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10 CFR 54

U S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Units 1 and 2
Dockets 50-282 and 50-306
License Nos. DPR-42 and DPR-60

Supplemental Information Regarding Application for Renewed Operating Licenses

By letter dated April 11, 2008, Northern States Power Company, a Minnesota Corporation, (NSPM) submitted an Application for Renewed Operating Licenses (LRA) for the Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2. This letter amends the LRA to provide supplemental information addressing certain issues that have been raised as contentions in this License Renewal proceeding.

Enclosure 1 contains revisions to LRA Sections A2.27 and B2.1.27 to incorporate information regarding the plant-specific Nickel-Alloy Nozzles and Penetrations Program. Conforming changes are also provided for LRA Sections 2, 3, B1.1, B1.5, and B2.0.

Enclosure 2 provides an updated version of the Preliminary License Renewal Commitments list contained in the LRA transmittal letter. This updated list reflects the commitment changes made to date in NSPM correspondence.

If there are any questions or if additional information is needed, please contact Mr. Eugene Eckholt, License Renewal Project Manager.

Summary of Commitments

This letter contains no new commitments. Commitment No. 21 in the list of Preliminary License Renewal Commitments contained in the LRA transmittal letter dated April 11, 2008, is withdrawn.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on March 27, 2009.

Michael D. Wadley

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Enclosures (2)

cc:

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Resident Inspector, Prairie Island, USNRC
Prairie Island Indian Community ATTN: Phil Mahowald
Minnesota Department of Commerce

Enclosure 1
Revisions to LRA Sections 2 and 3 and Appendices A and B Regarding the Nickel-Alloy Nozzles and Penetrations Program

LRA Sections A2.27 and B2.1.27, and selected information in LRA Sections 2, 3, B1.1, B1.5, and B2.0, are hereby revised to provide updated information regarding the Nickel-Alloy Nozzles and Penetrations Program. The updated information designates the program as a plant-specific program, expands the level of detail in the LRA, and reflects the incorporation of new NRC requirements from 10 CFR 50.55a. The LRA changes are as follows:

In LRA Section 2.1.1.3, Interim Staff Guidance (ISG) Discussion, on Page 2.1-5, the second paragraph of the discussion for LR-ISG-19B is deleted and replaced with the following:

> The PINGP Nickel-Alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of Pressurized Water Reactors Program manages aging effects on the reactor head penetrations. With respect to the management of nickel-alloy nozzles and penetrations not associated with the reactor vessel head penetration nozzles, a plant-specific program, the Nickel-Alloy Nozzles and Penetrations Program, is credited with managing the effects of cracking due to PWSCC. As this issue evolves under the existing regulatory process, these programs will be modified as necessary in response to industry initiatives and NRC guidance and requirements.

In LRA Section 3.1.2.2.13, Cracking due to Primary Water Stress Corrosion Cracking (PWSCC), on Pages 3.1-14 and 3.1-15, the eighth sentence "For the Nickel-Alloy Nozzles and Penetrations Program ... and staff-accepted industry guidelines." is deleted and replaced with the following:

> The Nickel-Alloy Nozzles and Penetrations Program ranks the Alloy 600/82/182 locations for primary water stress corrosion cracking susceptibility and then utilizes inspections, mitigation techniques, and repair/replacement activities to manage the effects of cracking due to primary water stress corrosion cracking. The Nickel-Alloy Nozzles and Penetrations Program implements the inspection of the Alloy 600/82/182 materials through the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program.

In LRA Table 3.1.2-1, Reactor Vessel, Internals, and Reactor Coolant System - Pressurizer System - Summary of Aging Management Evaluation, on Page 3.1-51, in the line item for Surge Nozzle being managed by the Nickel-Alloy Nozzles and Penetrations Program, the Notes entry is changed from A, 111 to E, 111.

In LRA Table 3.1.2-4, Reactor Vessel, Internals, and Reactor Coolant System - Reactor Vessel System - Summary of Aging Management Evaluation, on Page 3.1-97, in the line item for Core Support Pads being managed by the Nickel-Alloy Nozzles and Penetrations Program, the Notes entry is changed from A to E.

Enclosure 1
Revisions to LRA Sections 2 and 3 and Appendices A and B Regarding the Nickel-Alloy Nozzles and Penetrations Program

In LRA Table 3.1.2-4, Reactor Vessel, Internals, and Reactor Coolant System - Reactor Vessel System - Summary of Aging Management Evaluation, on Page 3.1-100, in the line item for Instrumentation Tube Penetrations (Bottom Head) being managed by the Nickel-Alloy Nozzles and Penetrations Program, the Notes entry is changed from A to E.

LRA Section A2.27 on Pages A-11 and A-12 is revised in its entirety to read as follows:

A2.27 Nickel-Alloy Nozzles and Penetrations Program

The Nickel-Alloy Nozzles and Penetrations Program manages the aging effect of cracking due to primary water stress corrosion cracking (PWSCC) of nickel-alloy pressure boundary and structural components exposed to primary coolant. The Alloy 600/82/182 locations are ranked for PWSCC susceptibility. The program manages these components for cracking due to PWSCC utilizing inspections, mitigation techniques, and repair/replacement activities. The program implements the inspection of the Alloy 600/82/182 materials through the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program.

The program complies with applicable NRC Orders, and implements applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines.

In LRA Section B1.1, Overview, as revised in Enclosure 1 of NSPM letter dated March 12, 2009, the second paragraph, "Two of the programs consist of commitments ...NUREG-1801 Chapter IV." is deleted in its entirety and replaced with the following:

In certain cases a program may consist solely of a commitment if the associated NUREG-1801 program description is only comprised of specified commitment language in NUREG-1801 Chapter IV (e.g., NUREG-1801 Programs XI.M11 and XI.M16). Where this appendix provides a full ten element description of a program that NUREG-1801 only defines as a commitment, the program is designated a plant-specific program. Plant-specific programs are described in terms of their consistency with the ten generic program elements defined in Appendix A.1, Section A.1.2.3 of NUREG-1800.

In LRA Section B1.5, Aging Management Programs, on Page B-4, the introductory paragraph is revised to read as follows:

The AMPs credited with managing the effects of aging at PINGP are described in the following sections. Where these programs are addressed in NUREG-1801, they have been evaluated as being either fully consistent with, or, with some exceptions and/or enhancements, consistent with the NUREG-1801 programs. Where plant-specific AMPs are credited, they have been evaluated for

consistency with the ten elements of an acceptable aging management program defined in Appendix A.1, Section A.1.2.3 of NUREG-1800.

In LRA Section B2.0, Aging Management Programs Correlation, on Page B-7, line item XI.M11 of the NUREG-1801 program correlation table is revised to appear as follows:

NUREG-1801 ID	NUREG-1801 Program	PINGP Program	NUREG-1801 Comparison
XI.M11	Nickel-Alloy Nozzles and Penetrations	Nickel-Alloy Nozzles and Penetrations Program [Section B2.1.27]	Existing Plant-Specific Program

In LRA Section B2.0 on Page B-12, Note 1 is revised in its entirety to read, "Not Used."

LRA Section B2.1.27 on Page B-58 is revised in its entirety to read as follows:

B2.1.27 Nickel-Alloy Nozzles and Penetrations Program

Program Description

The Nickel-Alloy Nozzles and Penetrations Program manages the aging effect of cracking due to primary water stress corrosion cracking (PWSCC) of nickel-alloy pressure boundary and structural components exposed to primary coolant. The Alloy 600/82/182 locations are ranked for PWSCC susceptibility. The program manages these components for cracking due to PWSCC utilizing inspections, mitigation techniques, and repair/replacement activities. The Nickel-Alloy Nozzles and Penetrations Program implements the inspection of the Alloy 600/82/182 materials through the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program.

The program complies with applicable NRC Orders, and implements applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines.

NUREG-1800 Consistency

The Prairie Island Nuclear Generating Plant Nickel-Alloy Nozzles and Penetrations Program is an existing plant-specific program. The program consists of the ten elements of an acceptable AMP as described in NUREG-1800 Appendix A.1, Section A.1.2.3 and Table A.1-1.

Exceptions to NUREG-1800 or NUREG-1801

None

Enclosure 1
Revisions to LRA Sections 2 and 3 and Appendices A and B Regarding the Nickel-Alloy Nozzles and Penetrations Program

Enhancements

None

Aging Management Program Elements

The elements of the Nickel-Alloy Nozzles and Penetrations Program are described below. The results of an evaluation of each element with respect to the NUREG-1800, Appendix A.1, Section A.1.2.3, "Aging Management Program Elements" and Table A.1-1, "Elements of an Aging Management Program for License Renewal," are also provided.

Scope of Program

The Nickel-Alloy Nozzles and Penetrations Program manages the aging effect of cracking due to primary water stress corrosion cracking (PWSCC) of pressure boundary and structural components constructed of Alloy 600 and welds constructed of the associated Alloy 82/182 filler metals exposed to primary coolant. The scope of the Nickel-Alloy Nozzles and Penetrations Program includes the Reactor Vessel System instrumentation tube penetrations (bottom head), thirty-six in each Unit, constructed of Alloy 600; the Reactor Vessel System core support pads (Alloy 600), four in each Unit; and the Unit 2 pressurizer surge nozzle-to-safe end dissimilar metal weld (Alloy 82).

The program is based upon the industry guidance provided in EPRI MRP-126, "Generic Guidance for Alloy 600 Management" (1009561), November 2004 and NEI 03-08, "Guideline for the Management of Materials Issues," May 2003. The program complies with applicable NRC Orders, and implements applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines.

This AMP consists of PINGP activities that manage aging effects for components of the following systems:

- Pressurizer (PS) System
- Reactor Vessel (RV) System

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.1, Scope of Program.

Preventive Actions

The program considers various mitigative and repair options to ensure that nickel-alloy components continue to perform their intended functions during the period of extended operation. Selection of a mitigation strategy may be based upon available technology, ASME Code requirements, radiological conditions, and economic factors. Most mitigative actions implemented by the industry since the mid-1990s have utilized PWSCC resistant Alloy 690/52/152 materials.

To mitigate the effects of PWSCC on the Unit 2 pressurizer surge nozzle weld (Alloy 82), a full structural weld overlay (FSWOL) on the pressurizer surge nozzle-to-safe end dissimilar metal and safe end-to-reducer stainless steel butt welds was installed in October 2008 during the PINGP Unit 2 refueling outage (2R25). The FSWOL was installed using Alloy 52M weld material.

Preventive measures to mitigate PWSCC are in accordance with the PINGP Water Chemistry Program. The Water Chemistry Program manages aging effects by controlling concentrations of known detrimental chemical species such as chlorides, fluorides, sulfates and dissolved oxygen below the levels known to cause degradation. The program includes specifications for chemical species, sampling and analysis frequencies, and corrective actions for control of water chemistry. This program conforms to the EPRI PWR Primary Water Chemistry Guidelines. The PINGP Water Chemistry Program is further described in LRA Section B2.1.40, Water Chemistry Program.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.2, Preventive Actions.

Parameters Monitored/Inspected

The PINGP Nickel-Alloy Nozzles and Penetrations Program monitors for cracking due to PWSCC of Alloy 600/82/182 materials exposed to primary coolant. The program performs condition monitoring examinations of the lower reactor vessel head surface and each bottom-mounted instrumentation tube penetration. These examinations monitor for through-wall cracks that may exist in the nozzles or their associated partial penetration J-groove welds. For in-scope pressure boundary components, the program monitors for evidence of reactor coolant leakage which may manifest itself in the form of boric acid residues or corrosion products. The core support pads and the Unit 2 pressurizer surge nozzle-to-safe end weld are monitored for evidence of cracking. The Nickel-Alloy Nozzles and Penetrations Program implements the inspection of the Alloy 600/82/182 materials through the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.3, Parameters Monitored or Inspected.

Detection of Aging Effects

The program utilizes visual and volumetric examination techniques to detect cracking in Alloy 600/82/182 materials. 10 CFR 50.55a requires that all power reactors maintain an Inservice Inspection Program in accordance with the ASME Boiler and Pressure Vessel Code, Section XI. The Nickel-Alloy Nozzles and Penetrations Program implements the inspection of the Alloy 600/82/182

materials through the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program.

For the reactor vessel core support pads, the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program conducts a visual VT-1 examination of the accessible interior attachment welds per Table IWB-2500-1, Examination Category B-N-2, once per Inservice Inspection interval.

The FSWOL on the pressurizer surge nozzle-to-safe end dissimilar metal weld (Alloy 82) and safe end-to-reducer stainless steel butt weld was installed at PINGP Unit 2 with NRC approval. Inservice examinations are conducted ultrasonically with the examination volume as defined in ASME Section XI, Nonmandatory Appendix Q, Figure Q-4300-1. Inservice examinations as described in Q-4300 are performed in accordance with the requirements of MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines," with the additional requirement of at least one ultrasonic examination within ten years of the FSWOL application. The MRP-139 guidance for ISI goes beyond the current ASME Code inspection requirements for PINGP Unit 2.

With the installation of the FSWOL, the Unit 2 pressurizer surge nozzle-to-safe end weld reverts back to Category "B" per MRP-139 which will require examinations in accordance with the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program, with specified limitations, modifications and NRC-approved alternatives.

Reactor pressure vessel bottom head bare metal visual examinations are performed by removing insulation sections and/or examining under the insulation using remote viewing equipment that provides a high degree of resolution in order to identify very small volumes of boric acid that may result from Alloy 600 PWSCC. In response to NRC Bulletin 2003-02, PINGP committed to 100% bare metal visual inspection of the lower reactor pressure vessel dome up to and including each bottom mounted instrumentation (BMI) penetration to RPV junction every other refueling outage. Fully qualified and certified VT-2 examiners perform the inspections of the bottom head penetrations. The inspections are in compliance with ASME Code Case N-722, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials," as required by and modified by 10 CFR 50.55a(g)(6)(ii)(E). 10 CFR 50.55a(g)(6)(ii)(E) requires non-visual inspection for items where leakage is identified to determine whether circumferential cracking is present in the flawed material and if multiple circumferential flaws have initiated.

These inspections of nickel-alloy components ensure timely detection of cracking due to PWSCC prior to a loss of component intended function. The program complies with applicable NRC Orders, and implements applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.4, Detection of Aging Effects.

Monitoring and Trending

The Nickel-Alloy Nozzles and Penetrations Program ranked the Alloy 600/82/182 locations based on four main criteria: PWSCC susceptibility (e.g., operational time and temperature), failure consequence, leakage detection margin, and radiation dose rates. Additionally, material heat susceptibility and other industry experience were also considered.

The program incorporates the inspection schedules and frequencies for the nickel-alloy components in accordance with the PINGP ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program and, where applicable, ASME Code Case N-722, subject to the conditions specified in 10 CFR 50.55a(g)(6)(ii)(E). Flaw indications detected during the required examinations are dispositioned in accordance with the Acceptance Criteria and Corrective Actions program elements discussed below.

In accordance with ASME Code Case N-722, visual examinations of highly susceptible Alloy 600/82/182 pressure retaining components are required during each refueling outage. Other Alloy 600/82/182 pressure retaining components that are considered less susceptible to PWSCC cracking are required to be examined by visual examinations every other refueling outage or once per interval. The PINGP Nickel-Alloy Nozzles and Penetrations Program ranks the reactor pressure vessel bottom head penetrations as moderate for their lower susceptibility to PWSCC given the cooler temperature environment, good volumetric examination experience, and the medium-to-high failure consequence. ASME Code Case N-722 requires inspection of the reactor pressure vessel bottom head penetrations every other refueling outage.

The reactor vessel core support pads are structural, non-pressure retaining, components and consequently are not included in ASME Code Case N-722. In accordance with 10 CFR 50.55a(g)(6)(ii)(E)(1), the inspection requirements of ASME Code Case N-722 do not apply to components with pressure retaining welds fabricated with Alloy 600/82/182 materials that have been mitigated by weld overlay. Therefore, the Unit 2 pressurizer surge nozzle-to-safe end weld is not covered under ASME Code Case N-722.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.5, Monitoring and Trending.

Acceptance Criteria

The implementing procedure or work order specifies examination requirements and acceptance criteria in accordance with the applicable regulatory requirements or industry guidelines. The acceptance criteria, against which the

need for corrective actions are evaluated, ensure that the component intended functions are maintained under all current licensing basis design conditions during the period of extended operation.

For the reactor vessel core support pads, the PINGP ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program conducts visual VT-1 examination of the accessible welds. The PINGP ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program requires that indications and relevant conditions detected during examination be evaluated in accordance with ASME Section XI, Paragraph IWB-3520.1.

The Inservice Inspection requirements for the Unit 2 pressurizer surge nozzle-to-safe end weld for the extended period of operation will be in accordance with the PINGP ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program, with specified limitations, modifications and NRC-approved alternatives. Indications and relevant conditions detected during examination are required to be evaluated in accordance with ASME Section XI, Article IWB-3500. The weld is also subject to visual examination (VT-2) during pressure testing in accordance with ASME Section XI, Table IWB-2500-1, Examination Category B-P. The examination results are evaluated in accordance with the acceptance criteria of ASME Section XI, Paragraph IWB-3522.

Reactor pressure vessel bottom head bare metal visual examinations are performed in order to identify very small volumes of boric acid that may result from Alloy 600 PWSCC. The acceptance criteria for this examination is the lack of any relevant indication, namely evidence of any leakage arising from the penetration to head interface, and the lack of any boric acid accumulations on the carbon steel head surfaces that may result in corrosion. The acceptance standards are in accordance with ASME Section XI, Paragraph IWB-3522 per ASME Code Case N-722, subject to the conditions specified in 10 CFR 50.55a(g)(6)(ii)(E). The acceptance standards of ASME Section XI, Paragraph IWB-3522 are also applied to relevant indications identified during system pressure testing performed in accordance with ASME Section XI, Table IWB-2500-1, Examination Category B-P.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.6, Acceptance Criteria.

Corrective Actions

Indications are evaluated per the acceptance criteria, which determine relevant flaw indications that are unacceptable for further service. Relevant flaw indications are corrected through implementation of appropriate repair/replacement activities.

If visual examination of the reactor vessel instrumentation tube penetrations (bottom head) in accordance with ASME Code Case N-722 identifies leakage or

evidence of cracking, additional actions shall be performed as specified in paragraphs 10 CFR 50.55a(g)(6)(ii)(E)(2) through (4). If PWSCC related flaws are detected in the pressurizer surge nozzle FSWOL, the repair/replacement activity will include removal of the weld overlay and the original dissimilar metal weld.

Repair/replacement activities comply with ASME Section XI as invoked by 10 CFR 50.55a or approved ASME Code Cases as referenced in the latest version of NRC Regulatory Guide 1.147. Proposed alternative repair/replacement activities, if any, will be submitted to the NRC for review and approval in accordance with 10 CFR 50.55a(a)(3)(i) or 10 CFR 50.55a(a)(3)(ii).

Identified flaws are entered into the PINGP Corrective Action Program for appropriate disposition. A repair, replacement or an evaluation is performed for all flaws that exceed the acceptance standards.

See LRA Section B1.3 for further discussion of this element.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.7, Corrective Actions.

Confirmation Process

Corrective action effectiveness is part of the PINGP Corrective Action Program.

See LRA Section B1.3 for further discussion of this element.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.8, Confirmation Process.

Administrative Controls

See LRA Section B1.3 for the discussion of this element.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.9, Administrative Controls.

Operating Experience

A review of operating experience for the PINGP Nickel-Alloy Nozzles and Penetrations Program identified no adverse trends or issues with program performance. The review of operating experience, as discussed below, indicates that the Nickel-Alloy Nozzles and Penetrations Program is effective in utilizing inspections, mitigation techniques, and repair/replacement activities.

A visual VT-1 examination of the accessible welds of the reactor vessel core support pads was conducted in October 2004 for Unit 1 and in May 2005 for Unit

2. No recordable indications on the core support pads were detected in either Unit.

The PINGP Unit 2 pressurizer surge nozzle-to-safe end weld was ultrasonically examined in November 2006. The examination met the ASME Section XI and EPRI MRP-139 requirements for examination coverage. No PWSCC indications were detected. Ultrasonic examinations of the Unit 2 surge nozzle-to-safe end dissimilar metal weld were conducted again in September 2008, prior to installation of the full structural weld overlay (FSWOL). No reportable indications were identified. Then in October 2008, following installation of the FSWOL, ultrasonic examinations (UT) were performed of the new overlay weld and the nozzle-to-safe end dissimilar metal weld. 100 percent of the Code required volume was achieved during the examinations. The UT exams resulted in no recordable indications.

PINGP conducted bare metal visual examinations of the reactor vessel instrumentation tube penetrations (bottom head) in May 2006 for Unit 1 and April 2005 for Unit 2. No indications were observed.

Industry operating experience is monitored to incorporate any necessary changes to the program. PINGP participates in industry activities such as the Owners Group meetings and the EPRI Material Reliability Program initiatives to monitor or inspect for cracking due to PWSCC.

The PINGP Nickel-Alloy Nozzles and Penetrations Program effectively monitors the condition of components within the license renewal boundary and ensures aging effects are acceptably managed.

This element is consistent with the recommendations of NUREG-1800, Element A.1.2.3.10, Operating Experience.

Conclusion

The PINGP Nickel-Alloy Nozzles and Penetration Program is an existing program that manages the effects of cracking due to primary water stress corrosion cracking of the nickel-alloy pressure boundary and structural components exposed to primary coolant. The program has been effective in monitoring the nickel-alloy components and no adverse trends or significant conditions related to these components have been identified.

Implementation of the Nickel-Alloy Nozzles and Penetrations Program provides reasonable assurance that aging effects will be managed such that structures, systems, and components within the scope of this program will continue to perform their intended function(s) during the period of extended operation.

Enclosure 1
Revisions to LRA Sections 2 and 3 and Appendices A and B Regarding the Nickel-Alloy Nozzles and Penetrations Program

In the list of Preliminary License Renewal Commitments, Commitment 21 is deleted in its entirety. A revised preliminary commitment list which reflects this change is provided as Enclosure 2 to this letter.

Enclosure 2

Updated Preliminary License Renewal Commitment List

16 Pages

Prairie Island Nuclear Generating Plant
Preliminary License Renewal Commitments

The following table provides the list of preliminary commitments included in the Application for Renewed Operating Licenses (LRA) for Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2. These commitments reflect the contents of the LRA as submitted, and any updates provided in subsequent correspondence, but are considered preliminary in that the specific wording of some commitments may change, and additional commitments may be made, during the NRC review of the LRA.

The final commitments as submitted by NMC, and accepted by NRC, are expected to be confirmed in the NRC's Safety Evaluation Report (SER) for the renewed operating licenses. The final commitments, as confirmed in the SER, will become effective upon NRC issuance of the renewed operating licenses. In addition, as stated in the LRA, the final commitments will be incorporated into the Updated Safety Analysis Report (USAR).

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
1	Each year, following the submittal of the PINGP License Renewal Application and at least three months before the scheduled completion of the NRC review, NMC will submit amendments to the PINGP application pursuant to 10 CFR 54.21(b). These revisions will identify any changes to the Current Licensing Basis that materially affect the contents of the License Renewal Application, including the USAR supplements.	12 months after LRA submittal date and at least 3 months before completion of NRC review	1.4
2	Following the issuance of the renewed operating license, the summary descriptions of aging management programs and TLAAs provided in Appendix A, and the final list of License Renewal commitments, will be incorporated into the PINGP USAR as part of a periodic USAR update in accordance with 10 CFR 50.71(e). Other changes to specific sections of the PINGP USAR necessary to reflect a renewed operating license will also be addressed at that time.	First USAR update in accordance with 10 CFR 50.71(e) following issuance of renewed operating licenses	A1.0
3	An Aboveground Steel Tanks Program will be implemented. Program features will be as described in LRA Section B2.1.2.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.2

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
4	Procedures for the conduct of inspections in the External Surfaces Monitoring Program, Structures Monitoring Program, Buried Piping and Tanks Inspection Program, and the RG 1.127 Inspection of Water-Control Structures Associated with Nuclear Power Plants Program will be enhanced to include guidance for visual inspections of installed bolting.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.6
5	A Buried Piping and Tanks Inspection Program will be implemented. Program features will be as described in LRA Section B2.1.8.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.8
6	The Closed-Cycle Cooling Water System Program will be enhanced to include periodic inspection of accessible surfaces of components serviced by closed-cycle cooling water when the systems or components are opened during scheduled maintenance or surveillance activities. Inspections are performed to identify the presence of aging effects and to confirm the effectiveness of the chemistry controls. Visual inspection of component internals will be used to detect loss of material and heat transfer degradation. Enhanced visual or volumetric examination techniques will be used to detect cracking. [Revised in letter dated 1/20/2009 in response to RAI 3.3.2-13-01]	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.9
7	The Compressed Air Monitoring Program will be enhanced as follows: • Station and Instrument Air System air quality will be monitored and maintained in accordance with the instrument air quality guidance provided in ISA S7.0.01-1996. Particulate testing will be revised	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.10

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	to use a particle size methodology as specified in ISA S7.0.01. • The program will incorporate on-line dew point monitoring. [Revised in letter dated 2/6/2009 in response to Region III License Renewal Inspection]		
8	An Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program will be completed. Program features will be as described in LRA Section B2.1.11.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.11
9	An Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program will be implemented. Program features will be as described in LRA Section B2.1.12.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.12
10	An Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits Program will be implemented. Program features will be as described in LRA Section B2.1.13.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.13
11	The External Surfaces Monitoring Program will be enhanced as follows: • The scope of the program will be expanded as necessary to include all metallic and non-metallic components within the scope of License Renewal that require aging management in accordance with this program. • The program will ensure that surfaces that are inaccessible or not readily visible during plant operations	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.14

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	will be inspected during refueling outages. • The program will ensure that surfaces that are inaccessible or not readily visible during both plant operations and refueling outages will be inspected at intervals that provide reasonable assurance that aging effects are managed such that the applicable components will perform their intended function during the period of extended operation. • The program will apply physical manipulation techniques, in addition to visual inspection, to detect aging effects in elastomers and plastics. • The program will include acceptance criteria (e.g., threshold values for identified aging effects) to ensure that the need for corrective actions will be identified before a loss of intended functions. • The program will ensure that program documentation such as walkdown records, inspection results, and other records of monitoring and trending activities are auditable and retrievable. [Revised in letter dated 2/6/2009 in response to RAI B2.1.14-1 Follow Up question]		
12	The Fire Protection Program will be enhanced to require periodic visual inspection of the fire barrier walls, ceilings, and floors to be performed during walkdowns at least once every refueling cycle.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.15

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	[Revised in letter dated 12/5/2008 in response to RAI B2.1.15-3]		
13	The Fire Water System Program will be enhanced as follows: • The program will be expanded to include eight additional yard fire hydrants in the scope of the annual visual inspection and flushing activities. • The program will require that sprinkler heads that have been in place for 50 years will be replaced or a representative sample of sprinkler heads will be tested using the guidance of NFPA 25, "Inspection, Testing and Maintenance of Water-Based Fire Protection Systems" (2002 Edition, Section 5.3.1.1.1). Sample testing, if performed, will continue at a 10-year interval following the initial testing.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.16
14	The Flux Thimble Tube Inspection Program will be enhanced as follows: • The program will require that the interval between inspections be established such that no flux thimble tube is predicted to incur wear that exceeds the established acceptance criteria before the next inspection. • The program will require that re-baselining of the examination frequency be justified using plant-specific wear rate data unless prior plant-specific NRC acceptance for the re-baselining was received. If design changes are made to use more wear-resistant thimble tube materials, sufficient inspections will be conducted at an adequate inspection frequency for the new materials.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.18

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	• The program will require that flux thimble tubes that cannot be inspected must be removed from service.		
15	The Fuel Oil Chemistry Program will be enhanced as follows: • Particulate contamination testing of fuel oil in the eleven fuel oil storage tanks in scope of License Renewal will be performed, in accordance with ASTM D 6217, on an annual basis. • One-time ultrasonic thickness measurements will be performed at selected tank bottom and piping locations prior to the period of extended operation.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.19
16	A Fuse Holders Program will be implemented. Program features will be as described in LRA Section B2.1.20.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.20
17	An Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program will be implemented. Program features will be as described in LRA Section B2.1.21	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.21
18	An Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program will be implemented. Program features will be as described in LRA section B2.1.22. Inspections for stress corrosion cracking will be performed by visual examination with a magnified resolution as described in 10 CFR 50.55a(b)(2)(xxi)(A) or with ultrasonic methods. [Revised in letter dated 2/6/2009 in response to RAI B2.1.22-1 Follow Up question]	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.22
19	The Inspection of Overhead Heavy Load and Light Load	U1 - 8/9/2013	B2.1.23

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	(Related to Refueling) Handling Systems Program will be enhanced as follows: • Program implementing procedures will be revised to ensure the components and structures subject to inspection are clearly identified. • Program inspection procedures will be enhanced to include the parameters corrosion and wear where omitted.	U2 - 10/29/2014	
20	A Metal-Enclosed Bus Program will be implemented. Program features will be as described in LRA Section B2.1.26.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.26
21	Number Not Used [Withdrawn in letter dated 3/27/2009]		
22	The Nickel-Alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of Pressurized Water Reactors Program will be enhanced as follows: • The program will require that any deviations from implementing the appropriate required inspection methods of the NRC First Revised Order EA-03-009, "Issue of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 20, 2004 (Order), as amended, will be submitted for NRC review and approval in accordance with the Order, as amended. • The program will require that any deviations from	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.28

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	implementing the required inspection frequencies mandated by the Order, as amended, will be submitted for NRC review and approval in accordance with the Order, as amended. • The program will require that relevant flaw indications detected during the augmented inspections of the upper vessel head penetration nozzles will be evaluated in accordance with the criteria provided in the letter from Mr. Richard Barrett, NRC, Office of Nuclear Reactor Regulation (NRR), Division of Engineering to Alex Marion, Nuclear Energy Institute (NEI), dated April 11, 2003, or in accordance with NRC-approved Code Cases that incorporate the flaw evaluation procedures and criteria of the NRC's April 11, 2003, letter to NEI. • The program will require that, if leakage or evidence of cracking in the vessel head penetration nozzles (including associated J-groove welds) is detected while ranked in the "Low," "Moderate," or "Replaced" susceptibility category, the nozzles are to be immediately reclassified to the "High" susceptibility category and the required augmented inspections for the "High" susceptibility category are to be implemented during the same outage the leakage or cracking is detected.		
23	A One-Time Inspection Program will be completed. Program features will be as described in LRA Section B2.1.29.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.29
24	A One-Time Inspection of ASME Code Class 1 Small-Bore Piping Program will be completed. Program features will be as	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.30

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	described in LRA Section B2.1.30.		
25	For the PWR Vessel Internals Program, PINGP commits to the following activities for managing the aging of reactor vessel internals components: • Participate in the industry programs for investigating and managing aging effects on reactor internals; • Evaluate and implement the results of the industry programs as applicable to the reactor internals; and • Upon completion of these programs, but not less than 24 months before entering the period of extended operation, submit an inspection plan for reactor internals to the NRC for review and approval.	U1 - 8/9/2011 U2 - 10/29/2012	B2.1.32
26	The Reactor Head Closure Studs Program will be enhanced to incorporate controls that ensure that any future procurement of reactor head closure studs will be in accordance with the material and inspection guidance provided in NRC Regulatory Guide 1.65.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.33
27	The Reactor Vessel Surveillance Program will be enhanced as follows: • A requirement will be added to ensure that all withdrawn and tested surveillance capsules, not discarded as of August 31, 2000, are placed in storage for possible future reconstitution and use. • A requirement will be added to ensure that in the event spare capsules are withdrawn, the untested capsules are	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.34

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	placed in storage and maintained for future insertion.		
28	The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants Program will be enhanced as follows: • The program will include inspections of concrete and steel components that are below the water line at the Screenhouse and Intake Canal. The scope will also require inspections of the Approach Canal, Intake Canal, Emergency Cooling Water Intake, and Screenhouse immediately following extreme environmental conditions or natural phenomena including an earthquake, flood, tornado, severe thunderstorm, or high winds. • The program parameters to be inspected will include an inspection of water-control concrete components that are below the water line for cavitation and erosion degradation. • The program will visually inspect for damage such as cracking, settlement, movement, broken bolted and welded connections, buckling, and other degraded conditions following extreme environmental conditions or natural phenomena.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.35
29	A Selective Leaching of Materials Program will be completed. Program features will be as described in LRA B2.1.36.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.36

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
30	The Structures Monitoring Program will be enhanced as follows: • The following structures, components, and component supports will be added to the scope of the inspections: o Approach Canal o Fuel Oil Transfer House o Old Administration Building and Administration Building Addition o Component supports for cable tray, conduit, cable, tubing tray, tubing, non-ASME vessels, exchangers, pumps, valves, piping, mirror insulation, non-ASME valves, cabinets, panels, racks, equipment enclosures, junction boxes, bus ducts, breakers, transformers, instruments, diesel equipment, housings for HVAC fans, louvers, and dampers, HVAC ducts, vibration isolation elements for diesel equipment, and miscellaneous electrical and mechanical equipment items o Miscellaneous electrical equipment and instrumentation enclosures including cable tray, conduit, wireway, tube tray, cabinets, panels, racks, equipment enclosures, junction boxes, breaker housings, transformer housings, lighting fixtures, and metal bus enclosure assemblies o Miscellaneous mechanical equipment enclosures including housings for HVAC fans, louvers, and dampers o SBO Yard Structures and components including	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.38

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	SBO cable vault and bus duct enclosures. o Fire Protection System hydrant houses o Caulking, sealant and elastomer materials o Non-safety related masonry walls that support equipment relied upon to perform a function that demonstrates compliance with a regulated event(s). • The program will be enhanced to include additional inspection parameters. • The program will require an inspection frequency of once every five (5) years for structures and structural components within the scope of the program. The frequency of inspections can be adjusted, if necessary, to allow for early detection and timely correction of negative trends. • The program will require periodic sampling of groundwater and river water chemistries to ensure they remain non-aggressive.		
31	A Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS) Program will be implemented. Program features will be as described in LRA Section B2.1.39.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.39
32	The Water Chemistry Program will be enhanced as follows: • The program will require increased sampling to be performed as needed to confirm the effectiveness of corrective actions taken to address an abnormal chemistry condition.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.40

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	• The program will require Reactor Coolant System dissolved oxygen Action Level limits to be consistent with the limits established in the EPRI PWR Primary Water Chemistry Guidelines." [Revised in letter dated 12/5/2008 in response to RAI B2.1.40-3]		
33	The Metal Fatigue of Reactor Coolant Pressure Boundary Program will be enhanced as follows: • The program will monitor the six component locations identified in NUREG/CR-6260 for older vintage Westinghouse plants, either by tracking the cumulative number of imposed stress cycles using cycle counting, or by tracking the cumulative fatigue usage, including the effects of coolant environment. The following locations will be monitored: o Reactor Vessel Inlet and Outlet Nozzles o Reactor Pressure Vessel Shell to Lower Head o RCS Hot Leg Surge Line Nozzle o RCS Cold Leg Charging Nozzle o RCS Cold Leg Safety Injection Accumulator Nozzle o RHR-to-Accumulator Piping Tee • Program acceptance criteria will be clarified to require corrective action to be taken before a cumulative fatigue usage factor exceeds 1.0 or a design basis transient cycle limit is exceeded. [Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]	U1 - 8/9/2013 U2 - 10/29/2014	B3.2

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
34	Reactor internals baffle bolt fatigue transient limits of 1835 cycles of plant loading at 5% per minute and 1835 cycles of plant unloading at 5% per minute will be incorporated into the Metal Fatigue of Reactor Coolant Pressure Boundary Program and USAR Table 4.1-8.	U1 - 8/9/2013 U2 - 10/29/2014	B3.2
35	NSPM will perform an ASME Section III fatigue evaluation of the lower head of the pressurizer to account for effects of insurge/outsurge transients. The evaluation will determine the cumulative fatigue usage of limiting pressurizer component(s) through the period of extended operation. The analyses will account for periods of both "Water Solid" and "Standard Steam Bubble" operating strategies. Analysis results will be incorporated, as applicable, into the Metal Fatigue of Reactor Coolant Pressure Boundary Program. [Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]	U1 - 8/9/2013 U2 - 10/29/2014	4.3.1.3
36	NSPM will complete fatigue calculations for the pressurizer surge line hot leg nozzle and the charging nozzle using the methodology of the ASME Code (Subsection NB) and will report the revised CUFs and CUFs adjusted for environmental effects at these locations as an amendment to the PINGP LRA. Conforming changes to LRA Section 4.3.3, "PINGP EAF Results," will also be included in that amendment to reflect analysis results and remove references to stress-based fatigue monitoring. [Added in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]	April 30, 2009	4.3.3
37	NSPM will revise procedures for excavation and trenching controls and archaeological, cultural and historic resource protection to identify sensitive areas and provide guidance for	8/9/2013	ER 4.16.1

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	ground-disturbing activities. The procedures will be revised to include drawings and illustrations to assist users in identifying culturally sensitive areas, and pictures of artifacts that are prevalent in the area of the Plant site. The revised procedures will also require training of the Site Environmental Coordinator and other personnel responsible for proper execution of excavation or other ground-disturbing activities. [Added in ER revision submitted in letter dated 3/4/2009]		
38	NSPM will conduct a Phase I Reconnaissance Field Survey of the disturbed areas within the Plant's boundaries. In addition, NSPM will conduct Phase I field surveys of areas of known archaeological sites to precisely determine their boundaries. NSPM will use the results of these surveys to designate areas for archaeological protection. [Added in ER revision submitted in letter dated 3/4/2009]	8/9/2013	ER 4.16.2
39	NSPM will prepare, maintain and implement a Cultural Resources Management Plan (CRMP) to protect significant historical, archaeological, and cultural resources that may currently exist on the Plant site. In connection with the preparation of the CRMP, NSPM will conduct botanical surveys to identify culturally and medicinally important species on the Plant site, and incorporate provisions to protect such plants into the CRMP. [Added in ER revision submitted in letter dated 3/4/2009]	8/9/2013	ER 4.16.2
40	NSPM will consult with a qualified archaeologist prior to conducting any ground-disturbing activity in any area	8/9/2013	ER 4.16.2

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	designated as undisturbed and in any disturbed area that is described as potentially containing archaeological resources (as determined by the Phase I Reconnaissance Field Survey discussed in Commitment Number 38). [Added in ER revision submitted in letter dated 3/4/2009]		