



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

April 6, 2015

Mr. Kevin J. Mulligan  
Vice President, Site  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, MS 39150

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
GRAND GULF NUCLEAR STATION, UNIT 1, LICENSE RENEWAL  
APPLICATION, SET 52 (TAC NO. ME7493)

Dear Mr. Mulligan:

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 NPF-29 for Grand Gulf Nuclear Station, Unit 1, 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 Mr. Dave Lach, and a mutually agreeable date for the response is within 45 days from the date of this letter. If you have any questions, please contact me at 301- 415-3873 or e-mail [John.Daily@nrc.gov](mailto:John.Daily@nrc.gov).

Sincerely,

**/RA/**

John Daily, Senior 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: See next page

April 6, 2015

Mr. Kevin J. Mulligan  
Vice President, Site  
Entergy Operations, Inc.  
P.O. Box 756  
Port Gibson, MS 39150

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
GRAND GULF NUCLEAR STATION, UNIT 1, LICENSE RENEWAL  
APPLICATION, SET 52 (TAC NO. ME7493)

Dear Mr. Mulligan:

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 NPF-29 for Grand Gulf Nuclear Station, Unit 1, 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 Mr. Dave Lach, and a mutually agreeable date for the response is within 45 days from the date of this letter. If you have any questions, please contact me at 301- 415-3873 or e-mail John.Daily@nrc.gov.

Sincerely,

*/RA/*

John Daily, Senior 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

DISTRIBUTION: See following pages

ADAMS Accession No.: **ML15085A493**

\* Concurred via e-mail

OFFICE	PM:RPB1:DLR	LA:RPB1	BC:RPB1:DLR	PM: RPB1:DLR
NAME	JDaily	YEdmonds*	YDiaz-Sanabria	JDaily
DATE	4/6/15	3/30/15	4/8/15	4/9/15

OFFICIAL RECORD COPY

GRAND GULF NUCLEAR STATION, UNIT 1  
LICENSE RENEWAL APPLICATION  
REQUESTS FOR ADDITIONAL INFORMATION, SET 52

RAI 3.0.3-1-FWS-1a

Background

As amended by letter dated November 6, 2014, an enhancement to the “detection of aging effects” program element of the Fire Water System Program described in LRA Section B.1.21 states that “main drain tests are performed consistent with NFPA 25... (Section) 13.2.5...” and that a flow blockage evaluation will be conducted, “if during main drain testing the flowing pressure drops more than 10 percent from the previous test in the same location (emphasis added).”

Issue

The amended program element is not consistent with National Fire Protection Association (NFPA) 25 Section 13.2.5, which states that the 10 percent reduction in full flow pressure should be compared to the original acceptance test or previously performed tests. By comparing the result of the main drain test to only the previous test, decreases in full flow pressure (indicative of potential flow blockage) could accumulate over time and exceed a 10 percent reduction in flow.

Request

Please address this inconsistency and provide an adequate basis for how comparing the current test result to only the previous test result will be effective in determining whether potential flow blockage is occurring and how effective trending can be accomplished.

RAI 3.0.3-1-FWS-2a

Background

As amended by letter dated May 13, 2014, LRA Section B.1.21 states an exception to the “detection of aging effects” program element. This exception states that adhesion testing will not be conducted on the internal surfaces of fire water storage tanks in accordance with ASTM D 3359, “Standard Test Methods for Measuring Adhesion by Tape Test,” as cited by NFPA 25 Section 9.2.7. An enhancement to the “corrective actions” program element states that dry film thickness measurements, spot wet-sponge tests, and ultrasonic thickness checks of any identified corroded areas will be conducted.

The response to RAI 3.0.3-1-FWS-2 dated November 6, 2014, states that adhesion testing, in accordance with ASTM D 3359, would not be conducted because the recommended type of adhesion testing is destructive, variability of test results can occur, and the length of time required to conduct repairs could result in entry into Technical Requirements Manual limiting conditions for operation.

Issue

An alternative to adhesion testing was not proposed.

ENCLOSURE

### Request

State how potential peeling, delamination, or blistering, or the extent of these aging mechanisms, would be detected by dry film thickness measurements, spot wet-sponge tests, or ultrasonic wall thickness measurements, or propose an alternative to the adhesion testing cited in NFPA 25.

RAI 3.0.3-1-FWS-8

### Background

As amended by letter dated May 13, 2014, LRA Section B.1.21 states an enhancement to the “acceptance criteria” program element of the Fire Water System program. The enhancement states the acceptance criteria for coatings as, “(1) peeling and delamination are not acceptable, (2) cracking is not acceptable if accompanied by delamination or loss of adhesion, and (3) blisters are limited to intact blisters that are completely surrounded by sound coating bonded to the surface.”

On November 14, 2014, the staff published AMP XI.M42 as part of LR-ISG-2013-01 “Aging Management of Loss of Coating or Lining Integrity for Internal Coatings/Linings on In-Scope Piping, Piping Components, Heat Exchangers, and Tanks.” The “acceptance criteria” program element of AMP XI.M42 included additional acceptance criteria for flaking, rusting, wall thickness measurements, adhesion test results, the acceptable size of blisters, and for changes in size or frequency of occurrence of blisters.

### Issue

The staff cannot complete its evaluation of the acceptance criteria associated with internal coatings on the fire water storage tank without additional acceptance criteria associated with the above indications.

### Request

Provide additional acceptance criteria for flaking, rusting, wall thickness measurements, adhesion test results, size of blisters, and for changes in size or frequency of occurrence of blisters.

RAI 3.0.3-2b, Internal Coatings Follow-up

### Background

The response to RAI 3.0.3-2a Request (4) dated November 6, 2014, stated that “[i]n the event peeling, delamination, cracking, or loss of adhesion is identified, follow-up evaluations such as [emphasis added by staff] an adhesion test will be performed.”

The response also stated that in the event that base metal is exposed, “[i]f repair or replacement of the coating is postponed, the evaluation will consider the minimum wall thickness requirements and the rate of corrosion and confirm the component remains acceptable for continued service until the next inspection or repair opportunity.”

In addition, the applicant revised the Fire Water System Program to state that dry film thickness readings, spot wet sponge tests, and ultrasonic thickness readings would be conducted where pitting or corrosion is detected in the fire water storage tank walls or floor.

Issue

On November 14, 2014, the staff published AMP XI.M42 as part of LR-ISG-2013-01 "Aging Management of Loss of Coating or Lining Integrity for Internal Coatings/Linings on In-Scope Piping, Piping Components, Heat Exchangers, and Tanks." AMP XI.M42 recommends that adhesion testing should be conducted in order to evaluate degraded coatings. The response to RAI 3.0.3-2a Request (4) dated November 6, 2014, states that followup evaluations "such as" adhesion testing will be performed. The response did not state what alternatives to adhesion testing would be conducted in order to evaluate degraded coatings.

The "corrective actions" program element of AMP XI.M42 recommends that coatings that do not meet acceptance criteria are repaired, replaced, or removed. The "acceptance criteria" program element of AMP XI.M42 states that indications of peeling and delamination are not acceptable. The response did not state how downstream flow blockage will be addressed when degraded coatings that do not meet acceptance criteria are returned to service and what actions would be taken if degraded coatings exhibiting peeling or delamination are returned to service without correction.

Request

State: (a) what alternatives to adhesion testing will be conducted to evaluate degraded coatings; (b) how potential downstream flow blockage due to degraded coatings that do not meet acceptance criteria will be evaluated prior to returning a degraded coating to service; and (c) what actions would be taken if degraded coatings exhibiting peeling or delamination are returned to service without correction.

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
GRAND GULF NUCLEAR STATION, LICENSE RENEWAL APPLICATION,  
SET 52 (TAC ME7493)

**DISTRIBUTION:** Via Listserv

**HARD COPY:**

DLR RF

**E-MAIL:**

PUBLIC

RidsNrrDir Resource

RidsNrrDirRpb1 Resource

RidsNrrDirRpb2 Resource

RidsNrrDirRarb Resource

RidsNrrDirRasb Resource

-----

JDaily

DDrucker

BWittick

YDiaz-Sanabria

AWang

RSmith, RIV

BRice, RIV

DMcIntyre, OPA