



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 20, 2012

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 – REVIEW OF LICENSEE'S
RESPONSES TO NRC BULLETIN 2011-01, "MITIGATING STRATEGIES"
(TAC NO. ME6436)

Dear Sir or Madam:

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, "Mitigating Strategies" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML111250360), to all holders of operating licenses for nuclear power reactors, except those that have permanently ceased operation and have certified that fuel has been removed from the reactor vessel. The purpose of the bulletin was to obtain a comprehensive verification that licensees' mitigating strategies to maintain or restore core cooling, spent fuel cooling, and containment following a large explosion or fire were compliant with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(hh)(2).

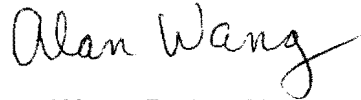
The bulletin required two sets of responses pursuant to the provisions of 10 CFR 50.54(f). By letters dated June 8 and July 11, 2011 (ADAMS Accession Nos. ML111590788 and ML11313A007, respectively), Entergy Operations Inc., the licensee for the Grand Gulf Nuclear Station, Unit 1 (GGNS), provided its responses to the bulletin. Portions of the letter dated July 11, 2011, contain sensitive unclassified non-safeguards information (security-related) and those portions are withheld from public disclosure. By letter dated November 28, 2011 (ADAMS Accession No. ML113210376), the NRC sent the licensee a request for additional information (RAI) on its July 11, 2011, response. The licensee responded to the RAI by letter dated December 15, 2011 (ADAMS Accession No. ML113490439).

The NRC staff has reviewed the information submitted by the licensee and concludes that its response to the bulletin is acceptable. As summarized in the enclosure, the NRC staff verified that the licensee provided the information requested in the bulletin and no further information or actions under the bulletin are requested.

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If you have any questions, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

Sincerely,

A handwritten signature in black ink that reads "Alan Wang". The signature is written in a cursive style with a long, sweeping tail on the letter "g".

Alan Wang, 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: Distribution via Listserv

REVIEW OF LICENSEE'S RESPONSES TO NRC

BULLETIN 2011-01, "MITIGATING STRATEGIES"

ENTERGY OPERATIONS, INC.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

On May 11, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Bulletin 2011-01, "Mitigating Strategies" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML111250360), to all holders of operating licenses for nuclear power reactors, except those that have permanently ceased operation and have certified that fuel has been removed from the reactor vessel. The bulletin required two sets of responses pursuant to the provisions of with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(f). The first responses were due 30 days after issuance of the bulletin. By letter dated June 8, 2011 (ADAMS Accession No. ML111590788), Entergy Operations, Inc. (Entergy, the licensee), provided the response to this first set of questions for Grand Gulf Nuclear Station, Unit 1 (GGNS) (first response). The second responses were due 60 days after issuance of the bulletin. By letter dated July 11, 2011 (ADAMS Accession No. ML11313A007), the licensee provided its response to this second set of questions for GGNS (second response). Portions of the letter dated July 11, 2011, contain sensitive unclassified non-safeguards information (security-related) and those portions are withheld from public disclosure. By letter dated November 28, 2011 (ADAMS Accession No. ML113210376), the NRC sent a request for additional information (RAI) on the second response and by letter dated December 15, 2011 (ADAMS Accession No. ML113490439), the licensee provided its RAI response. As summarized below, the NRC staff has verified that the licensee provided the information requested in the bulletin.

2.0 BACKGROUND

On February 25, 2002, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (ICM Order). Section B.5.b of the ICM Order required licensees to develop specific guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities using readily available resources (equipment and personnel) that can be effectively implemented under the circumstances associated with the loss of large areas of the plant due to explosions or fire.

By letter dated July 18, 2007 (ADAMS Accession No. ML071940050), the NRC staff issued its safety evaluation (SE) to document the final disposition of information submitted by GGNS regarding Section B.5.b of the ICM Order. Along with the SE, the staff issued a conforming license condition to incorporate the B.5.b mitigating strategies into the licensing basis.

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On March 27, 2009, the NRC issued 10 CFR 50.54(hh)(2) as a new rule, in order to capture the B.5.b mitigating strategies and related license conditions as regulatory requirements for both current and future licensees. At that time, licensee compliance with the conforming license conditions was sufficient to demonstrate compliance with 10 CFR 50.54(hh)(2) (74 FR 13926; March 27, 2009) so no further actions were required on the part of current licensees.

3.0 30-DAY REQUEST

In order to confirm continued compliance with 10 CFR 50.54(hh)(2), the bulletin requested that licensees address the following two questions within 30 days of issuing the bulletin:

1. Is the equipment necessary to execute the mitigating strategies, as described in your submittals to the NRC, available and capable of performing its intended function?
2. Are the guidance and strategies implemented capable of being executed considering the current configuration of your facility and current staffing and skill levels of the staff?

The NRC staff reviewed Entergy's first response to determine if it had adequately addressed these questions.

3.1 Question 1: Availability and Capability of Equipment

In its first response, Entergy confirmed that equipment it needs to execute the 10 CFR 50.54(hh)(2) mitigating strategies is available and capable of performing its intended function. The NRC staff verified that this confirmation covered equipment needed for each of the three phases of B.5.b mitigation strategies. Therefore, the NRC staff concludes that the licensee has adequately responded to Question 1 for GGNS.

3.2 Question 2: Guidance and Strategies Can Be Executed

In its first response, Entergy confirmed that the guidance and strategies it has implemented for 10 CFR 50.54(hh)(2) are capable of being executed considering the current facility configuration, staffing levels, and staff's skills. Since Entergy has considered its current facility configuration, staffing levels, and staff's skills, and confirmed that it can execute its implemented guidance and strategies, the NRC staff concludes that Entergy has adequately responded to Question 2 for GGNS.

4.0 60-DAY REQUEST

The bulletin required a response to the following five questions within 60 days of issuing the bulletin:

1. Describe in detail the maintenance of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed.

2. Describe in detail the testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it will function when needed.
3. Describe in detail the controls for ensuring that the equipment is available when needed.
4. Describe in detail how configuration and guidance management is ensured so that strategies remain feasible.
5. Describe in detail how you ensure availability of offsite support.

The NRC staff reviewed Entergy's submittals to determine if it had adequately addressed these questions. This was accomplished by verifying that the submittals listed equipment, training, and offsite resources which were relied upon to make conclusions in the July 18, 2007, SE or are commonly needed to implement the mitigating strategies.

4.1 Questions 1 and 2: Maintenance and Testing of Equipment

Questions 1 and 2 of the 60-day request required licensees to describe in detail the maintenance and testing of equipment procured to support the strategies and guidance required by 10 CFR 50.54(hh)(2) in order to ensure that it is functional when needed. In its second response, Entergy listed the equipment GGNS used to support the 10 CFR 50.54(hh)(2) mitigating strategies which receives maintenance or testing. For each item, Entergy described the maintenance and testing performed, including the frequency and basis for the maintenance or testing activity.

The NRC staff verified that Entergy listed equipment that typically requires maintenance or testing which was relied upon to make conclusions in the SE or commonly needed to implement the mitigating strategies. In its second response, the licensee stated that the fire truck, portable power supplies, and hoses receive maintenance or testing. In its RAI response, Entergy stated that it tested in monitor nozzles on November 23, 2011, and that it plans to test them on an annual basis. In its RAI response, Entergy described the testing of its communications equipment. In its RAI response, Entergy described how it ensures sufficient fuel for its fire truck.

The NRC staff verified that Entergy described the process used for corrective actions and listed the testing performed to ensure that the strategies were initially feasible. Entergy stated in its second response that its 10 CFR Part 50, Appendix B, corrective action program is used to document equipment failure, establish priorities, and perform trending.

Based upon the above, the NRC staff concludes that Entergy has provided the information requested by Questions 1 and 2 for GGNS.

4.2 Question 3: Controls on Equipment

Question 3 of the 60-day request required licensees to describe in detail the controls on equipment, such as inventory requirements, to ensure that the equipment is available when needed. A list of inventory deficiencies and associated corrective actions to prevent loss was also requested.

The NRC staff verified that Entergy described its process for ensuring that B.5.b equipment will be available when needed. In its second response, Entergy identified equipment included in its inventory, the inventory frequency, storage requirements, and items verified. Items verified include proper quantity and location of equipment and controls on storage locations. Entergy states that at the time of its second response there were no outstanding inventory deficiencies that would render the strategies not viable.

The NRC staff verified that Entergy inventoried equipment at GGNS which was relied upon to make conclusions in the SE or commonly needed to implement the mitigating strategies. In its second response, GGNS stated that procured non-permanently installed B.5.b equipment is inventoried in accordance with station procedures. The NRC noted that most items are inventoried at least quarterly. The second response specifically states that the following items are included in the inventory: fire truck, portable power supplies, hoses, communications equipment, nozzles, tools, instruments, and connectors. In its RAI response, Entergy described its inventory of firefighter turnout gear.

Based upon the above, the NRC staff concludes that GGNS has provided the information requested by Question 3.

4.3 Question 4: Configuration and Guidance Management

Question 4 of the 60-day request required licensees to describe in detail how configuration and guidance management is assured so that the strategies remain feasible.

The NRC staff verified that Entergy described its measures to evaluate plant configuration changes for their effects on the mitigating strategies and to ensure its procedures are current. In its second response, Entergy stated that plant configuration changes are procedurally evaluated against the licensing basis, which includes the B.5.b mitigating strategies. Entergy stated that the design change process requires a review of affected procedures and that procedure changes are validated to ensure that the B.5.b mitigating strategies remain viable.

The NRC staff verified that Entergy described measures it has taken at GGNS to validate the procedures or guidelines developed to support the mitigating strategies. In its second response, Entergy identified testing at GGNS in response to Question 2 that demonstrated the ability to execute some strategies. Entergy also stated, in part, that "initially, mitigating strategies were validated by walkdowns, engineering evaluations and/or table top reviews," and they were similarly revalidated in 2011.

The NRC staff verified that Entergy described the training program implemented at GNS in support of the mitigating strategies and how its effectiveness is evaluated. In its second

response, Entergy identified the training provided to its GGNS operations personnel; emergency response organization, including key decision makers; security personnel; fire brigade; and other personnel. In its RAI response, Entergy clarified what training the fire brigade receives. Entergy also identified the frequency with which each type of training is provided and the methods for training evaluating.

Based upon the above, the NRC staff concludes that Entergy has provided the information requested by Question 4 for GGNS.

4.4 Question 5: Offsite Support

Question 5 of the 60-day request required licensees to describe in detail how offsite support availability is assured.

The NRC staff verified that Entergy listed the offsite organizations at GGNS it relies upon for emergency response, including a description of agreements and related training. The NRC staff compared the list of offsite organizations that Entergy provided in its second response with the information relied upon to make conclusions in the SE and information in the NRC Temporary Instruction 2515/183 Inspection Report 05000416/2011008 dated May 13, 2011 (ADAMS Accession No. ML11133A249). Entergy stated that it maintains letters of agreement or other types of agreements with these offsite organizations, which are reviewed annually, and that these agreements were current at the time of its second response. Entergy also described the GGNS training and site familiarization it provides to these offsite organizations. Entergy stated that it reviewed its corrective action program at GGNS back to 2008 and found no issues involving lapsed agreements related to offsite support for B.5.b events.

Based upon the above, the NRC staff concludes that Entergy has provided the information requested by Question 5 for GGNS.

5.0 CONCLUSION

As described above, the NRC staff has verified that Entergy has provided the information requested in Bulletin 2011-01 for GGNS. Specifically, Entergy responded to each of the questions in the bulletin as requested. The NRC staff concludes that Entergy has completed all of the requirements of the bulletin and no further information or actions under the bulletin are needed.

If you have any questions, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

Sincerely,

/RA/

Alan Wang, 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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ADAMS Accession No. ML12159A533

*memo dated

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