



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

June 20, 2012

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

SUBJECT: SCOPING AND SCREENING METHODOLOGY AUDIT REPORT REGARDING
THE GRAND GULF NUCLEAR STATION, UNIT 1, LICENSE RENEWAL
APPLICATION (TAC NO. ME7493)

Dear Mr. Perito:

By letter, dated October 28, 2011, Entergy Operations, Inc., submitted an application for renewal of operating license NPF-29 for the Grand Gulf Nuclear Station, Unit 1. On February 3, 2012, the staff of the U.S. Nuclear Regulatory Commission completed the on-site audit of the license renewal scoping and screening methodology. The audit report is enclosed.

If you have any questions, please contact me by telephone at (301) 415-1045 or by e-mail at 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
As stated

cc: Listserv

SCOPING AND SCREENING METHODOLOGY TRIP REPORT FOR THE GRAND GULF NUCLEAR STATION LICENSE RENEWAL APPLICATION

I. Introduction

The Division of License Renewal performed an audit of the Grand Gulf Nuclear Station (GGNS; the applicant) license renewal scoping and screening methodology, developed to support the GGNS license renewal application (LRA). The audit was performed during the week of January 9, 2012, at the applicant's facility located in Claiborne County, Mississippi.

The purpose of the audit was to review the methodology used by the applicant to identify the systems, structures and components (SSCs) to be included within the scope of license renewal and subject to an aging management review (AMR). In addition, the staff reviewed the quality practices and the training practices used in the development of the LRA, the quality assurance elements of aging management programs (AMPs), selected examples of component material and environment combinations identified in AMR lines items, and site-specific operating experience related to age related degradation.

The regulations contained in Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," and the staff guidance contained in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR), Revision 2, provided the bases for the audit. In addition, the applicant had developed the LRA in accordance with the industry guidance contained in Nuclear Energy Institute (NEI) 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule," Revision 6 (NEI 95-10), which the NRC has endorsed via Regulatory Guide 1.188 (RG 1.188), "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses."

II. Background

10 CFR 54.21, "Contents of Application – Technical Information," requires that each application for license renewal contain an integrated plant assessment (IPA). The IPA must list, for SSCs within the scope of license renewal, the structures and components (SCs) that are subject to an AMR. 10 CFR 54.4(a), "Scope," provides the criteria for inclusion of SSCs within the scope of license renewal and 10 CFR 54.21(a)(1) requires that SCs within the scope of license, that are determined to be passive and not periodically replaced, be subject to an AMR.

III. Scoping Methodology

The applicant's license renewal project personnel had performed evaluations to identify the SSCs that were within the scope of license renewal and documented the results in the LRA. The staff conducted detailed discussions with the applicant's management and license renewal project personnel and reviewed implementing procedures, reports and documentation pertinent to the scoping process. The staff assessed if the scoping methodology outlined in the LRA and implementing procedures was consistent with 10 CFR Part 54. The staff also assessed, on a sampling basis, if the scoping methodology was implemented consistent with the applicant's process.

ENCLOSURE

Verification of Scoping Results for Portions of Sampled Systems

The staff reviewed a sample of the documented scoping results for portions of the standby service water system and the turbine building. In addition, the staff performed walk-downs of selected portions of the following systems and structures:

- Standby Service Water Pumphouse and Basin
- Diesel Building
- Switchyard

Verification of Scoping and Screening Results for Selected Components

The staff conducted a review of selected components from the applicant's controlled plant equipment database to confirm the results of the applicant's determination on if components are within the scope of license renewal and subject to an AMR. The staff reviewed the selected components, which included mechanical, electrical and structural components, using the Updated Final Safety Analysis Report (UFSAR), system information, and piping and instrumentation drawings to perform its review. The plant equipment database, which provided a list of components, was a primary source of information used during the license renewal scoping and screening process, including scoping and screening reviews, AMRs, and assignment of AMPs.

The NRC staff independently selected a random sample of 85 components from the approximately 111,500 components listed in the plant equipment database and reviewed the component information to determine whether the components were appropriately included within the scope of license renewal and determined to be subject to an AMR. The staff reviewed the component information including the component name, system, function, tag number, location and other applicant documentation. Of the 85 randomly selected components, the applicant had included 23 components within the scope of license renewal and determined the components to be subject to an AMR. The applicant had determined 62 components were not within the scope of license renewal or not subject to an AMR (because the component was active or replaced on a periodic basis). The NRC staff reviewed the 62 components and confirmed the applicant's conclusion that the 62 components are not required to be within the scope of license renewal or subject to an AMR, as applicable.

Areas Requiring Additional Information

The staff confirmed that the applicant's scoping methodology was generally consistent with the requirements of 10 CFR Part 54 for the identification of SSCs that meet the scoping criteria of 10 CFR 54.4(a). However, the staff determined that additional information was required in the following areas in order for the staff to complete its review:

- Reconciliation of the definitions of safety-related contained in the applicant's procedures, the UFSAR, and the LRA, as it relates to the applicability of 10 CFR Part 100 and 10 CFR Part 50.67 to the identification of SSCs within the scope of license renewal in accordance with 10 CFR 54.4(a)(1)(iii).
- The basis for not including SSCs identified as safety-related in the plant equipment database within the scope of license renewal in accordance with 10 CFR 54.4(a)(1).

- Confirmation that abandoned equipment, with the potential to contain fluids and in the proximity of safety-related SSCs, has been verified to be drained or included within the scope of license renewal in accordance with 10 CFR 54.4(a)(2).
- The technical basis for not including the incomplete and abandoned GGNS, Unit 2, turbine building, located adjacent to the GGNS turbine building and control building, within the scope of license renewal in accordance with 10 CFR 54.4(a)(2).

IV. Screening Methodology

The applicant's license renewal project personnel had performed evaluations to identify the SCs within the scope of license renewal that were subject to an AMR and documented the structures and components types in the LRA. The staff conducted detailed discussions with the applicant's management and license renewal project personnel and reviewed implementing procedures, reports and documentation pertinent to the screening process. The staff assessed if the screening methodology outlined in the LRA and implementing procedures was consistent with 10 CFR Part 54. The staff also assessed, on a sampling basis, if the screening methodology was implemented consistent with the applicant's process.

The staff reviewed a sample of the documented screening results for portions of the standby service water system and the turbine building. In addition, the staff performed walk-downs of selected portions of the following systems and structures:

- Standby Service Water Pumphouse and Basin
- Diesel Building
- Switchyard

The staff verified the screening methodology outlined in the LRA and implementing procedures was consistent with 10 CFR Part 54. In addition, the staff verified, on a sampling basis, that the screening methodology was implemented consistent with the applicant's process.

V. Component Material and Environment Combinations

The staff performed a review to confirm a sample of the component material and environment information contained in the LRA. The staff reviewed the applicant's documentation during the scoping and screening methodology audit and performed the walk-downs during the subsequent AMP audit performed during the week of January 22, 2012.

The staff independently selected a random sample of 35 components from the "Summary of Aging Management Evaluation" tables (AMR items) contained in LRA Section 3. The staff verified the information either during a walkdown or through review of the applicant's reference documents. These reference documents included the plant system and design drawings; piping isometric drawings; and component vendor manuals. The staff was able to visually inspect 15 of the 35 selected components.

During the staff review of the 35 components, 34 of the component material environment combinations were confirmed by the staff. The staff determined that additional information was required in order for the staff to complete its review.

- The flexible connection in the lube oil system (LRA Table 3.4.2-2-8), exposed to an environment of air - indoor (external), is listed as having stainless steel as the construction material. However, the staff could not verify this information during the walkdown or through a review of the documentation provided by the applicant.

VI. Site-Specific Operating Experience

The SRP-LR provides guidance to the staff on the process to be followed when assessing the 10 program elements for each AMP submitted in an LRA. Operating experience (OE) is one of the 10 elements and is defined in the SRP-LR and the Generic Aging Lessons Learned (GALL) Report. The site-specific and industry OE also relates to two other AMP elements: detection of aging effects and monitoring and trending. The SRP-LR addresses the importance of the applicant's specific OE in relation to scoping and screening; AMR; and time-limited aging analysis activities.

The staff performed an independent search of the applicant's corrective action report database, using staff selected keywords, to identify occurrences of age related degradation. This activity was performed independently of the applicant's review of the corrective action report database. The staff identified corrective action reports that contained information concerning age related degradation that would be used by the staff during the performance of the AMP audit.

VII. Aging Management Program Quality Assurance Elements

The staff reviewed the AMPs' quality assurance elements to verify consistency with the staff's guidance described in SRP-LR, Appendix A, "Branch Technical Positions," Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)." The AMP quality assurance elements are corrective action, confirmation process, and administrative controls.

The AMP quality assurance elements are described in LRA Appendix A, Section A.1, "Aging Management Programs," and LRA Appendix B, Section B.0.3, "Corrective Actions, Confirmation Process and Administrative Controls," and the applicant's "Aging Management Program Evaluation Reports," document. LRA Appendices A and B state that the applicant's existing quality assurance (QA) program will be applied to three AMP QA elements. The applicant's "Aging Management Program Quality Assurance Elements for License Renewal" document incorporates portions of various QA procedures as required to ensure the elements of corrective action program, confirmation process, and administrative controls are compliant with the 10 CFR Part 50, Appendix B requirements for all AMPs. The staff reviewed the AMP basis documents and confirmed that the AMPs incorporate corrective action programs, confirmation processes, and administrative controls as described in the "Aging Management Program Quality Assurance Elements for License Renewal," document.

Based on the staff's evaluation, review of the AMP basis documents and information contained in LRA Appendix A, Section A.1, and Appendix B, Section B.0.3, the staff determined the AMP quality assurance elements to be consistent with the staff's position regarding QA for aging management.

VI. Quality Assurance Controls Applied to LRA Development

The staff reviewed the quality controls used by the applicant for the development of the LRA. Controls that applied to the license renewal activities related to QA included:

- Performing scoping and screening activities using approved documents and procedures.
- Employing databases to guide and support scoping and screening and generate license renewal documents. These databases were controlled by procedures and included:
 - Equipment Database (EDB) – A database used as the central repository of equipment specific information.
 - License Renewal Information System (LRIS) – A database used primarily for IPA activities of scoping and developing AMR reports.

The staff performed a sample review of implementing procedures and guides, examined the applicant's documentation of activities contained in reports, reviewed the applicant's activities performed to assess the quality of the LRA, and held discussions with the applicant's license renewal management and license renewal project personnel. The staff determined that the applicant's activities provide assurance that the LRA was developed consistent with the applicant's license renewal program requirements.

VII. Training for License Renewal Project Personnel

The staff reviewed the training process for the applicant's license renewal project personnel applied to ensure the guidelines and methodology for the scoping and screening activities were applied in a consistent and appropriate manner. As outlined in the implementing procedures, the applicant had required training for personnel participating in the development of the LRA and used trained and qualified personnel to prepare the scoping and screening implementing procedures.

The license renewal project personnel had been trained to the applicable project procedures and other relevant license renewal information using Entergy procedure EN-FAP-LR-001, License Renewal Overview and Project Plan, as appropriate to their functions. Training topics had included 10 CFR Part 54, relevant NRC and industry guidance documents, lessons learned from other nuclear power plant license renewals, and applicable Entergy procedures. The training had been accomplished primarily by classroom instruction and by reviewing documents and was documented on forms developed for that purpose.

The staff discussed training activities with the applicant's management and license renewal project personnel and performed a sampling review of applicable documentation. The staff determined that the applicant had developed and implemented adequate controls for the training of personnel performing LRA activities.

VIII. Final Briefing

A final briefing was held with the applicant on January 12, 2012, to discuss the results of the scoping and screening methodology audit. The staff identified preliminary areas where additional information would be required to support completion of the staff's LRA review.

IX. Documents Reviewed

1. NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 2
2. NEI 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 The License Renewal Rule," Revision 6
3. License Renewal Application – Grand Gulf Nuclear Station
4. EN-FAP-LR-003, System and Structure Scoping for License Renewal
5. EN-FAP-LR-004, Mechanical System Screening and Aging Management Reviews
6. EN-FAP-LR-005, Electrical System Scoping, Screening and Aging Management Reviews
7. EN-FAP-LR-006, Structural Screening and Aging Management Reviews
8. GGNS-EP-08-LRD01, System and Structure Scoping Results
9. GGNS-EP-08-LRD05, Aging Management Program Evaluation Results – Class 1 Mechanical
10. GGNS-EP-08-LRD06, Aging Management Program Evaluation Results – Non-Class 1 Mechanical
11. GGNS-EP-08-LRD07, Aging Management Program Evaluation Results – Structural / Civil
12. GGNS-EP-08-LRD08, Aging Management Program Evaluation Results - Electrical
13. GGNS-ME-08-AMMXX (mechanical system aging management review series documents)
14. GGNS-EE-08-AME01, Electrical Screening and Aging Management Review
15. GGNS-CS-08-AMCXX (structural aging management review series documents)
16. License Renewal Information System (LRIS)
17. License Renewal Application Drawings
18. GGNS Updated Final Safety Analysis Report (UFSAR)
19. Administrative Procedure, 01-S-10-1, Fire Protection Plan
20. Administrative Procedure, 01-S-06-57, Environmental Qualification
21. DR-ECH-EN-DC-105, Configuration Management
22. DR-ECH-EN-DC-119, Equipment Database (EDB) Process and Controls
23. DR-ECH-EN-DC-153, Preventive Maintenance Component Classification
24. DR-ECH-EN-DC-167, Classification of Structures, Systems, and Components
25. DR-ECH-EN-DC-204, Maintenance Rule Scope and Basis
26. EN-FAP-LR-001, License Renewal Overview and Project Plan
27. EN-FAP-LR-002, Environmental Report Guidelines
28. EN-FAP-LR-003, System and Structure Scoping for License Renewal
29. EN-FAP-LR-004, Mechanical System Screening and Aging Management Reviews
30. EN-FAP-LR-005, Electrical System Scoping, Screening and Aging Management Reviews
31. EN-FAP-LR-006, Structural Screening and Aging Management Reviews
32. EN-FAP-LR-007, Evaluation of Aging Management Programs
33. EN-FAP-LR-008, TLAA and Exemption Evaluations
34. EN-FAP-LR-009, License Renewal Information System Use and Maintenance
35. EN-FAP-LR-010, License Renewal Application Development
36. EN-FAP-LR-011, License Renewal Application Maintenance
37. EN-FAP-LR-012, Operating Experience Review for License Renewal
38. EN-FAP-LR-013, New and Significant Information Report
39. EN-FAP-LR-014, Preparation for Site Audits and Inspections for License Renewal
40. EN-FAP-LR-020, License Renewal Implementation
41. EN-FAP-LR-021, License Renewal Implementation Project Plan
42. EN-FAP-LR-022, License Renewal Implementation Readiness Inspection Preparation
43. EN-FAP-LR-024, One-Time Inspection
44. EN-FAP-LR-025, Selective Leaching Inspection
45. EN-FAP-LR-026, License Renewal Bolted Cable Connection AMP

- 46. EN-FAP-LR-027, License Renewal Sensitive Instrumentation Circuits Review AMP
- 47. EN-LI-102, Corrective Action Process
- 48. Entergy Quality Assurance Program Manual (QAPM)
- 49. EN-AD-103, Document Control and Records Management Programs

X. NRC Audit Team Members

Bill Rogers	NRR/DLR	Angela Buford	NRR/DLR
Stacie Sakai	NRR/DLR	Donald Brittner	NRR/DLR
Edward Smith	NRR/DSS	Brett Titus	NRR/DSS
Evan Davidson	NRR/DSS		
Lane Howard	DLR Contractor Southwest Research Institute		
Patrick Mackin	DLR Contractor Southwest Research Institute		
Larry Miller	DLR Contractor Southwest Research Institute		
James Nickolaus	DSS Contractor Pacific Northwest National Laboratory		

XI. Applicant Personnel Contacted During Audit

Marty Richey	Andrew Taylor
Herbert Rideout	Jacque Lingenfelter
Roger Rucker	Jeff Seiter
Reza Ahrabli	Leland Loyd
Gary Young	Eric Blocher
Michael Perito	Linda Patterson
Dennis Wiles	Ted Ivy
Jay Miller	Kevin Muggleston
Trent Russell	Keith Brinson

June 20, 2012

Mr. Michael Perito
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Sincerely,
/RA/

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

Docket No. 50-416

Enclosure:
As stated

cc: Listserv

ADAMS Accession No. ML12165A387

*concurring via email

OFFICE	PM:RPB1:DLR	LA:RPB2:DLR*	BC:RASB:DLR	BC:RPB1:DLR	PM:RPB1:DLR
NAME	NFerrer	IKing	MMarshall	DMorey	NFerrer
DATE	6/19/12	6/15/12	6/19/12	6/19/12	6/20/12

OFFICIAL RECORD COPY

Letter to M. Perito from N. Ferrer dated June 20, 2012

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