



August 7, 2009

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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

Responses to NRC Follow-up Questions 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. During the Aging Management Audit in September 2008, the NRC was briefed on water seepage from the refueling cavity that had been detected during refueling outages. Since that time the matter has been discussed with the NRC on several occasions, and NSPM has submitted responses to a number of NRC questions. The most recent responses were submitted in a letter dated June 24, 2009. In a conference call on July 22, 2009, several follow-up questions were raised regarding the June 24, 2009 letter. The NSPM responses to those follow-up questions are provided in Enclosure 1.

During the conference call, NSPM agreed to clarify the existing commitments related to the refueling cavity leakage. Accordingly, as noted below, a new License Renewal Commitment No. 44 is being provided, and License Renewal Commitment No. 41 is being revised, to incorporate this clarification. A complete listing of PINGP License Renewal Commitments, updated to reflect NSPM correspondence to date, is provided in Enclosure 2.

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

Summary of Commitments

This letter contains one new commitment and one revised commitment to be completed prior to entry into the period of extended operation.

New License Renewal Commitment No. 44 reads as follows:

During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), a concrete sample will be

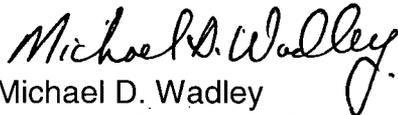
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obtained from a location known to have been wetted by borated water leakage from the refueling cavity. These concrete samples (one per Unit) will be tested for compression strength and will be subjected to petrographic examination to assess the degradation, if any, resulting from borated water exposure. Degradation identified as a result of the testing and examination of the concrete samples will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.

License Renewal Commitment No. 41 is revised to read as follows:

During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), concrete will be removed from the sump C pit to expose an area of the containment vessel bottom head. Visual examination and ultrasonic thickness measurement will be performed on the portions of the containment vessels exposed by the excavations. An assessment of the condition of exposed concrete and rebar will also be performed. Petrographic examination will be performed on sample pieces of the removed concrete if the removal method provides pieces suitable for examination. Degradation observed in the exposed containment vessel, concrete or rebar, or as a result of petrographic examination of concrete samples, will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on August 7, 2009.



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

Enclosures (2)

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
Responses to Follow-up Questions Related to NSPM Letter of June 24, 2009

NRC Follow-up Questions Related to NSPM Letter of June 24, 2009

In a letter dated June 24, 2009, NSPM responded to NRC Follow-up RAI B2.1.38 regarding leakage from the PINGP Units 1 and 2 refueling cavities that had been observed intermittently during refueling outages. In a conference call on July 22, 2009, follow-up questions were raised about the responses provided to Follow-up RAI B2.1.38, Parts c, e, g and i. Responses to the follow-up questions are provided below.

NSPM Response to Follow-up Question on Part c

The NSPM response to Part c in the letter dated June 24, 2009, indicated that an evaluation has estimated the likely corrosion of a PINGP containment vessel resulting from the refueling cavity leakage to date at no more than 0.010 inch. The response also indicated that recent ultrasonic thickness measurements, including measurements of known wetted areas in the RHR suction sump, have shown no corrosion (all thickness readings were above the nominal plate thickness), and stated that, if any significant wall loss were to be identified, an ASME Code evaluation would be required. In the conference call on July 22, 2009, the NRC requested additional discussion about the logical process that would be used to evaluate a reduction in containment wall thickness if any should be identified in the future.

The PINGP Reactor Containment Vessels were designed, fabricated, constructed, and stamped in accordance with the rules of the 1965 Edition (including all addendums through Winter 1967) of ASME Section III, Subsection B, as well as Code Case 1392 Rev. 0. The required minimum wall thickness was determined from equations found in ASME Code Section VIII as allowed by Code Case 1392. The containment vessel material of construction is SA-516-70. For the current inspection interval, NSPM performs inservice inspections and evaluations of the PINGP containment vessels in accordance with ASME Section XI, Subsection IWE, 1992 Edition with Addenda through 1992 and 10 CFR 50.55a.

As noted above, there is no known containment wall thinning from corrosion, and the containment vessels currently meet all design code and inspection code requirements. However, if a thinned area were to be identified in a pressure vessel, the amount of thinning and the remaining wall thickness would be determined by measurements in the affected areas. The issue would be entered into the Corrective Action Program. The Corrective Action Program would manage and track the evaluations of operability, compliance with design requirements, and safety significance; and would assign and track any required actions.

The first step of an evaluation of observed wall thinning would be to compare the remaining wall thickness to the requirements of the containment vessel design code. Any indications found where the wall thickness is less than the design thickness of 1.5 inches would require further evaluation.

The second level of an evaluation would be to compare the measured wall thinning from corrosion to the 10% wall loss determined to be acceptable under ASME Code Section XI. As stated in ASME Code Section XI, Subsection IWE-3122.4, "If either the

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thickness of the base metal in local areas is reduced by no more than 10% of the nominal plate thickness or the reduced thickness can be shown by analysis to satisfy the requirements of the Design Specifications, the component is acceptable by engineering evaluation." Under this paragraph a loss of thickness up to 0.15 inch (10% loss) of the 1.5 inch vessel shell or bottom head could be found acceptable without further evaluation. If the wall loss exceeded 0.15 inch, then additional analysis would be required.

As indicated in Subsection IWE-3122.4, the third level of evaluation would be to determine whether the reduced plate thickness satisfies the requirements of the design specifications. The Prairie Island ASME Section XI, Subsection IWE Program requirements are as follows:

- The engineering evaluation shall demonstrate that the requirements of the Construction Design Specification have been maintained.
- For material thickness degradation exceeding 10%, the design by analysis shall be included in the evaluation. Evaluations that predict material degradation exceeding 10% of the nominal material thickness prior to the next refueling outage shall also require analysis.
- Any indications that were determined not to be acceptable by evaluation under ASME Code Section XI would require repair or replacement.

NSPM would typically utilize outside engineering assistance experienced in ASME Section XI evaluations to evaluate a wall loss of over 10%.

Pressure vessels are typically designed with high safety factors as evidenced by the fact that the minimum 70,000 psi tensile strength of the SA-516-70 material is four times the allowable stress of 17,500 psi. As such, there is a high level of confidence that the containment vessel would not fail under a design basis accident even with areas of corrosion exceeding the 10% wall thinning allowed by ASME Code Section XI.

In summary, the PINGP containment vessels have no known wall thinning from corrosion, and are not expected to have accumulated more than 0.010 inch of corrosion over the plant life to date. ASME Code Section XI provides for the acceptance of up to 0.15 inch of corrosion with minimal evaluation. Corrosion greater than 0.15 inch may still be acceptable under ASME Code Section XI, and still provide significant safety margin, with due consideration of the material properties, geometry of the indication, and all potential stresses including pressure, thermal and seismic. Ultimately, however, any indications that were determined not to be acceptable by evaluation under ASME Code Section XI would require repair or replacement in order to be acceptable for continued service.

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NSPM Response to Follow-up Question on Part e

In the conference call on July 22, 2009, the NRC requested that NSPM commit to removing and testing a sample of concrete from an area known to have been wetted by borated water from refueling cavity leakage. Accordingly, a new License Renewal Commitment No. 44 is provided, to read as follows:

During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), a concrete sample will be obtained from a location known to have been wetted by borated water leakage from the refueling cavity. These concrete samples (one per Unit) will be tested for compression strength and will be subjected to petrographic examination to assess the degradation, if any, resulting from borated water exposure. Degradation identified as a result of the testing and examination of the concrete samples will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.

These concrete samples will be obtained and tested prior to entry into the period of extended operation.

In addition, in the conference call on July 22, 2009, the NRC requested that NSPM consider performing petrographic examination of concrete removed from sump C. NSPM will perform such testing if suitable pieces of concrete are available given the concrete removal methodology that has to be employed to preclude damage to rebar and the containment vessel. Accordingly, License Renewal Commitment No. 41 is being revised to read as follows:

During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), concrete will be removed from the sump C pit to expose an area of the containment vessel bottom head. Visual examination and ultrasonic thickness measurement will be performed on the portions of the containment vessels exposed by the excavations. An assessment of the condition of exposed concrete and rebar will also be performed. Petrographic examination will be performed on sample pieces of the removed concrete if the removal method provides pieces suitable for examination. Degradation observed in the exposed containment vessel, concrete or rebar, or as a result of petrographic examination of concrete samples, will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.

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Responses to Follow-up Questions Related to NSPM Letter of June 24, 2009

NSPM Response to Follow-up Question on Part g

The NSPM response to Part g indicated that even if a thin layer of grout were to degrade or wash out from behind the refueling cavity liner, the result would be shallow depressions in the liner and not liner failures such as tearing. During the conference call of July 22, 2009, the NRC asked whether liner inspections would be performed.

NSPM stated that it would perform visual inspections in areas of the refueling cavity liner selected as being the most likely to experience degradation due to the existing leakage. As discussed in the call, visual inspections will be performed in the general vicinity of the support stands for the reactor internals and the Rod Cluster Control Assembly change fixtures, the locations concluded to be leaking. These inspections would look for depressions in the liner that could be signs of a grout washout due to the refueling cavity leakage. These liner inspections will occur in conjunction with the repairs scheduled for refueling outages 1R26 and 2R26.

NSPM Response to Follow-up Question on Part i

The NSPM response to Part i indicated that vacuum box testing would be performed on a sample of accessible seams in the refueling cavity liner. During the conference call of July 22, 2009, the NRC requested additional information about the vacuum box testing that will be performed.

As discussed in the call, the reason for performing vacuum box testing is in response to industry operating experience which has shown stainless steel liner plate welds have experienced chloride stress corrosion cracking. The site performed extensive vacuum box testing of the refueling cavity liners in both Units during the 1998 and 1999 refueling outages. NSPM plans to perform vacuum box testing of approximately 100 linear feet (per Unit) of accessible refueling cavity floor and wall liner seams during the next refueling outage of each Unit (refueling outages 1R26 and 2R26) to ensure no weld failures have occurred since the last inspection. This extent of vacuum box testing will encompass the majority of the accessible floor seams of the lower refueling cavity in the vicinity of the reactor internals stands, and approximately 6 feet up the accessible wall seams.

Testing will be performed by VT-2 qualified examiners. The test consists of application of a liquid leak detector (similar to soap and water) to the seam followed by application of a vacuum and inspection for the formation of bubbles that would indicate liner seam leakage.

Although no leakage is expected, any detected leakage would be entered into the Corrective Action Program and repaired in accordance with current site work control and welding processes.

Enclosure 2

Prairie Island Nuclear Generating Plant License Renewal Commitments

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Prairie Island Nuclear Generating Plant License Renewal Commitments

The following table provides the list of commitments included in the Application for Renewed Operating Licenses (LRA) for Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2, as updated in subsequent correspondence.

The commitments in this list are anticipated to be the final commitments which will be confirmed in the NRC's Safety Evaluation Report (SER) for the renewed operating licenses. These commitments, as confirmed in the SER, will become effective upon NRC issuance of the renewed 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 Annual Update was submitted by letter dated 4/13/09	1.4
2	Following the issuance of the renewed operating license, the summary descriptions of aging management programs and TLAA's 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	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.	U2 - 10/29/2014	
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. 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.10

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<ul style="list-style-type: none"> • The program will incorporate on-line dew point monitoring. <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 	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>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.</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>	<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 be expanded to include eight additional yard fire hydrants in the scope of the annual visual inspection and flushing activities. • The program will require that sprinkler heads that have been in place for 50 years will be replaced or a representative sample of sprinkler heads will be tested using the guidance of NFPA 25, "Inspection, Testing and Maintenance of Water-Based Fire Protection Systems" (2002 Edition, Section 5.3.1.1.1). Sample testing, if performed, will continue at a 10-year interval following the initial testing. 		
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

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
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. • One-time ultrasonic thickness measurements will be performed at selected tank bottom and piping locations prior to the period of extended operation. 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.19
16	<p>A Fuse Holders Program will be implemented. Program features will be as described in LRA Section B2.1.20.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.20
17	<p>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</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	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>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	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>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.23

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<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. 		
20	A Metal-Enclosed Bus Program will be implemented. Program features will be as described in LRA Section B2.1.26.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.26.
21	Number Not Used [Revised in letter dated 3/27/2009]		
22	Number Not Used [Revised in letter dated 4/13/2009]		
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>A. A PWR Vessel Internals Program will be implemented. Program features will be as described in LRA Section B2.1.32.</p> <p>B. An inspection plan for reactor internals will be submitted for NRC review and approval at least twenty-four months prior to the period of extended operation. In addition, the submittal will include any necessary revisions to the PINGP PWR Vessel</p>	<p>A. U1 - 8/9/2013 U2 - 10/29/2014</p> <p>B. U1 - 8/9/2011 U2 - 10/29/2012</p>	B2.1.32

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>Internals Program, as well as any related changes to the PINGP scoping, screening and aging management review results for reactor internals, to conform to the NRC-approved Inspection and Evaluation Guidelines.</p> <p>[Revised in letter dated 5/12/2009] [Revised in letter dated 6/24/09 in response to Follow-up RAI B2.1.38]</p>		
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
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 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.35

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> • 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. 		
29	A Selective Leaching of Materials Program will be completed. Program features will be as described in LRA B2.1.36.	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.36
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 ○ 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 	U1 - 8/9/2013 U2 - 10/29/2014	B2.1.38

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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</p> <ul style="list-style-type: none"> ○ 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). <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 		

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Commitment Number	Commitment	Implementation Schedule	Related LRA Section Number
	<p>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.</p> <ul style="list-style-type: none"> • The program will require periodic sampling of groundwater and river water chemistries to ensure they remain non-aggressive. 		
31	<p>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.</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	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>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.40
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 	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B3.2

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	<p>by tracking the cumulative fatigue usage, including the effects of coolant environment. The following locations will be monitored:</p> <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 <ul style="list-style-type: none"> ● 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>		
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
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</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	4.3.1.3

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	Coolant Pressure Boundary Program. [Revised in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]		
36	NSPM will complete fatigue calculations for the pressurizer surge line hot leg nozzle and the charging nozzle using the methodology of the ASME Code (Subsection NB) and will report the revised CUFs and CUFs adjusted for environmental effects at these locations as an amendment to the PINGP LRA. Conforming changes to LRA Section 4.3.3, "PINGP EAF Results," will also be included in that amendment to reflect analysis results and remove references to stress-based fatigue monitoring. [Added in letter dated 1/9/2009 in response to RAI 4.3.1.1-1]	April 30, 2009 Commitment closed by letter dated 4/28/09	4.3.3
37	NSPM will revise procedures for excavation and trenching controls and archaeological, cultural and historic resource protection to identify sensitive areas and provide guidance for ground-disturbing activities. The procedures will be revised to include drawings and illustrations to assist users in identifying culturally sensitive areas, and pictures of artifacts that are prevalent in the area of the Plant site. The revised procedures will also require training of the Site Environmental Coordinator and other personnel responsible for proper execution of excavation or other ground-disturbing activities. [Added in ER revision submitted in letter dated 3/4/2009]	8/9/2013	ER 4.16.1
38	NSPM will conduct a Phase I Reconnaissance Field Survey of the disturbed areas within the Plant's boundaries. In addition, NSPM will conduct Phase I field surveys of areas of known archaeological sites to precisely determine their boundaries.	8/9/2013	ER 4.16.2

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	<p>NSPM will use the results of these surveys to designate areas for archaeological protection.</p> <p>[Added in ER revision submitted in letter dated 3/4/2009]</p>		
39	<p>NSPM will prepare, maintain and implement a Cultural Resources Management Plan (CRMP) to protect significant historical, archaeological, and cultural resources that may currently exist on the Plant site. In connection with the preparation of the CRMP, NSPM will conduct botanical surveys to identify culturally and medicinally important species on the Plant site, and incorporate provisions to protect such plants into the CRMP.</p> <p>[Added in ER revision submitted in letter dated 3/4/2009]</p>	8/9/2013	ER 4.16.2
40	<p>NSPM will consult with a qualified archaeologist prior to conducting any ground-disturbing activity in any area designated as undisturbed and in any disturbed area that is described as potentially containing archaeological resources (as determined by the Phase I Reconnaissance Field Survey discussed in Commitment Number 38).</p> <p>[Added in ER revision submitted in letter dated 3/4/2009]</p>	8/9/2013	ER 4.16.2
41	<p>During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), concrete will be removed from the sump C pit to expose an area of the containment vessel bottom head. Visual examination and ultrasonic thickness measurement will be performed on the portions of the containment vessels exposed by the excavations. An</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.38

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	<p>assessment of the condition of exposed concrete and rebar will also be performed. Petrographic examination will be performed on sample pieces of the removed concrete if the removal method provides pieces suitable for examination. Degradation observed in the exposed containment vessel, concrete or rebar, or as a result of petrographic examination of concrete samples, will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.</p> <p>[Added in letter dated 4/6/09 in response to Follow Up RAI B2.1.38] [Revised in letter dated 8/7/09 in response to a follow-up question from a conference call on July 22, 2009]</p>		
42	<p>During the two consecutive refueling outages following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), visual inspections will be performed of the areas where reactor cavity leakage had been observed previously to confirm that leakage has been resolved. The inspection results will be documented. If refueling cavity leakage is again identified, the issue will be entered into the Corrective Action Program and evaluated for identification of additional actions to mitigate leakage and monitor the condition of the containment vessel and internal structures.</p> <p>[Added in letter dated 4/6/09 in response to Follow Up RAI B2.1.38]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.38
43	<p>Preventive maintenance requirements will be implemented to require periodic replacement of rubber flexible hoses in the Diesel Generators and Support System and in the 122 Diesel Driven Fire Pump that are exposed to fuel oil or lubricating oil</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	Table 3.3.2-8

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	<p>internal environments.</p> <p>[Added in letter dated 4/6/09 in response to RAI 3.3.2-8-1] [Revised in letter dated 6/5/09]</p>		
44	<p>During the first refueling outage following refueling cavity leak repairs in each Unit (scheduled for refueling outages 1R26 and 2R26), a concrete sample will be obtained from a location known to have been wetted by borated water leakage from the refueling cavity. These concrete samples (one per Unit) will be tested for compression strength and will be subjected to petrographic examination to assess the degradation, if any, resulting from borated water exposure. Degradation identified as a result of the testing and examination of the concrete samples will be entered into the Corrective Action Program, and evaluated for impact on structural integrity and identification of additional actions that may be warranted.</p> <p>[Added in letter dated 8/7/09 in response to a follow-up question from a conference call on July 22, 2009.]</p>	<p>U1 - 8/9/2013 U2 - 10/29/2014</p>	B2.1.38