

April 21, 2009

Mr. Michael D. Wadley
Site Vice President
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Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

SUBJECT: SCOPING AND SCREENING AUDIT SUMMARY REGARDING THE PRAIRIE
ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2, LICENSE
RENEWAL APPLICATION (TAC NOS. MD8513 AND MD8514)

Dear Mr. Wadley:

By letter dated April 11, 2008, Nuclear Management Company, LLC (NMC), now known as Northern States Power Company, submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54) to renew the operating license for Prairie Island Nuclear Generating Plant, Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (NRC or the staff).

During the week of August 4, 2008, 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.

If you have any questions, please contact me at 301-415-1427 or e-mail Richard.Plasse@nrc.gov.

Sincerely,

/RA/

Richard Plasse, Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure:
As stated

cc w/encl: See next page

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DATE	11/26/08	4/21/2009	4/20/2009

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Letter to M. Wadley from R. Plasse, dated April 21, 2009

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SUBJECT: SCOPING AND SCREENING AUDIT SUMMARY REGARDING THE PRAIRIE
ISLAND NUCLEAR GENERATING PLANT, UNITS 1 & 2, LICENSE RENEWAL
APPLICATION (TAC NOS. MD8513 AND MD8514)

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SCOPING AND SCREENING METHODOLOGY TRIP REPORT FOR THE NUCLEAR MANAGEMENT COMPANY, LLC, LICENSE RENEWAL APPLICATION FOR THE PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNITS 1 AND 2

I. Introduction

During the week of August 4-7, 2008, the Division of License Renewal, Engineering Review Branch 2, performed an audit of the Nuclear Management Company, LLC, (the applicant) license renewal scoping and screening methodology developed to support the license renewal application (LRA) for the Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP). The audit was performed at the applicant's facility located near Welch, Minnesota. The focus of the staff's audit was on 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 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 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 PINGP 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

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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 following systems and structures: (1) main steam system, (2) residual heat removal system, (3) turbine building, and (4) intermediate 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:

- During the scoping and screening methodology audit, the applicant stated that there were plant defined safety-related components which were not included within the scope for license renewal in accordance with 10 CFR 54.4(a)(1) because they were not relied upon to remain functional during and following a design-basis event to ensure (i) the integrity of the reactor coolant pressure boundary; (ii) the capability to shut down the reactor and maintain it in a safe shutdown condition; or (iii) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in 10 CFR 50.34(a)(1), 50.67(b)(2), or 100.11. During the audit, the applicant stated that although the waste gas decay tanks were defined as safety related per the plant's definition of safety related, they were not in scope for license renewal because they did not meet the above criteria (i), (ii), or (iii). Specifically for criteria (iii), the applicant stated that the plant's criteria for safety-related were more conservative than the license renewal criteria because PINGP committed to the more conservative 1% of the 10 CFR 100.11 exposure guidelines following a design basis accident. The applicant also documented that the term "comparable" in criteria (iii) has been defined by the nuclear industry as greater than or equal to 10% and the value is consistent with NRC guidance in Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants."

The staff requested the applicant provide specific documentation, references, and citations that define the term "comparable," as used in 10 CFR 54.4(a)(1)(iii), to be greater than or equal to 10% and provide a discussion of the process for determining the safety-related waste gas decay tanks were not within the scope of license renewal.

- During the scoping and screening methodology audit, the applicant stated that there were plant defined safety-related components which were not included within the scope for license renewal in accordance with 10 CFR 54.4(a)(1) because requirements for those components had been eliminated, although they remain installed.

The staff requested the applicant provide a discussion of the process for determining the safety-related boric acid storage tanks were not within the scope of license renewal in accordance with 10 CFR 54.4(a)(1).

- LRA Section 2.1.2.5.5 states, "Abandoned equipment that is removed from the plant or disconnected and drained does not have a potential for spatial interaction (i.e. no fluids contained in the SSC), and is not within the scope of License Renewal. Abandoned

equipment that is installed and connected to plant process pipes needs to be evaluated for non-safety attached to safety and non-safety affecting safety spatial interaction scoping criteria.”

During the scoping and screening methodology audit, the applicant stated that not all abandoned equipment had been verified as disconnected and drained. However, this abandoned equipment had not been included within the scope of license renewal. The staff requested that the applicant describe the methods used and the basis for conclusions, in determining that nonsafety-related abandoned systems and attached piping, which had not been verified as disconnected and drained, were not included within the scope of license renewal.

The audit team also discussed the following with the applicant:

- The team discussed the scoping methodology as applicable to the cooling water system. The staff identified two large 30” standpipes (one for each unit), which had been included within the scope of license renewal per 10 CFR 54.4(a)(2) and 10 CFR 54.4(a)(3). The staff requested the applicant clarify the criteria for scoping, specifically for the standpipes or explain why portions of this piping are within the scope of license renewal for 10 CFR 54.4(a)(2) and 10 CFR 54.4(a)(3).
- During the scoping and screening methodology audit, the staff performed a walkdown of a portion of the component cooling system and reviewed corresponding license renewal drawings. The staff identified inconsistencies between the license renewal drawing, LR-39246-2, for the component cooling system and the plant configuration. The staff requested that the applicant revise the license renewal drawings to reflect current plant conditions.

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) main steam system, (2) residual heat removal system, (3) turbine building, and (4) intermediate 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 PINGP 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 plant-specific AMPs and their associated quality attributes, provided in Appendix A, Section A.2.0 and Appendix B, Section B.1.3 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 audit team reviewed the QA 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 QA processes during the LRA development:

- The scoping and screening methodology was governed by written procedures, and guidelines.
- The LRA was examined by the applicant's team in a structured self assessment.
- The LRA was examined by internal assessment teams including a plant operation review committee, peer review validation, legal review, and regulatory affairs review. Additionally, a site vice president review, validation, certification process, and source document change control were implemented. Each of these teams included different levels of plant and organizational management.
- Pre-activity briefings were conducted prior to new major evolutions.
- The LRA was examined by external assessment teams including peer reviews done by teams of personnel from other license renewal applicants.

The audit team determined that, based on the review of reports and LRA development guidance, and a discussion with the applicant's license renewal personnel, the quality assurance activities met current regulatory requirements and provided additional assurance that LRA development activities were performed consistently with the applicant's LRA 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. The training attributes included the following:

- Engineering supervisors had hands on experience supplemented with: classroom training, mentoring, and benchmarking through the NEI task force, working groups, and peers.
- Contractor staff had previous license renewal experience from other sites.
- Each license renewal staff completed general license renewal training requirements, and training in discipline-specific areas.
- Initial qualification was completed before the project started and included the review of the license renewal process, license renewal project guidelines, and relevant industry documents such as 10 CFR Part 54 regulations, NEI 95-10, Regulatory Guide 1.188, and NUREG-1801, "Generic Aging Lessons Learned Report," Revision 1 (GALL Report).
- The PINGP license renewal training procedure was based on the Point Beach format.
- Personnel qualification shows experience of license renewal staff having more than 20 years of experience.

The audit team reviewed completed qualification and training records of several of the applicant's license renewal personnel responsible for the scoping and screening process. Additionally, based on discussions with the applicant's license renewal personnel during the audit, the audit team determined that the personnel were knowledgeable on the scoping and screening methodology specific technical issues within their areas of responsibility.

VIII. Final Briefing

A final briefing was held with the applicant on August 7, 2008, 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. The staff will consider issuing Requests For Additional Information (RAIs) to address these issues, and the staff's evaluation will be documented in the SER.

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. Advanced License Extension (ALEX) Process Management System, License Renewal Database
4. LRPP 1-5, "Training Plan for License Renewal Personnel," Revision 0
5. LRPP 1-7, "License Renewal Development and use of Technical Evaluations," Revision 1
6. LRPP 2-1, "Scoping and Screening for License Renewal," Revision 0
7. LRPP 2-7, "Guidelines for Highlighting License Renewal Boundary Drawings," Revision 1
8. H-1, "Quality List Classification Criteria," Revision 13
9. LR-TR-501, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(3) for Pressurized Thermal Shock," Revision 1
10. LR-TR-502, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(3) for Anticipated Transients Without Scram (ATWS)," Revision 1
11. LR-TR-503, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(3) for Station Blackout," Revision 4
12. LR-TR-504, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(3) for Fire Protection," Revision 4
13. LR-TR-505, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(3) for Environmental Qualification," Revision 1
14. LR-TR-507, "Identification of SSCs Within the Scope of 10 CFR 54.4(a)(2) for Non-safety Affecting Safety," Revision 3
15. LR-TR-514, "Identification of Thermal Insulation of SSCs Within Scope of 10 CFR 54.4(a)," Revision 2
16. LR-TR-516, "Identification of Mechanical Systems," Revision 5
17. LR-TR-517, "Identification of Containments, Structures, and Component Supports," Revision 3

18. LR-TR-518, "Identification of Electrical Systems," Revision 0
19. LR-TR-522, "Identification of Staged SSCs Within Scope of 10 CFR 54.4," Revision 1
20. LR-TR-523, "Identification of SSCs Within Scope of 10 CFR 54.4(a)(1) for Design Bases Events," Revision 2
21. LR-TR-525, "Identification of Abandoned SSCs Within Scope of 10 CFR 54.4(a)," Revision 1
22. LR-TR-535, "Scoping for Transmission System Portion of Substation," Revision 1
23. LR-SSR-110, "Residual Heat Removal System," Revision 2
24. LR-SSR-136, "Main Steam System," Revision 2
25. LR-SSR-140D, "Screenhouse System," Revision 2
26. LR-SSR-141B, "Turbine Building System," Revision 2
27. LR-193817, "Prairie Island Nuclear Generating Plant Site Layout of the Owner Controlled Area," Revision 2
28. LR-XH-1-31, "License Renewal Boundary Drawing Flow Diagram Residual Heat Removal System – Unit 1," Revision 1
29. LR-XH-1001-8, "License Renewal Boundary Drawing Flow Diagram Residual Heat Removal System – Unit 2," Revision 2
30. LR-39218, "License Renewal Boundary Drawing Main Auxiliary Steam and Steam Dump Flow Diagram – Unit 1," Revision 2
31. LR-39219, "License Renewal Boundary Drawing Main Auxiliary Steam and Steam Dump Flow Diagram – Unit 2," Revision 3

X. Personnel Contacted During the Scoping and Screening Methodology Audit

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XI. NRC Participants

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Alice Paulsen	Nuclear Regulatory Commission
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Stanley Gardocki	Nuclear Regulatory Commission
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