



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

June 22, 2012

Mr. Michael Perito
Vice President, Site
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
GRAND GULF NUCLEAR STATION LICENSE RENEWAL APPLICATION (TAC
NO. ME7493)

Dear Mr. Perito:

By letter dated October 28, 2011, Entergy Operations, Inc., submitted an application pursuant to Title 10 of the *Code of Federal Regulations*, Part 54, to renew the operating license for Grand Gulf Nuclear Station, Unit 1 (GGNS) for review by the U.S. Nuclear Regulatory Commission (NRC or the staff). The staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These requests for additional information were discussed with Jeff Seiter, and a mutually agreeable date for the response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1045 or e-mail nathaniel.ferrer@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Ferrer", written over a horizontal line.

Nathaniel Ferrer, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosure
Requests for Additional
Information

cc w/encl: Listserv

GRAND GULF NUCLEAR STATION
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION SET 22

RAI B.1.4-1

Background: GALL Report AMP XI.M22, "Boraflex Monitoring," states:

For Boraflex panels in spent fuel storage racks, gamma irradiation and long-term exposure to the wet fuel pool environment causes shrinkage resulting in gap formation, gradual degradation of the polymer matrix, and the release of silica to the spent fuel storage pool water. This results in the loss of boron carbide in the neutron absorber sheets. A monitoring program for the Boraflex panels in the spent fuel storage racks is implemented to assure that no unexpected degradation of the Boraflex material compromises the criticality analysis in support of the design of spent fuel storage racks. This aging management program (AMP) relies on periodic inspection, testing, monitoring, and analysis of the criticality design to assure that the required 5% subcriticality margin is maintained. Therefore, this AMP includes: (a) completing sampling and analysis for silica levels in the spent fuel pool water on a regular basis, such as monthly, quarterly, or annually (depending on Boraflex panel condition), and trending the results by using the EPRI RACKLIFE predictive code or its equivalent; and (b) performing neutron attenuation testing or blackness testing to determine gap formation in Boraflex panels or measuring boron areal density by techniques such as the BADGER device.

Issue

The license renewal application (LRA) states that "the Boraflex Monitoring Program, with enhancements, is consistent with the program described in NUREG-1801, Section XI.22, Boraflex Monitoring." In order to obtain the information necessary to verify whether these program elements are consistent with the corresponding program elements of the GALL Report AMP with enhancements, the following requests for information are needed.

Request

- a. Clarify whether the "scope of the program" includes the Boraflex in the upper containment pool.
- b. The Boraflex Monitoring Program implementing procedures describe the use of a coupon monitoring technique. Clarify whether GGNS still uses the coupon monitoring technique, and whether this coupon monitoring technique will be performed in the period of extended operation. Also, if the coupon monitoring technique will be relied upon in the period of extended operation, state how many coupons are left and at what frequency will they be monitored.

- c. The Boraflex Monitoring Program basis documentation references, which describe the “detection of aging effects” and “monitoring and trending” program elements, state that monitoring will be done by the use of RACKLIFE on a frequency of 1 year. The enhancement states that “RACKLIFE analysis will continue to be performed each cycle.” The staff notes that each cycle is about 1.5-2 years.
 1. Clarify if the RACKLIFE will be performed every year or every cycle.
 2. Due to GGNS operating experience with Boraflex degradation, provide justification for the frequency of the RACKLIFE predictions.

RAI B.1.16-1

Background

The Updated Final Safety Analysis Report (UFSAR) Supplement description contained in the Standard Review Plan for License Renewal (SRP-LR) provides an acceptable program description for the GALL Report AMP XI.M30, “Fuel Oil Chemistry,” which includes the specific ASTM Standards used for monitoring and control of fuel oil contamination to maintain fuel oil quality. LRA Section A.1.16, “Diesel Fuel Monitoring Program,” states, “[t]he Diesel Fuel Monitoring Program manages loss of material and fouling in piping and components exposed to an environment of diesel fuel oil by verifying the quality of fuel oil and controlling fuel oil contamination as well as periodic draining, cleaning, and inspection of tanks. Applicable industry standards and guidance documents are used to delineate the program.” The program description found in LRA AMP B.1.16 does not include the industry standards (e.g., ASTM) used in the program.

Issue

The LRA does not specify the industry standards used for this program. Specifying the applicable industry standards used in the program ensures that there is adequate description of the program to provide assurance that it will be properly executed during the period of extended operation. The UFSAR supplement and program description for the Diesel Fuel Monitoring Program do not include the specific industry standards used for the program.

Request

Justify the absence of the above mentioned industry standards in the UFSAR supplement and the program description in LRA Appendix B for the Diesel Fuel Monitoring Program. Alternatively, provide a revision to your UFSAR supplement and AMP program description to include the specific industry standards used for the program.

RAI B.1.16-2

Background

The GALL Report recommends draining and cleaning of diesel fuel oil tank internal surfaces at least once every 10 years during the period of extended operation. Periodic draining and cleaning of diesel fuel oil tanks is performed so that internal surfaces can be visually and

volumetrically inspected allowing for detection of corrosion and other degradation inside the tanks. LRA AMP B.1.16, "Diesel Fuel Monitoring Program," states that the program will be enhanced to include a 10-year periodic cleaning and internal visual inspection of the fire water fuel oil tanks, the diesel fuel oil day tanks, and the diesel fuel oil drip tanks in scope of the program.

Issue

The LRA AMP does not include the procedures for performing cleaning and inspection of the above mentioned tanks. That is, the staff is not clear on the cleaning and inspection approach for these tanks.

Request

Provide a summary of the process for performing cleanings and internal visual inspections of the fire water fuel oil tanks, the diesel fuel oil day tanks, and the diesel fuel oil drip tanks in scope of the program.

Letter to M. Perito from N. Ferrer dated, June 22, 2012

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Nathaniel Ferrer, Project Manager
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Docket No. 50-416

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