Xcel Energy®

December 18, 2008

L-PI-08-113
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

Responses to NRC Requests for Additional Information Dated December 5, 2008 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. In a letter dated December 5, 2008, the NRC transmitted Requests for Additional Information (RAIs) regarding that application. This letter provides responses to those RAIs.

Enclosure 1 provides the text of each RAI followed by the NSPM response.

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

Summary of Commitments

This letter contains no new commitments or changes to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on December 18, 2008.

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

1717 Wakonade Drive East • Welch, Minnesota 55089-9642
Telephone: 651.388.1121

A133
NRR

Enclosure (1)

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 Requests for Additional Information
Dated December 5, 2008

RAI B2.1.3-1

The staff noted that the applicant, in License Renewal Application (LRA) Appendix B2.1.3, describes the present approved Prairie Island Nuclear Generating Plant (PINGP) Inservice Inspection (ISI) program for the fourth ISI interval. Specified limitations, modifications and NRC approved alternatives described in Appendix B2.1.3 only apply to the fourth ISI interval. Please describe how PINGP will implement the ISI program during the period of extended operation.

NSPM Response to RAI B2.1.3-1

As described in LRA Sections A2.3 (Page A-3) and B2.1.3 (Page B-16), the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program "... is implemented in accordance with the requirements of 10 CFR 50.55a, with specified limitations, modifications and NRC-approved alternatives." This generic statement applies to the current inspection interval, and is also applicable to program implementation during the period of extended operation. The use of limitations, modifications, and NRC-approved alternatives is authorized by the federal regulations (i.e., 10 CFR 50.55a, Codes and Standards) which govern the implementation of ASME Section XI.

NSPM acknowledges that the specific limitations, modifications, and NRC-approved alternatives (i.e., relief requests and code cases) currently incorporated into the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program only apply to the current, fourth inservice inspection interval. For subsequent inspection intervals during the period of extended operation, the program will be updated as required by 10 CFR 50.55a.

For future inspection intervals, the ASME Section XI Code edition and addenda will comply with the requirements of 10 CFR 50.55a(g)(4)(ii) subject to the limitations and modifications of 10 CFR 50.55a(b). Code cases will be implemented in accordance with 10 CFR 50.55a(b)(5) and NRC Regulatory Guide 1.147. Proposed alternatives (e.g., relief requests) will be submitted to the NRC for approval in accordance with 10 CFR 50.55a(g)(5)(iii) and 10 CFR 50.55a(g)(5)(iv).

RAI B2.1.8-1

NUREG-1801, "Generic Aging Lessons Learned" (GALL) aging management program (AMP) XI.M34, recommends in the "preventative actions" element, coating underground piping with a protective coating system. In LRA AMP B2.1.8 the applicant stated that portions of buried coated carbon steel piping of the cooling water and fire protection systems have been replaced as a result of microbiologically-influenced corrosion indications on the piping inside diameter. It is not clear what replacement material(s) were used or if coating or wrapping was used. Please specify what replacement materials were used and if the replacement piping was coated or wrapped?

Enclosure 1
NSPM Responses to NRC Requests for Additional Information
Dated December 5, 2008

NSPM Response to RAI B2.1.8-1

The Cooling Water (CL) System piping replacement materials were ASTM A106, Grade B and ASTM A155, Grade KC-70, Class I carbon steel piping. The piping was coated with a coal tar enamel and wrapped. The Fire Protection (FP) System replacement piping materials were Class 52 and Class 53 ductile cast iron piping with a bituminous external coating. The FP System piping was not wrapped.

RAI B2.1.8-2

GALL AMP XI.M34 recommends, in the "detection of aging" element, that any credited inspection should be performed in areas with the highest likelihood of corrosion problems, and in areas with a history of corrosion problems. In LRA AMP B2.1.8 the applicant stated that opportunistic or focused excavations and subsequent visual inspections will be performed on buried piping and tanks but does not identify how locations will be identified for inspection. Please identify how locations for focused inspections will be identified for excavation and inspection?

NSPM Response to RAI B2.1.8-2

The groundwater at PINGP contains no significant concentrations of aggressive ions. Well water chemistry test results taken over a span of 22 years (1984 to 2006) indicate a pH ranging from 7.6 to 8.2, a maximum chloride concentration of 46.9 ppm, and a maximum sulfate concentration of 39.2 ppm. Since these pH, chloride and sulfate concentrations satisfy the NUREG-1801, Chapter III.A criteria, the below grade environment at PINGP is considered to be non-aggressive, and essentially, benign. Consequently, based upon the environmental conditions, there is no specific area more prone to loss of material than another.

An operating experience review did not identify cases of leakage due to outside surface corrosion of underground piping at PINGP. Portions of the Cooling Water (CL) and Fire Protection (FP) Systems' buried piping were replaced in 1992 as a result of MIC indications on the internal surfaces of dead-leg portions of these systems. Although no documented observations of the condition of the external piping coating/surface was provided concerning the excavation with the exception of limited CL System photographs, verbal dialogue has indicated that no external surface degradation or anomalies were identified.

However, in order to identify locations for focused inspections, areas with the highest likelihood of corrosion and areas with a history of corrosion will be evaluated for excavation and inspection. Focused inspections will be performed based upon plant and industry operating experience. The results of previous inspections will be evaluated, and used to assess the condition of the external surfaces of other buried carbon steel and cast iron components, and to identify susceptible locations that may warrant further inspections. Any components with coating and wrapping degradation or significant corrosion found during future inspections will be documented and evaluated

under the PINGP Corrective Action Program, which includes provisions for a root cause analysis, if appropriate.

The PINGP Buried Piping and Tanks Inspection Program is a new program. Implementation of the program provides reasonable assurance that aging effects will be managed such that structures, systems, and components within the scope of this program will continue to perform their intended function(s) during the period of extended operation.

RAI B2.1.19-1

GALL AMP XI.M30 recommends, in the "monitoring and trending" element, that particulate contamination concentrations are monitored in accordance with plant technical specifications or at least quarterly. The applicant stated in LRA B2.1.19, that particulate contamination testing of fuel oil will be performed annually and not quarterly; annual testing is sufficiently frequent to verify that particulates are not forming, and the absence of previous particulate contamination during routine historical sampling and analysis justifies a relaxed sampling frequency. The staff considers that operating history alone is not sufficient justification for relaxing the sampling frequency. Provide additional justification for relaxation of the sampling frequency.

NSPM Response to RAI B2.1.19-1

Annual particulate contamination testing of fuel oil is considered sufficient to verify that particulates are not forming. The absence of particulate contamination during routine historical sampling and analysis provides operating experience that shows particulate contamination of fuel oil has not been a problem at PINGP. The practice of quarantining new fuel deliveries in isolated tanks until sampling and analysis are complete, provides a robust safeguard to prevent fuel oil contaminated with particulates from being added to storage tanks.

The PINGP Fuel Oil Chemistry Program monitors fuel oil quality and the levels of water, sediment, and contaminants which can cause loss of material due to corrosion and cracking on piping, piping component and tank inside surfaces. The program implements the requirements of PINGP Technical Specifications Section 5.5.11 which states, "A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with the limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water, and sediment. Acceptability of new fuel oil shall be determined prior to addition to the safeguards storage tanks. Testing of diesel fuel oil stored in the safeguards storage tanks shall be performed at least every 31 days." Fuel oil sampling is performed using the guidance of ASTM D 4057. Water and sediment testing is performed in accordance with ASTM D 1796. The following sampling is performed:

- Monthly sampling of water and sediment percentage, and viscosity for all eight emergency diesel generator fuel oil storage tanks and the two diesel-driven cooling water pump fuel oil storage tanks. Monthly sampling is performed to meet the requirements of PINGP Technical Specifications Section 5.5.11.

- Quarterly sampling of water and sediment percentage and viscosity of the diesel-driven fire pump fuel oil day tank (aboveground tank).

- Annual sampling of top, middle, and bottom locations of all eleven fuel oil storage tanks. This includes eight emergency diesel generator fuel oil storage tanks, the two diesel-driven cooling water pump fuel oil storage tanks, and the diesel-driven fire pump fuel oil storage tank. Testing at all sample levels includes water and sediment percentage, and viscosity. Bottom samples are also tested for a number of other parameters specified by ASTM D 975. The other parameters include flash point, cloud point, ash percentage, distillation temperatures, API gravity, sulfur percentage, BTU per pound, and cetane index. A water-indicating paste is applied to a fuel oil gauging stick which is lowered into the tank until it reaches tank bottom. The paste is inspected for signs of water.

- Receipt inspection of new fuel oil for water and sediment percentage, viscosity, and a number of other parameters specified by ASTM D 975 as noted above are performed for each delivery of fuel oil for use in safety related diesel engines. The new fuel oil samples are representative of the conditions in the D5/D6 Fuel Oil Receiving Tank.

- As an enhancement to the program (refer to PINGP LRA, Page B-47), 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.

As outlined above, periodic sampling is performed at a number of storage tank locations, including multi-level sampling, and as part of new fuel oil receipt. A number of parameters are measured to confirm the continued acceptability of fuel oil quality. Sampling and established acceptance criteria provide assurance that fuel oil contaminants are maintained within acceptance limits established in industry recognized ASTM standards. Fuel oil chemistry results are routinely within specification requirements and water and sediment percentages are within acceptance limits with no indication of adverse trends. As further evidence of the plant's fuel oil quality, particulate contamination testing per ASTM D 6217 was recently conducted on ten of the eleven fuel oil storage tanks. Test results confirmed that contamination levels for all ten storage tanks did not exceed 1.0 mg/L, well below the acceptance criterion of 20 mg/L.

In addition, when new fuel oil is received on the site for use by safety related components, it is initially delivered into either the D5/D6 Fuel Oil Receiving Tank (for Unit 2 emergency diesel generator use), or the 121 or 122 Heating Boiler Storage Tank (for Unit 1 emergency diesel generator use). The fuel oil is isolated from safety related

storage tanks until sampling and analysis have confirmed that the new fuel meets Technical Specifications limits for quality. It is only then that fuel oil is transferred into the various safety related storage tanks. This assures that new fuel oil introduced into storage tanks for safety related use meets all quality requirements, and effectively eliminates the potential for contaminating existing fuel oil supplies from new fuel deliveries.

The PINGP Fuel Oil Chemistry Program has been effective in monitoring and controlling diesel fuel oil chemistry to mitigate aging effects. The enhanced Fuel Oil Chemistry Program provides reasonable assurance that aging effects will be managed such that structures, systems, and components within the scope of this program will continue to perform their intended function(s) during the period of extended operation.

RAI B2.1.19-2

GALL AMP XI.M30 recommends, in the "monitoring and trending" element, to monitor and trend biological activity at least quarterly. In its review of LRA B2.1.19 and the associated basis document, the staff noted that the applicant does not state whether or not fuel oil is tested for biological activity. Please confirm if microbiological activity is monitored in fuel oil. If so, what is the frequency of monitoring for microbiological activity? If not, why is lack of monitoring for biological activity not identified as an exception to GALL AMP XI.M30?

NSPM Response to RAI B2.1.19-2

PINGP does not monitor fuel oil for biological activity, as recommended by NUREG-1801, Program XI.M30, Element 5, Monitoring and Trending. Fuel oil samples have not shown cloudiness, sludge, or other conditions that would indicate significant biological activity or fuel degradation. Fuel oil quality parameters, including water and sediment percentage, are routinely within acceptance limits at the various monitored locations and no adverse trends have been identified. See the response to RAI B2.1.19-1 for a description of the extensive fuel oil monitoring/testing that is routinely performed.

The internal visual inspections of storage tank surfaces that have been completed have identified no significant corrosion, pitting or areas requiring repair due to aging effects, and no indications of unacceptable fuel oil chemistry control. Ultrasonic testing of one tank was performed in 1995 and no wall thinning due to corrosion was detected. PINGP operating experience has not identified any problems involving water in the diesel fuel oil, particulate contamination, or biological fouling.

NSPM will identify the lack of monitoring for biological activity as an exception to NUREG-1801, AMP XI.M30, Fuel Oil Chemistry. As a result, the PINGP LRA is amended as described below.

In Appendix B2.1.19, Fuel Oil Chemistry Program, under "Exceptions to NUREG-1801," under the "Monitoring and Trending" bullet on Page B-46, add a second paragraph that reads as follows:

> "Fuel oil is not periodically monitored for biological activity. Fuel oil quality parameters, including water and sediment percentage, are routinely within acceptance limits at the various monitored locations and no adverse trends have been identified. The internal visual inspections of storage tank surfaces that have been completed have identified no significant corrosion, pitting or areas requiring repair due to aging effects, and no indications of unacceptable fuel oil chemistry control. Plant operating experience has not identified any problems involving water in the diesel fuel oil, particulate contamination, or biological fouling."

RAI B2.1.19-3

GALL AMP XI.M30 recommends, in the "preventive actions" and "detection of aging effects" elements, periodic cleaning and visual examination of fuel oil tanks. GALL AMP XI.M30 also recommends in the "detection of aging" element, ultrasonic thickness measurements for locations where contaminants can accumulate, such as tank bottoms, to ensure significant degradation is not occurring. In its review of LRA B2.1.19 and the associated basis document, the staff noted that it is not clear if all fuel tanks that are not subjected to periodic cleaning and visual inspection of the tank interior will be subjected to ultrasonic testing (UT) of the tank bottoms or what the extent of UT of tank bottoms (grid size) will be. The applicant states in LRA B2.1.19, "Exception to NUREG-1801," that day tanks and clean fuel oil leakage collection tanks of the diesel generators, and the day tanks of the diesel cooling water pumps and the diesel fire pump will not be subjected to cleaning and visual inspection. An enhancement to LRA B2.1.19 states that select tank bottoms will be subjected to UT. Please provide the results of all diesel fuel tank cleaning and inspections. Which fuel tanks will be subjected to UT of the tank bottom? What will be the extent of UT of tank bottoms (grid size)? Provide a list of specific fuel tanks (if any) that will not be subjected to periodic cleaning and visual inspection or UT. Provide a justification for not verifying that loss of material is occurring in fuel tanks that are not subjected to cleaning and visual inspection or UT.

NSPM Response to RAI B2.1.19-3

The PINGP Fuel Oil System tanks that are in-scope for license renewal and managed by the Fuel Oil Chemistry Program include the following:

- Four underground storage tanks (two per emergency diesel generator) servicing Unit 1 emergency diesel generators D1 and D2 and two associated aboveground day tanks (one per emergency diesel generator).
- Four vaulted fuel oil storage tanks (two per emergency diesel generator) servicing Unit 2 emergency diesel generators D5 and D6 and two associated aboveground

day tanks (one per emergency diesel generator). Each of the four storage tanks is located in a below ground concrete vault.

- Two underground diesel cooling water pump fuel oil storage tanks and two aboveground day tanks (to service two separate diesel-driven cooling water pumps).
- One underground diesel-driven fire pump fuel oil storage tank and one aboveground day tank (to service one diesel-driven fire pump).
- One D5/D6 Fuel Oil Receiving Tank (to service Unit 2 emergency diesel generator storage tanks).
- Four D1/D2 and four D5/D6 fuel oil leakage collection tanks.

The PINGP diesel fuel oil tanks are not subject to periodic draining, cleaning, and internal inspection. The very high turnover rate for the fuel in the day tanks, and the close control of the fuel oil quality in the storage tanks that comprise the sources for the day and leakage collection tanks, make periodic draining and cleaning unnecessary. Tank internal inspections and wall thickness measurements that have been completed to date have shown no degradation. The leakage collection tanks are very small and their interiors are not reasonably accessible. Draining and cleaning of the tanks would be performed only if determined necessary based on negative trends indicated by the results of the fuel oil analyses, results of periodic testing for the presence of water, and plant or industry operating experience.

The PINGP Fuel Oil Chemistry Program has been effective in monitoring and controlling diesel fuel oil chemistry to mitigate aging effects. Fuel oil quality parameters, including water and sediment percentage, are routinely within acceptance limits at the various monitored locations and no adverse trends have been identified. No instances of fuel oil system component failures to perform license renewal intended functions attributed to contamination have been identified.

Results of Diesel Fuel Tank Cleaning and Inspections

The internal visual inspections of storage tank surfaces that have been completed have identified no significant corrosion, pitting, or areas requiring repair due to aging effects; or indications of unacceptable fuel oil chemistry control. The following summarizes the tank cleaning and internal inspection results.

- Unit 1 emergency diesel generator underground diesel fuel oil storage tanks (four tanks) were drained, cleaned and inspected in 1992.
- The diesel-driven cooling water pump and diesel-driven fire pump fuel oil storage tanks (three storage tanks) were drained, cleaned, and inspected in 1995. Ultrasonic measurements on one of the diesel-driven cooling water pump underground fuel oil storage tanks was also performed during the 1995 cleaning and inspection. Inspection results were determined to be acceptable. Wall thickness measurements were close to nominal thickness of the tank based on a comparison to original fabrication drawings, and wall thickness measurements at

tank mid and bottom locations were comparable, showing no signs of corrosion. The System Engineer who performed the internal visual inspections indicated the tank material condition was good and did not recall any signs of galvanic, general corrosion or pitting.

- In 2004, two diesel fuel oil storage tanks (the 21 D5/D6 Fuel Oil Receiving Tank and the 121 Heating Boiler Fuel Oil Storage Tank) were drained, cleaned and visually inspected by the System Engineer. New diesel fuel oil which did not meet specification had been received into these tanks, and had to be replaced. After draining and cleaning these tanks, the System Engineer performed internal visual inspections and did not identify any significant corrosion or pitting.

Fuel Tanks to be Subjected to UT of the Tank Bottom

In order to confirm the continued effectiveness of oil quality control, one-time inspections using ultrasonic thickness measurements will be performed at selected tank bottom and piping locations prior to the period of extended operation as part of the One-Time Inspection Program.

Specific locations to be selected include:

- An external UT on select bottom locations on one of the vaulted fuel oil storage tanks for the Unit 2 emergency diesel generators.
- An internal tank cleaning, visual inspection, and internal UT on select bottom locations on one of the Unit 1 emergency diesel generator underground storage tanks.
- An internal tank cleaning, visual inspection, and internal UT on select bottom locations of the diesel-driven cooling water pump fuel oil storage tank previously tested in 1995. Comparable areas of the tank will be inspected to provide a basis for trend evaluation.
- External UT on select piping locations typically considered low flow/stagnant areas.

The storage tank areas selected for one-time inspection are those considered susceptible to potential low flow or stagnant conditions. Selecting the same tank as previously tested in 1995 provides a basis for trend comparison. Consistent with the requirements of the One-Time Inspection Program, should evidence of corrosion be identified, the condition would be entered into the Corrective Action Program and evaluated to determine necessary corrective actions, including the need for additional tank inspections.

Extent of UT of Tank Bottoms (grid size)

Specific examination plans for tank UT examinations will be developed during implementation. The UT inspection of tank bottoms will include sufficient measurements, based upon tank geometry, to adequately investigate the tank bottom for loss of material. The UT grid size will be specified by approved procedures.

Ultrasonic inspection of tank bottoms will be conducted by qualified personnel in accordance with approved procedures subject to the requirements of the Quality Assurance Program.

Fuel Tanks Not Subject to Periodic Cleaning and Visual Inspection or UT

As stated previously, the PINGP diesel fuel oil tanks (i.e.; day tanks, storage tanks, leakage collection tanks) are not subject to periodic draining, cleaning, and internal inspection. Draining and cleaning of the tanks would be performed only if determined necessary based on negative trends indicated by the results of the fuel oil analyses, results of periodic testing for the presence of water, and plant or industry operating experience.

As discussed above, three tanks will be selected for cleaning and visual inspection and/or UT. These inspections will be performed as part of the One-Time Inspection Program prior to the period of extended operation.

Justification for not Verifying That Loss of Material is Occurring in Fuel Tanks That are not Subjected to Cleaning and Visual Inspection or UT

Based on the effectiveness of existing fuel oil chemistry controls, no evidence of water accumulation in fuel oil storage tank bottoms, the lack of adverse trends, acceptable ultrasonic test results, and the lack of evidence of leakage or significant corrosion or pitting, the above actions are deemed sufficient to confirm that internal corrosion is not occurring. As discussed above, three tanks will be selected for cleaning and visual inspection and/or UT as part of the One-Time Inspection Program. Any aging effects detected in these tanks will be representative of the remaining tanks in the Fuel Oil Chemistry Program since all tanks addressed by this program are fabricated of the same material and subjected to the same environment (i.e., carbon steel in fuel oil). Consistent with the requirements of the One-Time Inspection Program, should evidence of corrosion be identified, the condition would be entered into the Corrective Action Program and evaluated to determine necessary corrective actions, including the need for expanded and/or periodic tank inspections.

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

RAI B2.1.27-1

The staff reviewed LRA Appendix B2.1.27, Nickel-Alloy Nozzles and Penetrations Program and noted that there was no operating experience associated with this program. The staff also noted that this program is credited for managing primary water stress corrosion cracking (PWSCC) of three components: pressurizer surge nozzle, core support pads, and instrumentation tube penetrations (bottom head). Please

provide operating experience for these components including inspection methods and results and any mitigative measures taken to manage PWSCC.

NSPM Response to RAI B2.1.27-1

The PINGP Nickel-Alloy Nozzles and Penetrations Program manages cracking due to primary water stress corrosion cracking (PWSCC) on nickel-alloy pressure boundary and structural components. The scope of the program includes a) Instrumentation Tube Penetrations (Bottom Head), b) Core Support Pads, and c) Unit 2 pressurizer surge nozzle-to-safe end weld. Based upon a review of previous plant operating experience, PINGP has not experienced cracking of the components contained in the PINGP Nickel-Alloy Nozzles and Penetrations Program. The following is a summary of PINGP operating experience related to the inspection of these nickel-alloy components.

a) Unit 1 and Unit 2 Reactor Vessel Instrumentation Tube Penetrations (Bottom Head)

In response to NRC Bulletin 2003-02, PINGP has committed to perform a 100% coverage bare metal visual inspection of the lower reactor pressure vessel (RPV) dome, up to and including each bottom mounted instrumentation tube penetration to RPV junction, every other refueling outage. RPV bottom head bare metal visual examinations are performed by removing insulation sections and/or examining under the insulation using remote viewing equipment that provides a high degree of resolution in order to identify very small volumes of boric acid that may result from primary water stress corrosion cracking (PWSCC). Although this is not an examination required by the ASME B&PV Code, fully qualified and certified VT-2 examiners perform the inspections. Bare metal visual examinations of the Instrumentation Tube Penetrations (Bottom Head) were conducted in May 2006 for Unit 1 and April 2005 for Unit 2. Minor indications were identified and determined not to be characteristic of reactor coolant leakage from the tube/vessel interface. No apparent defects have been detected as a result of these examinations.

b) Unit 1 and Unit 2 Reactor Vessel Radial Core Support Pads

The vessel attachment welds for the core support pads are subject to periodic visual examination once per inservice inspection interval. The ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program conducts a visual VT-3 examination of the accessible welds of the reactor vessel core support pads in accordance with Table IWB-2500-1, Examination Category B-N-2, Item B13.60. There is no history of service induced degradation at these locations. The Unit 1 and Unit 2 core support pad welds were last examined in October 2004 and May 2005, respectively. No apparent defects were detected at these locations at that time.

c) Unit 2 Pressurizer Surge Nozzle-to-Safe End Weld

To mitigate the effects of PWSCC on the Unit 2 pressurizer surge nozzle-to-safe end dissimilar metal weld, a full structural weld overlay (FSWOL) on the pressurizer surge nozzle-to-safe end dissimilar metal and safe end-to-reducer stainless steel butt welds

was recently installed during the PINGP Unit 2 refueling outage (2R25). In a letter dated January 15, 2008 [ML081510906], NSPM proposed alternative requirements to ASME Section XI to provide for the installation and examination of the FSWOL in Alternative Request No. 2-RR-4-8, Revision 1. The NRC staff authorized the use of Alternative Request 2-RR-4-8, Revision 1, in a letter dated June 15, 2008 [ML081360646].

The PINGP Unit 2 pressurizer surge nozzle-to-safe end weld was ultrasonically examined (UT) in November 2006 per ASME Section XI, Appendix VIII, Supplement 10. The examination met the ASME Section XI and EPRI MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines" requirements for examination coverage. No PWSCC indications were detected.

Ultrasonic examinations of the Unit 2 surge nozzle-to-safe end dissimilar metal weld were conducted in September 2008, prior to installation of the full structural weld overlay (FSWOL). The examinations were performed in accordance with ASME Section XI, Appendix VIII, Supplement 10. No recordable indications were identified.

In October 2008, following installation of the FSWOL, ultrasonic examinations were performed of the new overlay weld and the nozzle-to-safe end dissimilar metal weld. 100 percent of the Code required volume was achieved during the examinations. The UT examinations resulted in no recordable indications.

Enclosure 2, Table 2 of Alternative Request 2-RR-4-8, Revision 1, requires inservice examinations to be conducted ultrasonically with the examination volume defined in ASME Section XI, Nonmandatory Appendix Q, Figure Q-4300-1. Inservice examinations as described in Q-4300 will be performed in accordance with the requirements of MRP-139, with the additional requirement of at least one ultrasonic examination within ten years of the FSWOL application. Additionally, by letter dated May 7, 2008 [ML081280890], NSPM agreed that if indications were found in the pre-application ultrasonic examination, the first inservice examination will be performed during the first or second outage following FSWOL application. The MRP-139 guidance for ISI goes beyond current ASME Code inspection requirements for PINGP Unit 2. In their June 15, 2008 letter, the NRC found that the inservice examination requirements in the May 7, 2008 letter, and Enclosure 2, Table 2 of Alternative Request 2-RR-4-8, Revision 1, were consistent with, or more conservative than, the ASME Code, Section XI, Appendix Q.

A review of operating experience for the PINGP Nickel-Alloy Nozzles and Penetrations Program identified no adverse trends or issues with program performance. The PINGP Nickel-Alloy Nozzles and Penetrations Program effectively monitors the condition of components within the license renewal boundary and ensures aging effects are acceptably managed.