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,

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 23

RAI 3.6.2.2.1-1

Background

NUREG-1800, Rev. 2, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (SRP-LR), Section 3.6.2.2.2 states that reduced insulation resistance of high voltage insulators due to presence of salt deposits and surface contamination could occur for plants located such that potential exists for salt deposits or surface contamination (e.g., in the vicinity of salt water bodies or industrial pollution). The applicant stated that GGNS is not located near the seacoast or near other sources of airborne particles. The applicant then concluded that reduced insulation resistance due to surface contamination is not an applicable aging effect for high-voltage insulators at GGNS.

Issue

The applicant did not address the plant specific operating experience at GGNS to support the applicant's claim that contamination is not a significant aging effect for high voltage insulators at GGNS.

Request

Please confirm that there has been no occurrence of insulator flashover due to contamination and/or dust at GGNS.

RAI 3.6.2.3-1

Background

In LRA Table 3.6.2-1, corresponding to LRA Table 3.6.1, items 16 and 17, the applicant stated that for fuse holder (not part of active equipment): metallic clamps exposed to air – indoor controlled, increased resistance of connection due to chemical contamination, corrosion, and oxidation; fatigue due to ohmic heating, thermal cycling, electrical transients and frequent manipulation or vibration are not applicable and no aging management program (AMP) is proposed. The aging management review (AMR) items cite generic note I. The applicant also indicated via Foot Note 601 that the fuse holders in the containment penetration panels (1BPZ1A, 1BPZ1B, 1BPZ2A, AND 1BPZ2B) are subject to AMR. The applicant stated that its evaluation of the fuses in the penetration protection cabinet fuse holder panels determined that the aging effects due to thermal fatigue in the form of high resistance caused by ohmic heating, thermal cycling, electrical transients, or mechanical fatigue caused by frequent manipulation (removal/replacement of the fuse), or vibration do not require aging management. GALL Report, items VI.A.LP-23 and 31, "Fuse Holders (Not Part of active equipment): Metallic Clamp," identifies the aging/effect mechanism as increased resistance of connection due to chemical contamination, corrosion, oxidation; fatigue due to ohmic heating, thermal cycling, electrical transients, increased resistance of connection due to fatigue caused by frequent manipulation or vibration. GALL Report AMP XI.E5, "Fuse Holders," states that fuse holders

within the scope of license renewal should be tested to provide an indication of the condition of the metallic clamps of fuse holders.

Issue.

The applicant did not provide technical justifications of why the aging affects of the fuse holders in LRA Table 3.6.2-1, do not require aging management.

Request.

Provide justification for not managing the aging effects of the fuse holders listed in LRA Table 3.6.2-1, corresponding to LRA Table 3.6.1, items 16 and 17. Also provide an evaluation that addresses each aging effect/mechanism identified in GALL Report, items VI.A.LP-23 and 31.

RAI B.1.1-1

Background

In LRA Section B.1.1, under operating experience, the applicant states that the 115 kV Inaccessible Transmission Cable Program is a new program. Industry operating experience was considered in the development of this program. The applicant also stated that plant operating experience will be gained as the program is implemented and will be factored into the program via confirmation and corrective actions elements of the GGNS 10 CFR 50, Appendix B quality assurance program. The applicant further stated that this inspection program applies to a potential aging effect for which there is no operating experience at GGNS indicating the need for an AMP. Additionally, the applicant stated that a search of GGNS operating experience with the 115 kV inaccessible transmission cables and connections in this program identified no age-related failures.

SRP-LR Section A.1.2.3.10, under Operating Experience, states that for new AMPs that have yet to be implemented at an applicant's facility, the programs have not yet generated any operating experience (OE). However, there may be other relevant plant-specific OE at the plant or generic OE in the industry that is relevant to the AMP's program elements even though the OE was not identified as a result of the implementation of the new program.

During the switchyard walk-down, the staff noted that Manhole15 contains the 115 kV in-service transmission cables and the spare cables. These cables have the same manhole but different vaults. The spare cables have a manhole cover and appeared to have a new sump pump installed. However, the vault containing in-service cables appears to have never been inspected for water and does not have a sump pump. This vault is covered by the thick concrete slab with no manhole cover.

Issue

When a power cable is exposed to wet, submerged, or other adverse environmental conditions for which it was not designed, an aging effect of reduced insulation resistance may result,

causing a decrease in the dielectric strength of the conductor insulation. This can potentially lead to failure of the cable's insulation system.

Request

Please confirm that manhole MH-15 containing in-service cable has been inspected. Describe recent operating experience with water accumulation in Manhole 15. If water is found submerging cables, describe corrective actions to prevent cable future submergence conditions.

RAI B.1.1-2

Background

The staff reviewed the applicant's "corrective actions" program element against the criteria in SRP-LR Section A.1.2.3.7, which states that the actions to be taken when the acceptance criteria are not met should be described in appropriate detail or referenced to source documents. Corrective actions, including root cause determination and prevention of recurrence, should be timely. The applicant did require corrective actions when the test acceptance criteria are not met. However, the applicant did not specifically require corrective actions when inspection acceptance criteria are not met to ensure that the intended functions of the electrical cables can be maintained consistent with the current licensing basis.

Issue

When the inspection acceptance criteria are not met, the applicant may not be required to perform an engineering evaluation to ensure that the electrical cables are not submerged again.

Request

Revise the LRA and UFSAR supplement, as necessary, to describe the corrective actions when inspection acceptance criteria are not met or provide a technical justification of how the proposed corrective actions are consistent with the SRP-LR Section A.1.2.3.7.

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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