

PrairieIslandNPEm Resource

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To: Richard Plasse; Nathan Goodman; Stuart Sheldon
Cc: Eckholt, Gene F.; Davis, Marlys E.
Subject: PINGP Letter Responding to NRR Follow Up Questions and Region III Action Items
Attachments: 20090206 Supplemental Responses to Follow Up Questions.pdf; 20090206 Supplemental Responses to Follow Up Questions.doc

Attached are pdf and WORD versions of our 2/6/09 letter responding to various NRR follow up questions and four action items from the Region LR inspection. The letter was just signed out.

Let me know if you have any questions.

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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. NSPM letters dated December 5, 2008, January 9, 2009, and January 20, 2009, among others, provided responses to Requests for Additional Information (RAIs) concerning that application. In conference calls on January 22, 2009, January 23, 2009, January 28, 2009, and February 3, 2009, the NRC raised follow up questions about certain of those RAI responses and the LRA. Enclosure 1 of this letter provides responses to those follow up questions.

During the period January 12 through 30, 2009, NRC Region III conducted an inspection of License Renewal activities at PINGP. This inspection resulted in an agreement that NSPM would clarify or supplement the LRA discussions for four aging management programs. Enclosure 2 provides that information.

Enclosure 3 provides an updated version of the Preliminary License Renewal Commitment List contained in the LRA transmittal letter. This updated list reflects 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 revises three Preliminary License Renewal Commitments previously submitted in the LRA transmittal letter dated April 11, 2008. These commitments are subject to NRC acceptance in the Safety Evaluation Report for renewal of the operating licenses.

Revised Commitment Number 7 reads as follows:

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 to use a particle size methodology as specified in ISA S7.0.01.
- The program will incorporate on-line dew point monitoring.

Revised Commitment Number 11 reads as follows:

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 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 Commitment Number 18 reads as follows:

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.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on February 6, 2009.



Michael D. Wadley
Site Vice President, Prairie Island Nuclear Generating Plant Units 1 and 2
Northern States Power Company - Minnesota

Enclosures (3)

cc:

Administrator, Region III, USNRC
License Renewal Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Prairie Island Indian Community ATTN: Phil Mahowald
Minnesota Department of Commerce

**Enclosure 1
NSPM Responses to NRC Follow Up Questions**

LRA Table 3.4.2-8 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that the entries for Pump Casings/Aluminum/Raw Water (Int) in LRA Table 3.4.2-8 (page 3.4-142) be clarified to eliminate confusion over whether Treated Water or Raw Water is applicable for the component.

NSPM Response to LRA Table 3.4.2-8 Follow Up Question

In LRA Table 3.4.2-8, Steam and Power Conversion System – Turbine Generator and Support System – Summary of Aging Management Evaluation, on page 3.4-142, for aluminum pump casings exposed to a Raw Water (Int) environment, the NUREG-1801 Volume 2 Line Item VIII.E-15, Table 1 Item 3.4.1-15, and Note E entries are incorrect. The internal environment for this component is correctly evaluated as Raw Water.

Accordingly, the following LRA changes are made:

In LRA Table 3.4.1, Summary of Aging Management Evaluations in Chapter VIII of NUREG-1801 for Steam and Power Conversion System, on page 3.4-26, Line item 3.4.1-15 is revised to appear as follows:

Item Number	Component	Aging Effect/Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.4.1-15	Aluminum and copper alloy piping, piping components, and piping elements exposed to treated water	Loss of material due to pitting and crevice corrosion	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Consistent with NUREG-1801 with exceptions. Exceptions apply to NUREG-1801 recommendations for the Water Chemistry Program implementation and Closed-Cycle Cooling Water System Program implementation. This aging effect is managed by the Water Chemistry Program, One-Time Inspection Program, or the Closed-Cycle Cooling Water System Program. Further evaluation is documented in Section 3.4.2.2.7.1.

In LRA Section 3.4.2.2.7.1 on pages 3.4-18 and -19, Part II is revised in its entirety to read as follows:

Part II

Loss of material due to pitting and crevice corrosion could occur for aluminum and copper alloy piping, piping components, and piping elements exposed to treated water. This aging effect is managed with the Water Chemistry Program, One-Time Inspection Program, or the Closed-Cycle Cooling Water System

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Program. The Water Chemistry Program includes specifications for chemical species, sampling and analysis frequencies, and corrective actions for control of water chemistry. The program controls concentrations of known detrimental chemical species such as chlorides, fluorides, sulfates and dissolved oxygen below the levels known to cause degradation. The One-Time Inspection Program performs sampling inspections using nondestructive examination techniques that either verify unacceptable degradation is not occurring or trigger additional actions. The Closed-Cycle Cooling Water System Program includes preventive measures (corrosion inhibitor addition and chemical testing) to minimize aging effects and component inspections to monitor for the effects of aging. In addition, cleaning and inspections of heat exchangers are performed periodically along with pump and heat exchanger performance/functional testing. These programs assure the intended function of affected components will be maintained during the period of extended operation.

In LRA Table 3.4.2-8, Steam and Power Conversion System – Turbine Generator and Support System – Summary of Aging Management Evaluation, on page 3.4-142, for aluminum pump casings exposed to a Raw Water (Int) environment, the Volume 2 Line Item, Table 1 Item, and Notes entries are changed, as follows:

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Line Item	Table 1 Item	Notes
Pump Casings	Pressure Boundary	Aluminum	Raw Water (Int)	Loss of Material - Crevice corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program			G, 420
				Loss of Material - Pitting Corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program			G, 420

RAI 3.6-1 Follow Up Question

In the 1/28/09 telephone conference, the NRC indicated that the response to RAI 3.6-1 (1/20/09 letter) states that there are no aging effects for transmission conductor connections but does not explain why. It was requested that the response be clarified to explain why PINGP transmission conductor connections are not subject to aging effects.

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NSPM Response to RAI 3.6-1 Follow Up Question

For Switchyard Bus and Connections, and high-voltage transmission conductors and connections, the connections are bolted, welded and crimped aluminum connections for cables. The PINGP Operating Experience review has not identified loss of material or corrosion causing increased resistance of connections in the high voltage switchyard bus and connections.

A degree of surface oxidation does initially occur on the portions of aluminum connections exposed to Air - Outdoor environments, but the oxidation levels do not cause appreciable losses of material that adversely impact the bus and connections. The initial oxidation of exposed aluminum actually provides a "protective" layer, whereby further oxidation is progressively slowed to negligible levels. The internal contact surfaces of the switchyard bolted connections are not exposed to a moisture environment that would contribute to corrosion of the connection contact surface area. A loose connection (from any other cause, such as inadequate tightening during maintenance) is required to provide an environment for the onset of corrosion of the internal connection surfaces to occur.

For the ambient environmental conditions at the Prairie Island Substation, no aging effects have been identified for the aluminum high-voltage transmission conductors and aluminum connections that could cause a loss of intended function for the period of extended operation.

RAI 3.6-2 Follow Up Question

In the 1/28/09 telephone conference, the NRC indicated that the response to RAI 3.6-2 (1/20/09 letter) provides an example of a power cable aging assessment using a charging pump motor. NSPM was requested to explain how the full load current value of 145 amps was determined and why starting current is not an issue for aging of unspaced power cables.

NSPM Response to RAI 3.6-2 Follow Up Question

The stated 145 amps for a power cable aging assessment using a charging pump motor was the nameplate full load current, and was not a calculated value. The vendor nameplate value reflects the most accurate value.

The starting of motors does incur a current inrush (current surge) but this surge has only a momentary duration that would not contribute to cable aging effects. Cable aging is dependent on the average temperature exposure of the cable insulation over the 60-year service duration.

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RAI 4.3.1.5-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested clarification of the third sentence in NSPM's response to RAI 4.3.1.5-1 (1/9/09 letter) to indicate that the design transients that bound those presented in LRA Table 4.3-1 are Westinghouse generic design transients for the Reactor Coolant Pumps.

NSPM Response to RAI 4.3.1.5-1 Follow Up Question

In the NSPM Response to RAI 4.3.1.5-1 on Page 8 of the letter dated January 9, 2009, the design transients referenced in the third sentence are the Westinghouse generic design transients used in the original Reactor Coolant Pump exemption from fatigue evaluation.

RAI B2.1.6-2 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that the use of the extra documents cited in the response to RAI B2.1.6-2 (12/5/08 letter) related to the Bolting Integrity Program be identified as an exception to GALL.

NSPM Response to RAI B2.1.6-2 Follow Up Question

As stated in the response to RAI B2.1.6-2 (12/5/08 letter), review has confirmed that the use of EPRI documents NP-5067, NP-6316, or TR-111472 as the basis for certain bolting activities in PINGP plant procedures does not introduce substantive technical differences with, and does not contradict, the guidance for those activities provided in NUREG-1339, EPRI NP-5769 or EPRI TR-104213 which are cited in NUREG-1801, XI.M18. However, contrary to the statements made in the NSPM Response to RAI B2.1.6-2, the use of these documents will be designated as an exception to NUREG-1801, Program XI.M18. To identify the use of documents other than those explicitly cited in NUREG-1801 as exceptions, the following LRA change is hereby made:

In LRA Section B2.1.6 on Page B-22, a second bullet is added under Exceptions to NUREG-1801, to read as follows:

- Scope of Program, Preventive Actions, Corrective Actions

EPRI documents NP-5067, NP-6316, or TR-111472 are used as the basis for certain bolting activities in plant procedures instead of, or in addition to, documents explicitly cited in NUREG-1801. Review has confirmed that the use of these standards does not introduce substantive technical differences with, and does not contradict, the guidance for those activities provided in NUREG-1339, EPRI NP-5769 or EPRI TR-104213 which are cited in NUREG-1801, XI.M18.

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RAI AMP-B2.1.7-1 Follow Up Question

In the 2/3/09 telephone conference, the NRC questioned Part B of the response to RAI AMP-B2.1.7-1. Part B could be interpreted to indicate that boric acid residue could be left on ferritic components for extended periods. NSPM agreed to clarify Part B of the response.

NSPM Response to RAI AMP-B2.1.7-1 Follow Up Question

Part B of the NSPM Response to RAI AMP-B2.1.7-1 (12/5/08 letter) was specifically directed at the question, "Clarify whether the program permits PINGP to leave any boric acid residues in place, and if so, how the program assesses the impacts of boric acid residues on the structural integrity of impacted components if the residues are left in place for any period of time." The response only acknowledges that immediate cleaning and repair may not always be possible due to existing plant conditions, and that situations such as these are addressed in plant procedures. The response should not be interpreted to indicate that PINGP would not promptly clean and repair any identified boric acid leakage if plant conditions permit. For clarity, Part B of the NSPM Response to RAI AMP-B2.1.7-1 is revised in its entirety to read as follows:

Part B

At PINGP, boric acid residue is not normally left in place for extended periods of time. Identified boric acid leaks are cleaned and repaired effectively. Boric acid discovered in critical locations such as the reactor vessel head and other reactor coolant pressure boundary components that are only accessible for inspection during outages would be cleaned prior to startup from the outage. Boric acid residue or active leakage discovered in locations that are not reasonably accessible for cleaning or repair due to plant conditions may be allowed to remain in place for a limited period of time (e.g., until the next outage when access becomes available), but only after an evaluation has confirmed that the continued presence of boric acid would be acceptable for the expected time period.

Upon identification of borated water leakage or boric acid residue, the PINGP Boric Acid Corrosion Program evaluates the condition to determine if the boric acid residues can be left in place until such time as corrective actions, as previously discussed in Part A of the NSPM response, can be initiated at the earliest possible convenience. The following summarizes the process for conducting corrosion evaluations required by the program.

ASME Pressure Boundary Components

If boric acid leakage affects ASME Section XI pressure boundary components other than bolting (e.g.; valve bodies, valve bonnets, piping), then those components are evaluated to determine if the component is acceptable for continued service. Procedures specify that the evaluation should consider corrosion rates and mechanisms, taking into account material susceptibility, surface temperature,

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leakage rates, boric acid concentration, and potential for further concentration by evaporation or boiling.

If the corrosion evaluation determines that code allowables or margins for operability will not be exceeded prior to scheduled corrective maintenance, then it may be concluded that the system is acceptable for continued service pending subsequent re-inspections to validate assumptions, or other possible compensatory measures, if necessary. If the corrosion evaluation determines that corrosion allowables or margins for operability will be exceeded prior to scheduled maintenance, then the time remaining prior to such an exceedance is estimated, and action is assigned to re-inspect/reassess or perform corrective maintenance prior to that time.

Non-ASME or Non-Pressure Boundary ASME Components

Those indications which affect susceptible materials of non-ASME components or susceptible non-pressure boundary materials of ASME Section XI components (e.g.; packing components, stem and yoke) are evaluated. Procedures specify that a corrosion evaluation for a leak left in service should consider corrosion rates and mechanisms (consider surface temperature), boric acid concentration (and potential for further concentration by evaporation or boiling), material susceptibility, leak rates, corrosion allowance and design wall thickness, re-inspection interval, and possible compensatory measures, as necessary. If the corrosion evaluation determines that code allowables or margins for operability will not be exceeded prior to scheduled corrective maintenance, then it may be concluded that the system is acceptable for continued service pending subsequent re-inspections to validate assumptions, or other possible compensatory measures, if necessary. If the corrosion evaluation determines that corrosion allowables or margins for operability will be exceeded prior to scheduled maintenance, then the time remaining prior to such an exceedance is estimated, and action is assigned to re-inspect/reassess or perform corrective maintenance prior to that time.

Mechanical Joints

If observed leakage from mechanical joints (e.g., bolted connections) is determined to be unacceptable, the appropriate corrective actions must be taken to ensure structural integrity. Leakage from mechanical joints that is determined to be acceptable for continued operation is inspected and monitored in order to trend/evaluate changes in leakage. The bases for acceptability are documented. Evaluations for continued service include consideration of corrosion mechanisms and corrosion rates.

B2.1.11 Follow Up Question

In the 1/23/09 telephone conference, the NRC requested that PINGP spell out the exception for each attribute in the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. The NRC indicated that the

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draft ISG is an acceptable technical basis for the AMP, but the GALL exceptions need to be itemized.

NSPM Response to B2.1.11 Follow Up Question

LRA Section B2.1.11 indicates that the PINGP Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program is consistent with NUREG-1801, XI.E6, with exceptions. The discussion also notes on Page B-31 that the exceptions are consistent with the proposed Interim Staff Guidance LR-ISG-2007-02, noticed by the NRC for public comment in the Federal Register on September 6, 2007 (FRN 72FR51256). Three significant differences are noted between the current NUREG-1801, XI.E6 program, and the September 6, 2007 proposed revision of the XI.E6 program in LR-ISG-2007-02. These differences are:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while NUREG-1801, XI.E6 specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

These differences resulted in the PINGP Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program having exceptions to four elements of the NUREG-1801, XI.E6 program. The specific exceptions are summarized below.

Program Element 1, Scope of Program

NUREG-1801, XI.E6 Element 1, states:

"Connections associated with cables in scope of license renewal are part of this program, regardless of their association with active or passive components."

The PINGP Program states:

"... Program is a one-time inspection program that tests a representative sample of cable connections based upon factors such as application (medium and low voltage), connection type, circuit loading, and location (high temperature, high humidity, vibration, etc.). Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program."

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The exceptions to NUREG-1801, XI.E6 Element 1, are a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 3, Parameters Monitored/Inspected

NUREG-1801, XI.E6 Element 3, states:

"This program will focus on the metallic parts of the connection. The monitoring includes loosening of bolted connections due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation. A representative sample of electrical cable connections is tested. The following factors are to be considered for sampling: application (high, medium and low voltage), circuit loading, and location (high temperature, high humidity, vibration, etc.). The technical basis for the sample selected is to be documented."

The PINGP Program states:

"... Program will focus on the metallic parts of cable connections. The one-time inspection will test a representative sample of electrical connections having different voltage applications (medium and low voltage) and locations (high temperature, high humidity, vibration, etc.), and will demonstrate that the loosening of bolted connections due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation does not occur, and would not require a periodic AMP to prevent electrical connection failures during the period of extended operation. Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program. The technical basis for the sample selected will be documented."

The exceptions to NUREG-1801, XI.E6 Element 3, are a result of:

- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate

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between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 4, Detection of Aging Effects

NUREG-1801, XI.E6 Element 4, states:

“Electrical connections within the scope of license renewal will be tested at least once every 10 years. Testing may include thermography, contact resistance testing, or other appropriate testing methods. This is an adequate period to preclude failures of the electrical connections since experience has shown that aging degradation is a slow process. A 10-year testing interval will provide two data points during a 20-year period, which can be used to characterize the degradation rate. The first tests for license renewal are to be completed before the period of extended operation.”

The PINGP Program states:

“... Program is a one-time inspection program that tests a representative sample of electrical connections within the scope of license renewal and subject to AMR. Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

Factors considered for sample selection will be application (medium and low voltage) ...”

The exceptions to NUREG-1801, XI.E6 Element 4, are a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 5, Monitoring and Trending

NUREG-1801, XI.E6 Element 5, states:

“Trending actions are not included as part of this program because the ability to trend test results is dependent on the specific type of test chosen. However, test results that are trendable provide additional information on the rate of degradation.”

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The PINGP Program states:

“The Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program is a one-time inspection program, and trending actions are not included.”

The exception to NUREG-1801, XI.E6 Element 4, is a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.

Additional Clarification to LRA Sections A2.11 and B2.1.11

During the review of this follow up question, it was determined that LRA Sections A2.1 and B2.1.11 should be changed to use terms which conform to the terminology used in the proposed LR-ISG-2007-02. Accordingly, the following LRA changes are hereby made:

In LRA Section A2.11 on Page A-6, the second and third sentences are revised to read as follows:

Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

In LRA Section B2.1.11 on Page B-31, Program Description, the second and third sentences of the first paragraph are revised to read as follows:

Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

RAI AMP-B2.1.14-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that physical manipulation of elastomers under the External Surfaces Monitoring Program, as discussed in the response to RAI AMP-B2.1.14-1 (letter of 12/5/08), also be addressed in License Renewal Commitment #11, or that an exception or enhancement to the program be identified related to physical manipulation.

NSPM Response to RAI AMP-B2.1.14-1 Follow Up Question

The program enhancements that were identified in LRA Section B2.1.14 and Commitment No. 11 are being expanded to address the use of physical manipulation to identify aging effects in elastomers and plastics, consistent with the response to RAI

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AMP-B2.1.14-1. In addition, during the NRC Region III License Renewal Inspection as noted in Enclosure 2, it was determined that the program enhancements should also address improvements in acceptance criteria, documentation of inspection results, and retention of inspection records. Accordingly, the Enhancements section of LRA Section B2.1.14, on Page B-37, is hereby revised in its entirety to read as follows:

The following enhancements are required to satisfy NUREG-1801 aging management program recommendations. Enhancements will be implemented prior to the period of extended operation.

- **Scope of Program**

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 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.

- **Detection of Aging Effects**

The program will apply physical manipulation techniques, in addition to visual inspection, to detect aging effects in elastomers and plastics.

- **Acceptance Criteria**

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.

- **Administrative Controls**

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.

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Conforming changes are also made to Commitment No. 11. Preliminary License Renewal Commitment No. 11 is hereby revised to appear as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
11	<p>The External Surfaces Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.14

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RAI B2.1.22-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC noted that the paragraph beginning "Additionally," in the response to RAI B2.1.22-1 (page 50 of the 12/5/08 letter) indicates that either enhanced visual or UT examination techniques will be used to inspect for SCC under the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program. The NRC requested that the language of the associated commitment be expanded to include that information so it will be embedded in the USAR.

NSPM Response to RAI B2.1.22-1 Follow Up Question

Preliminary License Renewal Commitment No. 18 is hereby revised to appear as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
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.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.22

Enclosure 2
Clarifying Information in Response to NRC Region III Inspection

B2.0 Aging Management Programs Correlation Table Correction

In LRA Section B2.0 on page B-11, in the comparison table showing the correlation between each NUREG-1801 program and the corresponding PINGP program, the "NUREG-1801 Comparison" entry for program XI.S5, Masonry Wall Program, erroneously indicates that the PINGP program has an enhancement. This table entry is hereby corrected to read as follows:

Existing Program, Consistent with NUREG-1801

B2.1.9 Closed-Cycle Cooling Water System Program Exception

In LRA Section B2.1.9, Closed-Cycle Cooling Water System Program, PINGP has taken an exception to NUREG-1801, Chapter XI, Program XI.M21, Element 3, Parameters Monitored/Inspected. In part, the exception reads, "Some of the pump and heat exchanger performance parameters recommended by NUREG-1801 are not used by PINGP for monitoring specific pumps or smaller converters serviced by the closed-cycle cooling water systems." As further identified in the NSPM Response to RAI AMP-B2.1.9-1 (letter dated 12/5/08), no performance parameters are monitored for three of the closed-cooling water loops listed: the Cold Lab Chiller Loop, Computer Room Chiller Loop, and Hot Lab Chiller Loop. Since these loops are not subject to any periodic performance testing, it was determined that this should also be identified as an exception to Element 4, Detection of Aging Effects, which states, "Performance and functional testing ensures acceptable functioning of the CCCW system or components"

Accordingly, in LRA Section B2.1.9, under Exceptions to NUREG-1801 (Pages B-27 and B-28), a third bullet is hereby added to read as follows:

- Detection of Aging effects

No periodic performance testing is conducted on the Cold Lab Chiller Loop, Computer Room Chiller Loop, or Hot Lab Chiller Loop as recommended by NUREG-1801. Periodic sampling and chemistry controls are adequate to manage aging effects in these closed-cycle cooling water systems.

B2.1.10 Compressed Air Monitoring Program Enhancement

During the NRC Region III Inspection it was determined that the PINGP Station and Instrument Air Dryers are equipped with color-change moisture indicators. The indicators provide a constant visual indication that dry gas is being supplied to the dryer outlet. However, the PINGP Compressed Air Monitoring Program did not credit the use of the moisture indicators as a means of on-line dew point monitoring. As a result, it was determined that on-line dew point monitoring should be explicitly addressed as an enhancement to the existing program.

Enclosure 2
Clarifying Information in Response to NRC Region III Inspection

Accordingly, the following enhancement is hereby added as a second bullet to LRA Section B2.1.10, Compressed Air Monitoring Program, "Enhancements" on Page B-30, to read as follows:

- Preventive Actions, Detection of Aging Effects

The program will be enhanced to incorporate on-line dew point monitoring.

A conforming change is also required to Preliminary Commitment No. 7. Preliminary Commitment No. 7 is hereby revised to read as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
7	<p>The Compressed Air Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 to use a particle size methodology as specified in ISA S7.0.01. • The program will incorporate on-line dew point monitoring. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.10

B2.1.14 External Surfaces Monitoring Program Enhancements

In LRA Section B2.1.14 on page B-37, it was determined that the enhancements identified for the External Surfaces Monitoring Program should also address improvements in acceptance criteria, documentation of inspection results, and retention of inspection records. These enhancements have been incorporated into the LRA in the NSPM Response to RAI AMP-B2.1.14-1 Follow Up Question on Pages 10 and 11 of Enclosure 1 above.

Enclosure 3

Updated Preliminary License Renewal Commitment List

14 Pages

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
4	Procedures for the conduct of inspections in the External Surfaces Monitoring Program, Structures Monitoring Program,	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.6

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	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.		
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: <ul style="list-style-type: none"> • 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 to use a particle size methodology as specified in ISA S7.0.01. • The program will incorporate on-line dew point 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.10

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	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: <ul style="list-style-type: none"> • 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 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 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.14

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> • 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. <p>[Revised in letter dated 2/6/2009 in response to RAI B2.1.14-1 Follow Up question]</p>		
12	<p>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.</p> <p>[Revised in letter dated 12/5/2008 in response to RAI B2.1.15-3]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.15
13	<p>The Fire Water System Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • The program will be expanded to include eight additional yard fire hydrants in the scope of the annual visual inspection and flushing activities. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.16

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> • 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. 		
14	<p>The Flux Thimble Tube Inspection Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. • The program will require that flux thimble tubes that cannot be inspected must be removed from service. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.18
15	<p>The Fuel Oil Chemistry Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.19

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> One-time ultrasonic thickness measurements will be performed at selected tank bottom and piping locations prior to the period of extended operation. 		
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	<p>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.</p> <p>[Revised in letter dated 2/6/2009 in response to RAI B2.1.22-1 Follow Up question]</p>	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.22
19	<p>The Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems Program will be enhanced as follows:</p> <ul style="list-style-type: none"> 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. 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.23

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
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	For the Nickel-Alloy Nozzles and Penetrations Program, PINGP commits to the following activities for managing the aging of nickel-alloy components susceptible to primary water stress corrosion cracking: <ul style="list-style-type: none"> • Comply with applicable NRC orders, and • Implement applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines. 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.27
22	The Nickel-Alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of Pressurized Water Reactors Program will be enhanced as follows: <ul style="list-style-type: none"> • 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 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 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.28

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> 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 described in LRA Section B2.1.30.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.30
25	<p>For the PWR Vessel Internals Program, PINGP commits to the following activities for managing the aging of reactor vessel internals components:</p> <ul style="list-style-type: none"> Participate in the industry programs for investigating and managing aging effects on reactor internals; Evaluate and implement the results of the industry 	U1 - 8/9/2011 U2 - 10/29/2012	B2.1.32

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>programs as applicable to the reactor internals; and</p> <ul style="list-style-type: none"> • 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. 		
26	<p>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.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.33
27	<p>The Reactor Vessel Surveillance Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 placed in storage and maintained for future insertion. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.34

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
28	<p>The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.35
29	<p>A Selective Leaching of Materials Program will be completed. Program features will be as described in LRA B2.1.36.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.36
30	<p>The Structures Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • The following structures, components, and component supports will be added to the scope of the inspections: <ul style="list-style-type: none"> ○ Approach Canal 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.38

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> ○ Fuel Oil Transfer House ○ Old Administration Building and Administration Building Addition ○ 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 ○ 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 ○ Miscellaneous mechanical equipment enclosures including housings for HVAC fans, louvers, and dampers ○ SBO Yard Structures and components including SBO cable vault and bus duct enclosures. ○ Fire Protection System hydrant houses ○ Caulking, sealant and elastomer materials ○ Non-safety related masonry walls that support equipment relied upon to perform a function that demonstrates compliance with a regulated event(s). 		

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> • 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	<p>The Water Chemistry Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. • 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." <p>[Revised in letter dated 12/5/2008 in response to RAI B2.1.40-3]</p>	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.40

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
33	<p>The Metal Fatigue of Reactor Coolant Pressure Boundary Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ Reactor Vessel Inlet and Outlet Nozzles ○ Reactor Pressure Vessel Shell to Lower Head ○ RCS Hot Leg Surge Line Nozzle ○ RCS Cold Leg Charging Nozzle ○ RCS Cold Leg Safety Injection Accumulator Nozzle ○ 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. <p>[Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B3.2
34	<p>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.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B3.2

Preliminary License Renewal Commitments

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
35	<p>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.</p> <p>[Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	4.3.1.3
36	<p>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.</p> <p>[Added in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	April 30, 2009	4.3.3



February 6, 2009

L-PI-09-020
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. NSPM letters dated December 5, 2008, January 9, 2009, and January 20, 2009, among others, provided responses to Requests for Additional Information (RAIs) concerning that application. In conference calls on January 22, 2009, January 23, 2009, January 28, 2009, and February 3, 2009, the NRC raised follow up questions about certain of those RAI responses and the LRA. Enclosure 1 of this letter provides responses to those follow up questions.

During the period January 12 through 30, 2009, NRC Region III conducted an inspection of License Renewal activities at PINGP. This inspection resulted in an agreement that NSPM would clarify or supplement the LRA discussions for four aging management programs. Enclosure 2 provides that information.

Enclosure 3 provides an updated version of the Preliminary License Renewal Commitment List contained in the LRA transmittal letter. This updated list reflects 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 revises three Preliminary License Renewal Commitments previously submitted in the LRA transmittal letter dated April 11, 2008. These commitments are subject to NRC acceptance in the Safety Evaluation Report for renewal of the operating licenses.

Revised Commitment Number 7 reads as follows:

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 to use a particle size methodology as specified in ISA S7.0.01.
- The program will incorporate on-line dew point monitoring.

Revised Commitment Number 11 reads as follows:

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 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 Commitment Number 18 reads as follows:

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.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on February 6, 2009.

/S/ Michael D. Wadley

Michael D. Wadley
Site Vice President, Prairie Island Nuclear Generating Plant Units 1 and 2
Northern States Power Company - Minnesota

Enclosures (3)

cc:

Administrator, Region III, USNRC
License Renewal Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Prairie Island Indian Community ATTN: Phil Mahowald
Minnesota Department of Commerce

Enclosure 1
NSPM Responses to NRC Follow Up Questions

LRA Table 3.4.2-8 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that the entries for Pump Casings/Aluminum/Raw Water (Int) in LRA Table 3.4.2-8 (page 3.4-142) be clarified to eliminate confusion over whether Treated Water or Raw Water is applicable for the component.

NSPM Response to LRA Table 3.4.2-8 Follow Up Question

In LRA Table 3.4.2-8, Steam and Power Conversion System – Turbine Generator and Support System – Summary of Aging Management Evaluation, on page 3.4-142, for aluminum pump casings exposed to a Raw Water (Int) environment, the NUREG-1801 Volume 2 Line Item VIII.E-15, Table 1 Item 3.4.1-15, and Note E entries are incorrect. The internal environment for this component is correctly evaluated as Raw Water.

Accordingly, the following LRA changes are made:

In LRA Table 3.4.1, Summary of Aging Management Evaluations in Chapter VIII of NUREG-1801 for Steam and Power Conversion System, on page 3.4-26, Line item 3.4.1-15 is revised to appear as follows:

Item Number	Component	Aging Effect/Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.4.1-15	Aluminum and copper alloy piping, piping components, and piping elements exposed to treated water	Loss of material due to pitting and crevice corrosion	Water Chemistry and One-Time Inspection	Yes, detection of aging effects is to be evaluated	Consistent with NUREG-1801 with exceptions. Exceptions apply to NUREG-1801 recommendations for the Water Chemistry Program implementation and Closed-Cycle Cooling Water System Program implementation. This aging effect is managed by the Water Chemistry Program, One-Time Inspection Program, or the Closed-Cycle Cooling Water System Program. Further evaluation is documented in Section 3.4.2.2.7.1.

In LRA Section 3.4.2.2.7.1 on pages 3.4-18 and -19, Part II is revised in its entirety to read as follows:

Part II

Loss of material due to pitting and crevice corrosion could occur for aluminum and copper alloy piping, piping components, and piping elements exposed to treated water. This aging effect is managed with the Water Chemistry Program, One-Time Inspection Program, or the Closed-Cycle Cooling Water System

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Program. The Water Chemistry Program includes specifications for chemical species, sampling and analysis frequencies, and corrective actions for control of water chemistry. The program controls concentrations of known detrimental chemical species such as chlorides, fluorides, sulfates and dissolved oxygen below the levels known to cause degradation. The One-Time Inspection Program performs sampling inspections using nondestructive examination techniques that either verify unacceptable degradation is not occurring or trigger additional actions. The Closed-Cycle Cooling Water System Program includes preventive measures (corrosion inhibitor addition and chemical testing) to minimize aging effects and component inspections to monitor for the effects of aging. In addition, cleaning and inspections of heat exchangers are performed periodically along with pump and heat exchanger performance/functional testing. These programs assure the intended function of affected components will be maintained during the period of extended operation.

In LRA Table 3.4.2-8, Steam and Power Conversion System – Turbine Generator and Support System – Summary of Aging Management Evaluation, on page 3.4-142, for aluminum pump casings exposed to a Raw Water (Int) environment, the Volume 2 Line Item, Table 1 Item, and Notes entries are changed, as follows:

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Line Item	Table 1 Item	Notes
Pump Casings	Pressure Boundary	Aluminum	Raw Water (Int)	Loss of Material - Crevice corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program			G, 420
				Loss of Material - Pitting Corrosion	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program			G, 420

RAI 3.6-1 Follow Up Question

In the 1/28/09 telephone conference, the NRC indicated that the response to RAI 3.6-1 (1/20/09 letter) states that there are no aging effects for transmission conductor connections but does not explain why. It was requested that the response be clarified to explain why PINGP transmission conductor connections are not subject to aging effects.

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NSPM Response to RAI 3.6-1 Follow Up Question

For Switchyard Bus and Connections, and high-voltage transmission conductors and connections, the connections are bolted, welded and crimped aluminum connections for cables. The PINGP Operating Experience review has not identified loss of material or corrosion causing increased resistance of connections in the high voltage switchyard bus and connections.

A degree of surface oxidation does initially occur on the portions of aluminum connections exposed to Air - Outdoor environments, but the oxidation levels do not cause appreciable losses of material that adversely impact the bus and connections. The initial oxidation of exposed aluminum actually provides a "protective" layer, whereby further oxidation is progressively slowed to negligible levels. The internal contact surfaces of the switchyard bolted connections are not exposed to a moisture environment that would contribute to corrosion of the connection contact surface area. A loose connection (from any other cause, such as inadequate tightening during maintenance) is required to provide an environment for the onset of corrosion of the internal connection surfaces to occur.

For the ambient environmental conditions at the Prairie Island Substation, no aging effects have been identified for the aluminum high-voltage transmission conductors and aluminum connections that could cause a loss of intended function for the period of extended operation.

RAI 3.6-2 Follow Up Question

In the 1/28/09 telephone conference, the NRC indicated that the response to RAI 3.6-2 (1/20/09 letter) provides an example of a power cable aging assessment using a charging pump motor. NSPM was requested to explain how the full load current value of 145 amps was determined and why starting current is not an issue for aging of unspaced power cables.

NSPM Response to RAI 3.6-2 Follow Up Question

The stated 145 amps for a power cable aging assessment using a charging pump motor was the nameplate full load current, and was not a calculated value. The vendor nameplate value reflects the most accurate value.

The starting of motors does incur a current inrush (current surge) but this surge has only a momentary duration that would not contribute to cable aging effects. Cable aging is dependent on the average temperature exposure of the cable insulation over the 60-year service duration.

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RAI 4.3.1.5-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested clarification of the third sentence in NSPM's response to RAI 4.3.1.5-1 (1/9/09 letter) to indicate that the design transients that bound those presented in LRA Table 4.3-1 are Westinghouse generic design transients for the Reactor Coolant Pumps.

NSPM Response to RAI 4.3.1.5-1 Follow Up Question

In the NSPM Response to RAI 4.3.1.5-1 on Page 8 of the letter dated January 9, 2009, the design transients referenced in the third sentence are the Westinghouse generic design transients used in the original Reactor Coolant Pump exemption from fatigue evaluation.

RAI B2.1.6-2 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that the use of the extra documents cited in the response to RAI B2.1.6-2 (12/5/08 letter) related to the Bolting Integrity Program be identified as an exception to GALL.

NSPM Response to RAI B2.1.6-2 Follow Up Question

As stated in the response to RAI B2.1.6-2 (12/5/08 letter), review has confirmed that the use of EPRI documents NP-5067, NP-6316, or TR-111472 as the basis for certain bolting activities in PINGP plant procedures does not introduce substantive technical differences with, and does not contradict, the guidance for those activities provided in NUREG-1339, EPRI NP-5769 or EPRI TR-104213 which are cited in NUREG-1801, XI.M18. However, contrary to the statements made in the NSPM Response to RAI B2.1.6-2, the use of these documents will be designated as an exception to NUREG-1801, Program XI.M18. To identify the use of documents other than those explicitly cited in NUREG-1801 as exceptions, the following LRA change is hereby made:

In LRA Section B2.1.6 on Page B-22, a second bullet is added under Exceptions to NUREG-1801, to read as follows:

- Scope of Program, Preventive Actions, Corrective Actions

EPRI documents NP-5067, NP-6316, or TR-111472 are used as the basis for certain bolting activities in plant procedures instead of, or in addition to, documents explicitly cited in NUREG-1801. Review has confirmed that the use of these standards does not introduce substantive technical differences with, and does not contradict, the guidance for those activities provided in NUREG-1339, EPRI NP-5769 or EPRI TR-104213 which are cited in NUREG-1801, XI.M18.

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RAI AMP-B2.1.7-1 Follow Up Question

In the 2/3/09 telephone conference, the NRC questioned Part B of the response to RAI AMP-B2.1.7-1. Part B could be interpreted to indicate that boric acid residue could be left on ferritic components for extended periods. NSPM agreed to clarify Part B of the response.

NSPM Response to RAI AMP-B2.1.7-1 Follow Up Question

Part B of the NSPM Response to RAI AMP-B2.1.7-1 (12/5/08 letter) was specifically directed at the question, "Clarify whether the program permits PINGP to leave any boric acid residues in place, and if so, how the program assesses the impacts of boric acid residues on the structural integrity of impacted components if the residues are left in place for any period of time." The response only acknowledges that immediate cleaning and repair may not always be possible due to existing plant conditions, and that situations such as these are addressed in plant procedures. The response should not be interpreted to indicate that PINGP would not promptly clean and repair any identified boric acid leakage if plant conditions permit. For clarity, Part B of the NSPM Response to RAI AMP-B2.1.7-1 is revised in its entirety to read as follows:

Part B

At PINGP, boric acid residue is not normally left in place for extended periods of time. Identified boric acid leaks are cleaned and repaired effectively. Boric acid discovered in critical locations such as the reactor vessel head and other reactor coolant pressure boundary components that are only accessible for inspection during outages would be cleaned prior to startup from the outage. Boric acid residue or active leakage discovered in locations that are not reasonably accessible for cleaning or repair due to plant conditions may be allowed to remain in place for a limited period of time (e.g., until the next outage when access becomes available), but only after an evaluation has confirmed that the continued presence of boric acid would be acceptable for the expected time period.

Upon identification of borated water leakage or boric acid residue, the PINGP Boric Acid Corrosion Program evaluates the condition to determine if the boric acid residues can be left in place until such time as corrective actions, as previously discussed in Part A of the NSPM response, can be initiated at the earliest possible convenience. The following summarizes the process for conducting corrosion evaluations required by the program.

ASME Pressure Boundary Components

If boric acid leakage affects ASME Section XI pressure boundary components other than bolting (e.g.; valve bodies, valve bonnets, piping), then those components are evaluated to determine if the component is acceptable for continued service. Procedures specify that the evaluation should consider corrosion rates and mechanisms, taking into account material susceptibility, surface temperature,

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leakage rates, boric acid concentration, and potential for further concentration by evaporation or boiling.

If the corrosion evaluation determines that code allowables or margins for operability will not be exceeded prior to scheduled corrective maintenance, then it may be concluded that the system is acceptable for continued service pending subsequent re-inspections to validate assumptions, or other possible compensatory measures, if necessary. If the corrosion evaluation determines that corrosion allowables or margins for operability will be exceeded prior to scheduled maintenance, then the time remaining prior to such an exceedance is estimated, and action is assigned to re-inspect/reassess or perform corrective maintenance prior to that time.

Non-ASME or Non-Pressure Boundary ASME Components

Those indications which affect susceptible materials of non-ASME components or susceptible non-pressure boundary materials of ASME Section XI components (e.g.; packing components, stem and yoke) are evaluated. Procedures specify that a corrosion evaluation for a leak left in service should consider corrosion rates and mechanisms (consider surface temperature), boric acid concentration (and potential for further concentration by evaporation or boiling), material susceptibility, leak rates, corrosion allowance and design wall thickness, re-inspection interval, and possible compensatory measures, as necessary. If the corrosion evaluation determines that code allowables or margins for operability will not be exceeded prior to scheduled corrective maintenance, then it may be concluded that the system is acceptable for continued service pending subsequent re-inspections to validate assumptions, or other possible compensatory measures, if necessary. If the corrosion evaluation determines that corrosion allowables or margins for operability will be exceeded prior to scheduled maintenance, then the time remaining prior to such an exceedance is estimated, and action is assigned to re-inspect/reassess or perform corrective maintenance prior to that time.

Mechanical Joints

If observed leakage from mechanical joints (e.g., bolted connections) is determined to be unacceptable, the appropriate corrective actions must be taken to ensure structural integrity. Leakage from mechanical joints that is determined to be acceptable for continued operation is inspected and monitored in order to trend/evaluate changes in leakage. The bases for acceptability are documented. Evaluations for continued service include consideration of corrosion mechanisms and corrosion rates.

B2.1.11 Follow Up Question

In the 1/23/09 telephone conference, the NRC requested that PINGP spell out the exception for each attribute in the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program. The NRC indicated that the

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draft ISG is an acceptable technical basis for the AMP, but the GALL exceptions need to be itemized.

NSPM Response to B2.1.11 Follow Up Question

LRA Section B2.1.11 indicates that the PINGP Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program is consistent with NUREG-1801, XI.E6, with exceptions. The discussion also notes on Page B-31 that the exceptions are consistent with the proposed Interim Staff Guidance LR-ISG-2007-02, noticed by the NRC for public comment in the Federal Register on September 6, 2007 (FRN 72FR51256). Three significant differences are noted between the current NUREG-1801, XI.E6 program, and the September 6, 2007 proposed revision of the XI.E6 program in LR-ISG-2007-02. These differences are:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while NUREG-1801, XI.E6 specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

These differences resulted in the PINGP Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program having exceptions to four elements of the NUREG-1801, XI.E6 program. The specific exceptions are summarized below.

Program Element 1, Scope of Program

NUREG-1801, XI.E6 Element 1, states:

"Connections associated with cables in scope of license renewal are part of this program, regardless of their association with active or passive components."

The PINGP Program states:

"... Program is a one-time inspection program that tests a representative sample of cable connections based upon factors such as application (medium and low voltage), connection type, circuit loading, and location (high temperature, high humidity, vibration, etc.). Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program."

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The exceptions to NUREG-1801, XI.E6 Element 1, are a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 3, Parameters Monitored/Inspected

NUREG-1801, XI.E6 Element 3, states:

"This program will focus on the metallic parts of the connection. The monitoring includes loosening of bolted connections due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation. A representative sample of electrical cable connections is tested. The following factors are to be considered for sampling: application (high, medium and low voltage), circuit loading, and location (high temperature, high humidity, vibration, etc.). The technical basis for the sample selected is to be documented."

The PINGP Program states:

"... Program will focus on the metallic parts of cable connections. The one-time inspection will test a representative sample of electrical connections having different voltage applications (medium and low voltage) and locations (high temperature, high humidity, vibration, etc.), and will demonstrate that the loosening of bolted connections due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation does not occur, and would not require a periodic AMP to prevent electrical connection failures during the period of extended operation. Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program. The technical basis for the sample selected will be documented."

The exceptions to NUREG-1801, XI.E6 Element 3, are a result of:

- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate

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between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 4, Detection of Aging Effects

NUREG-1801, XI.E6 Element 4, states:

“Electrical connections within the scope of license renewal will be tested at least once every 10 years. Testing may include thermography, contact resistance testing, or other appropriate testing methods. This is an adequate period to preclude failures of the electrical connections since experience has shown that aging degradation is a slow process. A 10-year testing interval will provide two data points during a 20-year period, which can be used to characterize the degradation rate. The first tests for license renewal are to be completed before the period of extended operation.”

The PINGP Program states:

“... Program is a one-time inspection program that tests a representative sample of electrical connections within the scope of license renewal and subject to AMR. Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

Factors considered for sample selection will be application (medium and low voltage) ...”

The exceptions to NUREG-1801, XI.E6 Element 4, are a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.
- The proposed LR-ISG-2007-02 excludes high voltage applications (states only medium and low voltage applications), while the NUREG-1801, XI.E6 program includes high, medium, and low voltage applications.
- The proposed LR-ISG-2007-02 excludes internal wiring/cable connections within active assemblies, while the NUREG-1801, XI.E6 program does not differentiate between internal wiring connections within an active assembly and external cable connections to active or passive assemblies.

Program Element 5, Monitoring and Trending

NUREG-1801, XI.E6 Element 5, states:

“Trending actions are not included as part of this program because the ability to trend test results is dependent on the specific type of test chosen. However, test results that are trendable provide additional information on the rate of degradation.”

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The PINGP Program states:

“The Electrical Cable Connections Not Subject to 10CFR50.49 Environmental Qualification Requirements Program is a one-time inspection program, and trending actions are not included.”

The exception to NUREG-1801, XI.E6 Element 4, is a result of:

- The proposed LR-ISG-2007-02 provides for a one-time inspection/test program, while the NUREG-1801, XI.E6 program specifies periodic testing.

Additional Clarification to LRA Sections A2.11 and B2.1.11

During the review of this follow up question, it was determined that LRA Sections A2.1 and B2.1.11 should be changed to use terms which conform to the terminology used in the proposed LR-ISG-2007-02. Accordingly, the following LRA changes are hereby made:

In LRA Section A2.11 on Page A-6, the second and third sentences are revised to read as follows:

Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

In LRA Section B2.1.11 on Page B-31, Program Description, the second and third sentences of the first paragraph are revised to read as follows:

Cable connections terminating within an active or passive device/assembly from external sources are within the scope of this program. Cable/wiring connections terminating within an active assembly from internal sources are not within the scope of this program.

RAI AMP-B2.1.14-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC requested that physical manipulation of elastomers under the External Surfaces Monitoring Program, as discussed in the response to RAI AMP-B2.1.14-1 (letter of 12/5/08), also be addressed in License Renewal Commitment #11, or that an exception or enhancement to the program be identified related to physical manipulation.

NSPM Response to RAI AMP-B2.1.14-1 Follow Up Question

The program enhancements that were identified in LRA Section B2.1.14 and Commitment No. 11 are being expanded to address the use of physical manipulation to identify aging effects in elastomers and plastics, consistent with the response to RAI

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AMP-B2.1.14-1. In addition, during the NRC Region III License Renewal Inspection as noted in Enclosure 2, it was determined that the program enhancements should also address improvements in acceptance criteria, documentation of inspection results, and retention of inspection records. Accordingly, the Enhancements section of LRA Section B2.1.14, on Page B-37, is hereby revised in its entirety to read as follows:

The following enhancements are required to satisfy NUREG-1801 aging management program recommendations. Enhancements will be implemented prior to the period of extended operation.

- **Scope of Program**

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 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.

- **Detection of Aging Effects**

The program will apply physical manipulation techniques, in addition to visual inspection, to detect aging effects in elastomers and plastics.

- **Acceptance Criteria**

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.

- **Administrative Controls**

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.

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Conforming changes are also made to Commitment No. 11. Preliminary License Renewal Commitment No. 11 is hereby revised to appear as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
11	<p>The External Surfaces Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.14

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RAI B2.1.22-1 Follow Up Question

In the 1/22/09 telephone conference, the NRC noted that the paragraph beginning "Additionally," in the response to RAI B2.1.22-1 (page 50 of the 12/5/08 letter) indicates that either enhanced visual or UT examination techniques will be used to inspect for SCC under the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program. The NRC requested that the language of the associated commitment be expanded to include that information so it will be embedded in the USAR.

NSPM Response to RAI B2.1.22-1 Follow Up Question

Preliminary License Renewal Commitment No. 18 is hereby revised to appear as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
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.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.22

Enclosure 2
Clarifying Information in Response to NRC Region III Inspection

B2.0 Aging Management Programs Correlation Table Correction

In LRA Section B2.0 on page B-11, in the comparison table showing the correlation between each NUREG-1801 program and the corresponding PINGP program, the "NUREG-1801 Comparison" entry for program XI.S5, Masonry Wall Program, erroneously indicates that the PINGP program has an enhancement. This table entry is hereby corrected to read as follows:

Existing Program, Consistent with NUREG-1801

B2.1.9 Closed-Cycle Cooling Water System Program Exception

In LRA Section B2.1.9, Closed-Cycle Cooling Water System Program, PINGP has taken an exception to NUREG-1801, Chapter XI, Program XI.M21, Element 3, Parameters Monitored/Inspected. In part, the exception reads, "Some of the pump and heat exchanger performance parameters recommended by NUREG-1801 are not used by PINGP for monitoring specific pumps or smaller converters serviced by the closed-cycle cooling water systems." As further identified in the NSPM Response to RAI AMP-B2.1.9-1 (letter dated 12/5/08), no performance parameters are monitored for three of the closed-cooling water loops listed: the Cold Lab Chiller Loop, Computer Room Chiller Loop, and Hot Lab Chiller Loop. Since these loops are not subject to any periodic performance testing, it was determined that this should also be identified as an exception to Element 4, Detection of Aging Effects, which states, "Performance and functional testing ensures acceptable functioning of the CCCW system or components"

Accordingly, in LRA Section B2.1.9, under Exceptions to NUREG-1801 (Pages B-27 and B-28), a third bullet is hereby added to read as follows:

- Detection of Aging effects

No periodic performance testing is conducted on the Cold Lab Chiller Loop, Computer Room Chiller Loop, or Hot Lab Chiller Loop as recommended by NUREG-1801. Periodic sampling and chemistry controls are adequate to manage aging effects in these closed-cycle cooling water systems.

B2.1.10 Compressed Air Monitoring Program Enhancement

During the NRC Region III Inspection it was determined that the PINGP Station and Instrument Air Dryers are equipped with color-change moisture indicators. The indicators provide a constant visual indication that dry gas is being supplied to the dryer outlet. However, the PINGP Compressed Air Monitoring Program did not credit the use of the moisture indicators as a means of on-line dew point monitoring. As a result, it was determined that on-line dew point monitoring should be explicitly addressed as an enhancement to the existing program.

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Clarifying Information in Response to NRC Region III Inspection

Accordingly, the following enhancement is hereby added as a second bullet to LRA Section B2.1.10, Compressed Air Monitoring Program, "Enhancements" on Page B-30, to read as follows:

- Preventive Actions, Detection of Aging Effects

The program will be enhanced to incorporate on-line dew point monitoring.

A conforming change is also required to Preliminary Commitment No. 7. Preliminary Commitment No. 7 is hereby revised to read as follows:

Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
7	<p>The Compressed Air Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 to use a particle size methodology as specified in ISA S7.0.01. • The program will incorporate on-line dew point monitoring. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.10

B2.1.14 External Surfaces Monitoring Program Enhancements

In LRA Section B2.1.14 on page B-37, it was determined that the enhancements identified for the External Surfaces Monitoring Program should also address improvements in acceptance criteria, documentation of inspection results, and retention of inspection records. These enhancements have been incorporated into the LRA in the NSPM Response to RAI AMP-B2.1.14-1 Follow Up Question on Pages 10 and 11 of Enclosure 1 above.

Enclosure 3

Updated Preliminary License Renewal Commitment List

14 Pages

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
4	Procedures for the conduct of inspections in the External Surfaces Monitoring Program, Structures Monitoring Program,	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.6

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	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.		
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	<p>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.</p> <p>[Revised in letter dated 1/20/2009 in response to RAI 3.3.2-13-01]</p>	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.9
7	<p>The Compressed Air Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 to use a particle size methodology as specified in ISA S7.0.01. • The program will incorporate on-line dew point 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.10

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p style="text-align: center;">monitoring.</p> <p>[Revised in letter dated 2/6/2009 in response to Region III License Renewal Inspection]</p>		
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	<p>The External Surfaces Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 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 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.14

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> • 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. <p>[Revised in letter dated 2/6/2009 in response to RAI B2.1.14-1 Follow Up question]</p>		
12	<p>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.</p> <p>[Revised in letter dated 12/5/2008 in response to RAI B2.1.15-3]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.15
13	<p>The Fire Water System Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • The program will be expanded to include eight additional yard fire hydrants in the scope of the annual visual inspection and flushing activities. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.16

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> 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. 		
14	<p>The Flux Thimble Tube Inspection Program will be enhanced as follows:</p> <ul style="list-style-type: none"> 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. The program will require that flux thimble tubes that cannot be inspected must be removed from service. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.18
15	<p>The Fuel Oil Chemistry Program will be enhanced as follows:</p> <ul style="list-style-type: none"> 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.19

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> One-time ultrasonic thickness measurements will be performed at selected tank bottom and piping locations prior to the period of extended operation. 		
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	<p>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.</p> <p>[Revised in letter dated 2/6/2009 in response to RAI B2.1.22-1 Follow Up question]</p>	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.22
19	<p>The Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems Program will be enhanced as follows:</p> <ul style="list-style-type: none"> 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. 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.23

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
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	For the Nickel-Alloy Nozzles and Penetrations Program, PINGP commits to the following activities for managing the aging of nickel-alloy components susceptible to primary water stress corrosion cracking: <ul style="list-style-type: none"> • Comply with applicable NRC orders, and • Implement applicable NRC Bulletins, Generic Letters, and staff-accepted industry guidelines. 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.27
22	The Nickel-Alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of Pressurized Water Reactors Program will be enhanced as follows: <ul style="list-style-type: none"> • 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 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 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.28

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> 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 described in LRA Section B2.1.30.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.30
25	<p>For the PWR Vessel Internals Program, PINGP commits to the following activities for managing the aging of reactor vessel internals components:</p> <ul style="list-style-type: none"> Participate in the industry programs for investigating and managing aging effects on reactor internals; Evaluate and implement the results of the industry 	U1 - 8/9/2011 U2 - 10/29/2012	B2.1.32

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>programs as applicable to the reactor internals; and</p> <ul style="list-style-type: none"> • 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. 		
26	<p>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.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.33
27	<p>The Reactor Vessel Surveillance Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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 placed in storage and maintained for future insertion. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.34

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
28	<p>The RG 1.127, Inspection of Water-Control Structures Associated with Nuclear Power Plants Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.35
29	<p>A Selective Leaching of Materials Program will be completed. Program features will be as described in LRA B2.1.36.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.36
30	<p>The Structures Monitoring Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • The following structures, components, and component supports will be added to the scope of the inspections: <ul style="list-style-type: none"> ○ Approach Canal 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.38

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> ○ Fuel Oil Transfer House ○ Old Administration Building and Administration Building Addition ○ 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 ○ 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 ○ Miscellaneous mechanical equipment enclosures including housings for HVAC fans, louvers, and dampers ○ SBO Yard Structures and components including SBO cable vault and bus duct enclosures. ○ Fire Protection System hydrant houses ○ Caulking, sealant and elastomer materials ○ Non-safety related masonry walls that support equipment relied upon to perform a function that demonstrates compliance with a regulated event(s). 		

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> • 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	<p>The Water Chemistry Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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. • 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." <p>[Revised in letter dated 12/5/2008 in response to RAI B2.1.40-3]</p>	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.40

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
33	<p>The Metal Fatigue of Reactor Coolant Pressure Boundary Program will be enhanced as follows:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ Reactor Vessel Inlet and Outlet Nozzles ○ Reactor Pressure Vessel Shell to Lower Head ○ RCS Hot Leg Surge Line Nozzle ○ RCS Cold Leg Charging Nozzle ○ RCS Cold Leg Safety Injection Accumulator Nozzle ○ 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. <p>[Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B3.2
34	<p>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.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B3.2

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
35	<p>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.</p> <p>[Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	4.3.1.3
36	<p>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.</p> <p>[Added in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]</p>	April 30, 2009	4.3.3