

July 13, 2009

Mr. David A. Heacock
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Innsbrook Technical Center – 2SW
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SUBJECT: SCOPING AND SCREENING AUDIT REPORT REGARDING THE KEWAUNEE
POWER STATION, LICENSE RENEWAL APPLICATION (TAC NO. MD9408)

Dear Mr. Heacock:

By letter dated August 12, 2008, Dominion Energy Kewaunee, Inc. (Dominion), submitted an application for renewal of Operating License DPR-43 for the Kewaunee Power Station (KPS). The staff of the U.S. Nuclear Regulatory Commission (NRC or the staff) is reviewing this application in accordance with the guidance in NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants."

During the week of March 10, 2009, the staff led a project team responsible for auditing and reviewing the applicant's administrative controls governing implementation of the license renewal application (LRA) scoping and screening methodology. The staff reviewed the technical basis for selected scoping and screening results for various plant systems, structures, and components. In addition, the staff reviewed quality attributes for aging management programs, quality practices used during LRA development and the training for personnel that developed the LRA. A summary of the audit and review results is enclosed for your information. No specific action or written response is required.

If you have any questions, please contact me by telephone at 301-415-4049 or by e-mail at samuel.hernandez@nrc.gov.

Sincerely,

/RA/

Samuel Hernández, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-305

Enclosure:
As stated

cc w/encl: See next page

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Letter to David A. Heacock from Samuel Hernandez dated July 13, 2009

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**KEWAUNEE POWER STATION
LICENSE RENEWAL APPLICATION
SCOPING AND SCREENING METHODOLOGY
AUDIT REPORT**

I. Introduction

During the week of March 10-13, 2009, the Division of License Renewal, Engineering Review Branch 2, performed an audit of the Dominion Energy Kewaunee (the applicant) license renewal scoping and screening methodology developed to support the license renewal application (LRA) for the Kewaunee Power Station (KPS). The audit was performed at the applicant's facility located in Carlton, Wisconsin. 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 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 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 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 screened to determine if they are long-lived, passive equipment that is subject to an AMR in accordance with 10 CFR 54.21(a)(1).

III. Scoping Methodology

The scoping evaluations for the KPS 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 also reviewed a sample of system scoping results for the followings systems and structures: (1) auxiliary feedwater, (2) safety injection, (3) spent fuel pool cooling, and (4)

ENCLOSURE

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:

- LRA Section 2.1.1, "Introduction," states that scoping and screening were performed consistent with the guidelines presented in NEI 95-10 [the LRA discussed two clarifications concerning the application of NEI 95-10, neither of which were applicable to determining nonsafety-related SSCs within the scope of license renewal in accordance with 10 CFR 54.4(a)(2)].

LRA Section 2.1.3.6.1, "Spatially Oriented NS SSCs Not Directly Attached to SR SSCs," states, in part:

NS components containing or potentially containing moderate or low energy fluids (i.e. $\leq 200^{\circ}\text{F}$ or ≤ 275 psig) were also included in license renewal scope unless both 2(a) and 2(b) below applied:

- (a) The NS component could not directly leak or spray on SR components in the immediate area because one of the following conditions existed:
 - The NS component was located in a room, cubicle, enclosure, tunnel, or enclosed corridor, which did not contain any SR mechanical or electrical components.
 - The NS component was located in an open space, but was separated from SR mechanical or electrical components by solid physical barriers such as walls, floors, ceilings and/or major plant equipment (e.g., the main condenser).
 - The NS component was located in an open space, was maintained at or near atmospheric pressure, and there were no SR mechanical or electrical components located within the collapse envelope of the NS component.
- (b) The fluid contents of the NS components could not flow from the area through doorways, grating, or floor penetrations, and then drain or drip on or flood SR mechanical or electrical components in adjacent areas, unless an analysis demonstrated that the SR components would not be adversely impacted.

The staff has determined that the concept of a "collapse envelope" is not addressed in NEI 95-10, Appendix F, as a basis for not including fluid filled non-safety related SSCs, in the proximity of safety-related SSCs, within the scope of license renewal. In addition, during the NRC scoping and screening methodology audit, the staff performed a walkdown of two nonsafety-related systems, in the proximity of safety-related SSCs, which were not included within the scope of license renewal based on the concept of the collapse envelope. The staff determined that in addition to the use concept of the collapse envelope there were additional mitigative features not discussed in the LRA (dikes and enclosures). The staff requested that the applicant provide a discussion which states that an exception was taken to guidance of NEI 95-

10 and provide the basis for the exception (the collapse envelope), for not including nonsafety-related SSCs, within 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 further 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 (1) auxiliary feedwater, (2) safety injection, (3) spent fuel pool cooling, and (4) 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, "USAR Supplement," and Appendix B, "Aging Management Programs," of the KPS 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 A1.0, "Introduction – Quality Assurance Program and Administrative Controls," 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 utilized the following quality control processes during the LRA development:

- The applicant developed written plans and procedures to direct implementation of the scoping and screening methodology, control LRA development, and describe training requirements and documentation.
- The applicant considered pertinent issues in previous license renewal applications and corresponding requests for additional information to determine the applicability to the Kewaunee LRA.

- The LRA was reviewed by industry peers, Dominion Power internal assessment teams, and the site Facility Safety Review Committee (FSRC) prior to submittal to the NRC.
- The applicant addressed comments received through the assessment process and managed them through peer and management review.
- The applicant maintains a Document Modification Request (DMR) database which tracks requests and changes made to License Renewal documents and drawings. Proposed changes were reviewed by a minimum of 3 personnel prior to the change being made.

The audit team determined, on the basis of its review of reports and LRA development guidance, discussion with the applicant's license renewal personnel, and a review of the applicant's documentation of the activities performed to assess the quality of the LRA, that the applicant's quality assurance 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.

As outlined in the applicant's license renewal project guideline, the applicant required training and documentation for personnel participating in the LRA development. Applicant personnel were required to complete and actively participate in industry OE training while participating in LRA activities for KPS. Training materials included the applicant's project guidelines; pertinent industry documents; 10 CFR Part 54 and its statement of considerations; NEI 95-10, Revision 6; Regulatory Guide 1.188 ; SRP-LR; NUREG-1801, Generic Aging Lessons Learned (GALL) Report," Revision 1; and attending an orientation session on license renewal.

Qualification and training records and a check list served as documentation for each individual's completed license renewal training. The audit team reviewed completed qualification and training records and completed check lists for some of the applicant's license renewal personnel.

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 March 13, 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. DOM-QA-1 Topical Report- Nuclear Facility Quality Assurance Program Description
4. KLR-0501 QA Requirements and Document Control for Kewaunee
5. KLR-1103 Integrated Plant Assessment Report- Structures and Component Supports
6. KLR-1405 Review of Stored Equipment
7. KLR-0201 Scoping and Screening Methodology
8. KLR-1107 Integrated Plant Assessment Report- Auxiliary Systems
9. KLR-1106 Integrated Plant Assessment Report- Electrical Components
10. KLR-1408 Electrical Cables and Connections Supplemental Report
11. KLR-1108 Integrated Plant Assessment Report- Steam and Power Conversion System
12. KLR-1002 10 CFR 54.4(a)(2) Non-Safety-Related Affecting Safety-Related

X. NRC Audit Team Members

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Samuel Hernandez	NRR/DLR	James Shea	NRR/DLR
Robert Sun	NRR/DLR	Edward Smith	NRR/DSS

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Paul Aitken	Dominion	David Wootten	Dominion
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Charles Sorrell	Dominion	Tapas Das	Dominion
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