



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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July 13, 2010

Mr. Randall K. Edington
Executive Vice President, Nuclear
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: SCOPING AND SCREENING AUDIT REPORT FOR THE PALO VERDE
NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3, LICENSE RENEWAL
APPLICATION (TAC NOS. ME0254, ME0255, AND ME0256)

Dear Mr. Edington:

By letter dated December 11, 2008, as supplemented by letter dated April 14, 2009, Arizona Public Service Company (APS) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 to renew Operating License Nos. NPF-41, NPF-51, and NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, respectively.

During the week of October 19-22, 2009, the staff conducted an audit of the scoping and screening methodology. Attached is the "Scoping and Screening Methodology Audit Trip Report," which summarizes the staff's audit activities.

If you have any questions, please contact me at 301-415-1906 or by e-mail at Lisa.Regner@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa M. Regner", with a long horizontal flourish extending to the right.

Lisa M. Regner, Sr. Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-528, 50-529, and 50-530

Enclosure:
As stated

cc: Distribution via Listserv

SCOPING AND SCREENING METHODOLOGY TRIP REPORT FOR THE PALO VERDE LICENSE RENEWAL APPLICATION

I. Introduction

During the week of October 19-22, 2009, the Division of License Renewal, Engineering Review Branch 2, performed an audit of the Arizona Public Service Company (the applicant) license renewal scoping and screening methodology developed to support the license renewal application (LRA) for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The audit was performed at the applicant's facility located twenty-six miles west of Phoenix, Arizona. The focus of the staff's audit was the applicant's administrative controls governing implementation of the LRA scoping and screening methodology and review of the technical basis for selected scoping and screening results for various plant systems, structures, and components (SSCs). The audit team also reviewed quality attributes for aging management programs (AMPs), quality practices used by the applicant to develop the LRA, and training of personnel that developed the LRA.

The regulatory bases for the audit were listed in Title 10 of the *Code of Federal Regulations*, Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," (10 CFR Part 54) and NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Revision 1 (SRP-LR). In addition, the applicant developed the LRA in accordance with Nuclear Energy Institute (NEI) 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR 54 – The License Renewal Rule," Revision 6 (NEI 95-10) which the U.S. Nuclear Regulatory Commission (NRC) has endorsed via Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," (Regulatory Guide 1.188).

II. Background

10 CFR 54.21, "Contents of Application – Technical Information," requires that each application for license renewal contain an integrated plant assessment (IPA). Furthermore, the IPA must list and identify those structures and components (SCs) subject to an aging management review (AMR) from the SSCs that are included within the scope of license renewal. 10 CFR 54.4(a) identifies the plant SSCs within the scope of license renewal. SCs within the scope of license renewal are evaluated to determine if they are long-lived and passive equipment and, therefore, subject to an AMR in accordance with 10 CFR 54.21(a)(1).

III. Scoping Methodology

The scoping evaluations for the PVNGS LRA were performed by the applicant's license renewal project personnel. The audit team conducted detailed discussions with the applicant's license renewal project personnel and reviewed documentation pertinent to the scoping process. The audit team assessed whether the scoping methodology outlined in the LRA and implementation procedures were appropriately implemented and whether the scoping results were consistent with current licensing basis requirements.

The audit team conducted a review of a sample of eighty-five components from the applicant's plant equipment database to verify that the selected components were correctly identified as

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being within the scope of license renewal. The audit team reviewed the selected components, which included mechanical, electrical and structural components, using the applicant's documents including the updated final safety analysis report (UFSAR), system information and piping and instrumentation drawings to perform its review. The audit team did not identify any components that had not been appropriately included within the scope of license renewal.

The audit team also reviewed a sample of system scoping results for the following systems and structures: safety injection and shutdown cooling, diesel generator fuel oil storage and transfer, auxiliary feedwater, and the turbine building. The audit team determined that the applicant's scoping methodology was generally consistent with the requirements of the Rule for the identification of SSCs that meet the scoping criteria of 10 CFR 54.4(a). However, the audit team determined that additional information was required in order for the staff to complete its review:

- The staff requested the applicant provide a discussion on the process used to identify and document the differences in SSC configurations, scoping and screening results, and identification of differences in material and environments, between the three PVNGS units.
- The staff requested that the applicant provide the basis for the use of the Moderate Energy Crack evaluation to not include certain nonsafety-related SSCs within the scope of license renewal.
- The staff requested the applicant to provide the basis for not including certain nonsafety-related SSCs, attached to or in the proximity of safety-related SSCs, within the scope of license renewal.

IV. Screening Methodology

The audit team reviewed the methodology used by the applicant to determine if mechanical, structural, and electrical components within the scope of license renewal would be subject to an AMR (screening). The applicant provided the audit team with a detailed discussion of the processes used for each discipline and provided administrative documentation that described the screening methodology. The audit team also reviewed the screening results reports for the safety injection and shutdown cooling, diesel generator fuel oil storage and transfer, auxiliary feedwater, and the turbine building. The audit team noted that the applicant's screening process was performed in accordance with its written requirements and was consistent with the guidance provided in the SRP-LR and NEI 95-10. The audit team determined that the screening methodology was consistent with the requirements of the Rule for the identification of SSCs that meet the screening criteria of 10 CFR 54.21(a)(1).

V. Aging Management Program Quality Assurance Attributes

The audit team reviewed the applicant's AMPs described in Appendix A, "Updated Final Safety Analysis Report Supplement," and Appendix B, "Aging Management Programs," of the PVNGS LRA for inclusion of the appropriate quality assurance (QA) requirements for elements No. 7 (corrective action), No. 8 (confirmation process), and No. 9 (administrative controls). In addition, the audit team reviewed each individual AMP basis document to ensure consistency in the use of the QA attributes for each program. The purpose of this review was to ensure that

the aging management activities were consistent with the staff's guidance described in SRP-LR, Section A.2, "Quality Assurance for Aging Management Program (Branch Technical Position IQMB-1)."

Based on the audit team's evaluation, the descriptions and applicability of the AMPs and their associated quality attributes, provided in Appendix A, Section A.1, "Summary Descriptions of Aging Management Programs," and Appendix B, Section B1.3, "Quality Assurance Program and Administrative Controls," of the LRA, were determined to be generally 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 to ensure that scoping and screening methodologies used to develop the LRA were adequately implemented. The applicant used the following quality control processes during the LRA development:

- The applicant developed written procedures, guidelines and positions papers to direct implementation of the scoping and screening methodology, control LRA development, and describes training requirements and documentation.
- The LRA was examined by the applicant's team in a structured self assessment, which included independent reviews, lesson learned sessions, review by the discipline lead engineer, approval by the license renewal discipline lead and owner acceptance by the license renewal project manager.
- The LRA was examined by internal self assessment teams, including the license renewal team, system engineers, subject matter experts, a quality assurance audit, plant review board, and the off-site review committee. Each of these self assessments included different levels of plant and organizational management.
- The LRA was examined by external assessment teams, including industry peer reviews. Additional participation and benchmarking was also done of recent license renewal applicants.
- The comments received through the assessment process were addressed and managed by peer and management review. The audit team reviewed the applicant's self assessment and a sample comment resolution table and determined that the applicant's comment resolution process is consistent and adequate.
- The applicant used its corrective action process to track and capture any identified issues for resolution.

The audit team performed a sample review of reports and LRA development guidance, the applicant's documentation of the activities performed to assess the quality of the LRA, and held discussions with the applicant's license renewal personnel. The audit team determined that the applicant's activities provide assurance that LRA development activities were performed consistently with the applicant's license renewal program requirements.

VII. Training for License Renewal Project Personnel

The audit team reviewed the applicant's training process to ensure the guidelines and methodology for the scoping and screening activities were applied in a consistent and appropriate manner. The applicant required training for all personnel participating in the development of the LRA and used only trained and qualified personnel to prepare the scoping and screening implementing procedures and reports.

- Training was required for the license renewal project personnel which followed documented and written guidance.
- Initial orientation training/overview of license renewal was provided to all license renewal project personnel regardless of previous experience.
- The required training included structured modules, self study activities, required reading and performance demonstration and discussion with department leads. Training of license renewal project personnel was captured and documented in indoctrination records.
- The training process included benchmarking of industry license renewal developments through Nuclear Energy Institute (NEI) taskforce and working groups, NRC license renewal audits and interactions with industry peers.
- The applicant conducted information systems training, aging management program (AMP) workshops and time-limited aging analyses (TLAA) workshops plant personnel.
- Mentoring was provided to license renewal project personnel by staff with experience in other license renewal projects.

On the basis of discussions with the applicant's license renewal personnel responsible for the scoping and screening process, and a review of selected documentation in support of the process, the NRC audit team determined that the applicant's personnel understood the requirements and adequately implemented the scoping and screening methodology established in the applicant's renewal application.

VIII. Final Briefing

A final briefing was held with the applicant on October 22, 2009, to discuss the results of the scoping and screening methodology audit. The audit team 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 1
2. NEI 95-10, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 The License Renewal Rule," Revision 6

3. PI-1, "Scoping and Screening of Systems, Structures and Components for STARS License Renewal Projects"
4. TR-1PV, "Anticipated Transients Without Scram (ATWS) License Renewal Positions Paper"
5. TR-2PV, "Station Blackout (SBO) License Renewal Positions Paper"
6. TR-3PV, "Fire Protection License Renewal Positions Paper"
7. TR-4PV, "Environmental Qualification (EQ) License Renewal Positions Paper"
8. TR-5PV, "Pressurized Thermal Shock (PTS) License Renewal Positions Paper"
9. TR-6PV, "Criterion (a)(2) License Renewal Positions Paper"
10. TR-7PV, "Electrical/I&C Plant Spaces Approach License Renewal Positions Paper"
11. TR-8PV, "Aging Effects Topical Report"
12. TR-9PV, "Plant Systems and Aging Management Programs Topical Report"

X. NRC Audit Team Members

Bill Rogers	NRR/DLR
On Yee	NRR/DLR
Donald Britner	NRR/DLR
James Shea	NRR/DLR
Edward Smith	NRR/DSS

XI. Applicant Personnel Contacted During Audit

W. Grover Hettel	Director, Operations, PVNGS
John Hesser	Vice President, Nuclear Engineering, PVNGS
Dwight Mims	Vice President, Nuclear Regulatory Affairs and Plant Improvement, PVNGS
Bob Bemert	Vice President, Nuclear Operations, PVNGS
Ron Barnes	Director, Nuclear Regulatory Affairs, PVNGS
Scott Baurer	Director, Nuclear Regulatory Affairs, PVNGS
Joe Waid	Director, Nuclear Training, PVNGS
Marcia Lacal	Director, Performance Improvement, PVNGS

Angie Krainik	Department Leader, License Renewal, PVNGS
Glenn Michael	Licensing Engineer, License Renewal, PVNGS
John Scott	Department Leader, Nuclear Assurance, PVNGS
Rob Henry	Site Representative, Salt River Project
Chalmer Meyer	Production Manager, STARS Center of Business
Eric Blocher	Project Manager, STARS Center of Business - PVNGS
Gary Warner	Project Manager, STARS Center of Business – South Texas Project
Tony Harris	Manager, STARS Center of Business

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Sincerely,
/RA/

Lisa M. Regner, Sr. Project Manager
Projects Branch 2
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Letter to R. Edington from L. Regner dated July 13, 2010

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