necessary to assure compliance with these regulations; and, (c) A statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.” The 10 CFR 50.54(f) requirement is, in part, that “each addressee is requested to submit a written response consistent with the requested actions and information.”

The 10 CFR 50.54(f) response can be broadly separated into two categories, one that requires systems walkdowns and everything else. Systems walkdowns can be further separated into two subcategories, those that can be conducted during power operation and those that require the plant to be in a shutdown condition. With the exception of long-term items described in Section 4.0 of this NRC staff assessment, everything should have been completed in time to be included in the 9-month (October 11, 2008) response report except for walkdown results where the plant must be in a shutdown condition. Items that are completed after the October 11 date should be described in a supplemental report that, in effect, completes the October 11, 2008, response report. It is further expected that the information provided in the 9-month initial report submittal on October 11, 2008, will be sufficient to establish compliance as described in Item (a) of the above requested information. The NRC staff is not willing to wait beyond October 11 to have licensees submit sufficient information to show this compliance. Any follow-up information to the October 11, 2008, submittal should only be confirmatory.

It is recognized that some flexibility may be necessary in addressing the GL issues. For example, suppose an unexpected need for a hardware modification is discovered during a walkdown conducted after submitting the October 11 report and the modification cannot be accomplished until the next refueling outage. It is acceptable to the NRC staff for the licensee to describe this in the post-walkdown report provided any measures that are necessary to ensure compliance (including operability) are in place and are also described in the report. It should be noted that compliance (including operability) must be ensured or the hardware modification must be made earlier unless other acceptable requirements, such as an exemption or notice of enforcement discretion (NOED) is granted since deliberate operation without meeting the applicable criteria is not permitted. Further clarification is provided in the NRC letter dated July 8, 2008, to the Nuclear Energy Institute (ADAMS Accession No. ML081830557).

3.0 LICENSEE'S PREPOSED ALTERNATIVE COURSE OF ACTION

By letters dated May 6 and June 30, 2008 (ADAMS Accession No. ML081280318 and ML081830103, respectively), Entergy Operations, Inc. (the licensee) submitted the 3-month response to GL 2008-01 for Grand Gulf Nuclear Station, Unit 1 (GGNS). In its letters, the licensee stated that the following systems are considered to be within the scope of the GL: (1) the high-pressure core spray (HPCS) system, outboard of the injection valve; (2) low-pressure core spray (LPCS) system, outboard of the injection valve; and (3) the residual heat removal (RHR) system, outboard of the injection valves for the low pressure coolant injection subsystems A, B, and C, suppression pool cooling, shutdown cooling, and containment spray.

The licensee indicated that for GGNS the only GL 2008-01 reporting requirement that will not be completed by the required response time is walkdowns and inspections of some segments of piping for the above identified systems, the HPCS, LPCS, and RHR systems. The licensee

stated that the walkdowns cannot be completed within the required time because of the following: (1) entry into high radiation areas; (2) the need to erect scaffolding; (3) prolonged containment or drywell entries during power operation; or (4) the need (or restriction on) removal of insulation from piping.

As an alternative course of action, the licensee provided in Attachment 2 to its May 6, 2008, letter, the following commitment for completion of the GL 9-month response:

GGNS will determine which piping segments need an in-field verification and evaluation. Any piping segments that have not been verified and evaluated prior to the nine month response will be entered into the Corrective Action Program by October 11, 2008, with due dates no later than one month after the restart from [the GGNS] next refueling outage [that is planned for the fall of 2008].

To clarify when the 9-month response would be submitted for GGNS, the licensee, in its letter dated June 30, 2008, revised the above commitment to state the following:

Any piping segments that are determined to need in-field verification and evaluation but have not prior to the nine-month response, required by Generic Letter 2008-01, will be entered into the Corrective Action Program by October 11, 2008. GGNS will submit the complete nine-month response to Generic Letter 2008-01 one month after the completion of the next refueling outage, but no later than December 19, 2008 (should the outage be extended)."

The licensee has stated to the NRC project manager for GGNS that this October 11, 2008, date will occur during the fall 2008 outage. Therefore, the refueling outage begins before the October 11, 2008, date.

4.0 NRC STAFF ASSESSMENT

In reviewing the May 6, 2008, letter, the NRC staff finds that the stated reasons for the 9-month response delay are acceptable. However, the NRC staff also finds that the commitment, to submit the complete 9-month response to GL 2008-01 for GGNS 1 month after the completion of the next refueling outage, but no later than December 19, 2008, needs to be revised. The commitment is not consistent with the purpose of the GL discussed in Section 2.0 of this assessment. Because one purpose of the GL 2008-01 is for the licensee to demonstrate by October 11, 2008, that the subject systems of the GL are or will be in compliance with the quality assurance criteria in Sections III, V, XI, XVI, and XVII of Appendix B to 10 CFR Part 50 and the licensing basis and operating license as those requirements apply to the subject systems, the NRC staff requests that the licensee submit the 9-month information requested in the GL as follows:

- (1) A 9-Month Initial Submittal - For the portions of the subject systems that are accessible prior to the next refueling outage that is currently scheduled in the fall of 2008 for the GGNS, provide all GL-requested information to the NRC by October 11, 2008.
- (2) A 9-Month Supplemental (Post-Outage) Submittal - Except for the long-term items described below, provide all remaining GL-requested information for the subject systems

to the NRC within 90 days following completion of the first refueling outage that initiates after October 11, 2008, for GGNS.

Therefore, the NRC staff requests the licensee to submit another supplemental 3-month response to GL 2008-01 for GGNS with a revised commitment to provide (1) a 9-month initial submittal by October 11, 2008, and (2) a 9-month supplemental submittal, as stated in the June 30, 2008, letter, "one month after the completion of the next refueling outage, but no later than December 19, 2008 (should the outage be extended)."

For each of these two submittals (the 9-month initial and supplemental submittals) and consistent with the information requested in the GL, licensees should provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

The NRC staff noted that the licensee's submittals dated May 6 and June 30, 2008, did not mention other potential long-term actions that are identified in the GL. For instance, the industry is assessing whether it is necessary to perform pump testing to determine the allowable limits on ingested gas volume in pump suction piping, as well as whether analysis development is needed to assess gas transport in the subject system piping as a function of system flow. It is unlikely this industry effort will be complete for the 9-month initial or supplemental submittals. Further, technical specification changes may be necessary to reflect the improved understanding achieved during response to the GL, but these cannot be fully developed for the 9-month initial or supplemental submittals. A Technical Specifications Task Force traveler may provide a generic example that can be adopted by licensees. The NRC staff requests that the licensee address in its 9-month submittal how it plans to track such long-term actions (e.g., Corrective Action Program and/or commitment tracking). The NRC plans to perform follow-up inspections of licensee responses to GL 2008-01 at all plants using a Temporary Instruction inspection procedure.