REVISED: 9/7/2010

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
NORTHERN STATES POWER COMPANY	)	Docket Nos. 50-282-LR/ 50-306-LR
	)	
(Prairie Island Nuclear Generating Plant,	)	
Units 1 and 2)	)	

NRC STAFF TESTIMONY OF RICHARD A. PLASSE
CONCERNING SAFETY CULTURE CONTENTION

Q1. Please state your name, occupation, and by whom you are employed.

A1. My name is Richard A. Plasse ("Plasse"). I am employed as a project manager in the Nuclear Regulatory Commission's Office of Nuclear Reactor Regulation, Division of License Renewal. A statement of my professional qualifications is attached hereto.

Q2. Please describe your current responsibilities.

A2. I am a project manager ("PM") for safety reviews of license renewal applications. I am presently the safety PM for the Prairie Island Nuclear Generating Plant (PINGP) license renewal application and the Seabrook Station license renewal application.

Q3. Please describe your duties with respect to the NRC Staff's review of the PINGP license renewal application.

A3. As the PM, I am the principal point of contact in NRR for the safety review of the PINGP License Renewal Application (LRA). I coordinated the Staff's evaluation of the PINGP LRA and preparation of the Staff's Safety Evaluation Report (SER) with Open Items, which was issued to the public in June 2009. (NRC Staff Exhibit No. ~~2~~NRC000002). In addition, I

coordinated the Staff's final SER (NRC Staff Exhibit No. ~~1~~NRC000003), which was issued to the public in October 2009.

Q4. What is the purpose of your testimony?

A4. The purpose of my testimony is to explain the basis for the Staff's conclusion that there is reasonable assurance that the effects of aging will be managed at PINGP during the period of extended operations.

Q5. Have you reviewed the assertions made by the Prairie Island Indian Community in the contention it filed on November 23, 2009, which was admitted by the Atomic Safety and Licensing Board in this proceeding in amended form on January 28, 2010?

A5. Yes.

Q6. Do you agree with the contention's assertion that PINGP's safety culture is not adequate to provide reasonable assurance that PINGP can manage the effects of aging during the period of extended operation?

A6. No, I do not agree.

Q7. Please provide a summary of the bases for your position.

A7. Based on the Staff's safety review, onsite audits, and inspections, the Staff concluded that there is reasonable assurance that PINGP can manage the effects of aging during the period of extended operation. In Section 6 of the SER (NRC Staff Exhibit No. ~~1~~NRC000003), the Staff wrote:

> The staff of the U.S. Nuclear Regulatory Commission (the staff) reviewed the license renewal application (LRA) for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2, in accordance with the NRC regulations and NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," dated September 2005. Title 10, Section 54.29, of the *Code of Federal Regulations* (10 CFR 54.29) provides the standards for issuance of a renewed license. Pursuant to 10 CFR 54.29(a), the Commission may issue

> a renewed license if it finds that actions have been identified and have been or will be taken, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis (CLB). On the basis of its review of the LRA, the staff determines that the requirements of 10 CFR 54.29(a) have been met.

Q8. What did the Staff do in order to come to its conclusion regarding reasonable assurance?

A8. The Staff's safety review of license renewal applications is guided by two documents: NUREG-1800, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," Rev.1, dated September 2005, (SRP-LR) (NRC Staff Exhibit No. 4NRC000004) and NUREG-1801, "Generic Aging Lessons Learned Report," Rev. 1, dated September 2005 (GALL Report). The SRP-LR guides the Staff's review by assigning responsibilities among staff technical organizations, and describing methods for identifying structures, systems and components subject to aging management review. The SRP-LR also identifies the ten elements of an effective aging management program. The ten elements are: (1) scope of program; (2) preventive actions; (3) parameters monitored/inspected; (4) detection of aging effects; (5) monitoring and trending; (6) acceptance criteria; (7) corrective actions; (8) confirmation process; (9) administrative controls; and (10) operating experience. Each element is defined in SRP-LR Section A.1.2.3 "Aging Management Program Elements." The SRP-LR allows an applicant to reference in its LRA the aging management programs (AMPs) described in the GALL Report. The GALL Report contains generic aging management programs that are acceptable to the Staff based upon experiences and analyses of existing programs at operating plants during the initial licensing period. License renewal applicants may reference the GALL Report to demonstrate compliance with the requirements of the license renewal rule. A license

renewal applicant's use of an AMP identified in the GALL Report constitutes reasonable assurance that the applicant will manage the targeted aging effect during the period of extended operation. Similarly, a license renewal applicant's commitment to implement an AMP that the Staff finds consistent with the GALL Report constitutes reasonable assurance that it will manage the targeted aging effect during the renewal period.

The purpose of the Staff's review was to determine whether PINGP's AMPS are sufficient to manage aging for systems, structures, and components in specific environments and/or subject to specific stressors. During the Staff's in-office technical review, the Staff reviewed the LRA (as supplemented with additional information provided by the applicant) and supporting documentation based on NUREG-1800. Onsite audits and inspections were performed by NRC teams, composed of technical, program, and operational experts from the NRC and its consultants, to review onsite documentation supporting the application and to address any issues that came up during the Staff's review of the application.

The documents submitted in connection with the application were reviewed to determine if the applicant met the technical and regulatory requirements of the regulations. The applicant must identify those systems, structures, and components that are within the scope of license renewal and subject to an aging management review and must also identify applicable aging effects and describe the AMPs that it plans to use to manage aging.

- For AMPs for which the applicant claimed consistency with the GALL AMPs, the staff conducted either an audit or a technical review to verify the claim.
- For each AMP with one or more deviations, the staff evaluated each deviation to determine whether the deviation was acceptable and whether the modified AMP would adequately manage the aging effect(s) for which it was credited.
- For AMPs not evaluated in the GALL Report, the staff performed a full review to

determine their adequacy. In its full review, the staff evaluated the AMPs against the 10 program elements defined in SRP-LR.

Based on the reviews, analysis, inspections, and audits described above the Staff determined that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis and that the requirements of 10 CFR 54.29(a) have been met.

Q9. Describe the PINGP AMPs and explain how they become part of PINGP's current licensing basis (CLB).

A9. In its LRA the Applicant described 43 AMPs that it relies on to manage or monitor aging for the PINGP Units 1 and 2. Twenty-nine are existing programs and fourteen are new programs. All existing programs are already part of the plant's CLB. All new programs are documented as commitments in Appendix A of the SER. Following the issuance of the renewed operating license, the summary descriptions of the AMPs and the final list of license renewal commitments provided in Appendix A of the SER will be incorporated into the PINGP updated FSAR as part of the periodic FSAR update in accordance with 10 CFR 50.71(e). When the FSAR is updated, the AMP commitments will become part of the CLB. Ultimately, all AMPs will be in the CLB: AMPs in the form of commitments will become part of the CLB as a result of the FSAR update and AMPs in the form of existing programs that are already part of the CLB will continue to reside there.

Q10. Please describe the role of the ACRS and its Subcommittee in the NRC's license renewal process.

A10. The Advisory Committee on Reactor Safeguards (ACRS) is statutorily mandated by the Atomic Energy Act of 1954, as amended. With respect to license renewal, the ACRS

fulfills the requirement of 10 CFR 54.25 to review and report on all license renewal applications and to make recommendations to the Commission. The ACRS and its subcommittees are comprised of academic and scientific experts in various fields. They are structured to provide a forum where experts representing many technical perspectives can provide independent advice that is factored into the Commission's decision making process. The ACRS meetings are open to the public and any member of the public may request an opportunity to make an oral statement during the committee meetings. Transcripts of the meetings are maintained on the ACRS website at www.nrc.gov. As is customary, the ACRS assigned one of its subcommittees to the PINGP license renewal application, to gather information, analyze relevant issues and facts, and formulate a proposed position and proposed action for consideration by the full committee. The ACRS subcommittee reviewed the PINGP license renewal application and associated documents during its subcommittee meeting on July 7, 2009, and, at that meeting, had the benefit of discussions with representatives of the NRC technical staff and the applicant. During the 568th meeting of the ACRS, in December 2009, the ACRS completed its review of the PINGP LRA and the Staff SER. During the December meeting, the ACRS members conducted detailed follow-up discussions on the reactor cavity leakage issue with the applicant and NRC technical staff. The discussions were focused on understanding the evaluations performed, actions taken by the applicant, and commitments planned to be performed by the applicant to address the refueling cavity leakage issue. The ACRS subsequently agreed with the Staff's conclusion by letter to the NRC Commissioner, dated December 10, 2009. During the ACRS and subcommittee meetings associated with the PINGP LRA review, no member of the public made any oral statements.

Q11. What did the ACRS conclude with respect to the Staff's SER for PINGP?

A11. By letter to the NRC Commissioner, dated December 10, 2009, the ACRS

concluded that the programs established and committed to by the applicant to manage age-related degradation provide reasonable assurance that PINGP, Units 1 and 2 can be operated in accordance with their CLB for the period of extended operation without undue risk to the health and safety of the public, and that the application for renewal should be approved. NRC Staff Exhibt No. 3.

Q12. The SER included an Open Item related to refueling cavity leakage at PINGP. Please explain why the Staff established refueling cavity leakage as an Open Item in its PINGP SER.

A12. An item is considered open if, in the staff's judgment, it has not been shown to meet all applicable regulatory requirements at the time of issuance of the SER. During the AMP audit, the Staff discovered an ongoing issue with water seepage, from the refueling cavity into the containment sumps. Based on its review of the information provided, the Staff determined that borated water was coming into contact with the containment vessel during refueling outages, and that portions of the containment vessel may remain wetted after refueling outages. At the time of issuance of the SER, the Staff did not have enough information to conclude that NSPM had identified the appropriate actions to effectively manage the effects of aging related to refueling cavity leakage during the period of extended operation for the containment vessel. This resulted in the establishment of the Open Item.

Q13. What does it mean to "close" an Open Item?

A13. The Staff closes an Open Item when the applicant has provided the necessary information to the Staff, which can support a conclusion by the Staff, that all applicable regulatory requirements are met for a particular Open Item.

Q14. The Staff closed the refueling cavity leakage Open Item on what basis?

A14. The Staff closed the refueling cavity leakage Open Item based on the Staff

review of the commitments provided by the applicant to address the refueling cavity leakage issue. The Staff concluded that the applicant demonstrated that the effects of aging will be adequately managed so that the intended function(s) of the containment structure will be maintained consistent with the CLB for the period of extended operation, as required by 10 CFR 54.21(a)(3). The Staff provided its analysis supporting closure of the refueling cavity leakage Open Item to the ACRS and its subcommittee.

Q15. What did the ACRS conclude with respect to refueling cavity leakage at PINGP?

A15. With respect to the reactor cavity leakage the ACRS heard presentations and analysis from the Staff and the applicant. The ACRS asked numerous follow-up questions during the presentations. The ACRS reviewed the Open Item closure documented in the Final SER and subsequently agreed with the Staff's conclusion. The ACRS concluded: "The programs established and committed to by NSPM provide reasonable assurance that the PINGP Units 1 and 2 can be operated in accordance with their current licensing bases for the period of extended operation without undue risk to the health and safety of the public."

Q16. Did the ACRS or the ACRS subcommittee determine whether PINGP will actually implement the AMPs in the SER?

A16. No.

Q17. Did the Staff determine whether PINGP will actually implement the AMPs in the SER?

A17. The Staff's determination of the adequacy of the AMPs presumes that if a license is issued, the licensee will implement the AMPs in accordance with the renewed licensing basis. Upon issuance of the renewed license, any license commitments the applicant made in connection with license renewal will become part of PINGP's current licensing basis. The plant's adherence to its current licensing basis is routinely examined by regional NRC staff on a

current and ongoing basis. Resident inspectors and other Regional Staff routinely conduct inspections and assessments to determine whether plants are in compliance with their current licensing basis and they will continue their inspections and assessments during the period of extended operations. Because the resident inspectors and Regional Staff will be conducting their inspections and assessments during the period of extended operations, there is no need for the Staff to try to determine now whether PINGP will actually implement the AMPs. The inspection and assessment process is designed so that if the AMPs are not implemented, the resident inspectors and Regional Staff will learn about it.

Q18. Does the NRC Staff verify the implementation of aging management programs made in connection with license renewal?

A18. Yes. After the license is issued, and prior to the period of extended operation, Regional Staff will perform a focused inspection in accordance with the guidance in NRC Inspection Manual Chapter 71003, "Post-Approval Site Inspection for License Renewal". (NRC Staff Exhibit NRC000005). The Post-Approval inspection will examine a sample of the aging management programs to determine whether the licensee has implemented them.