

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION III

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March 27, 2009

Mr. Michael D. Wadley Site Vice President Prairie Island Nuclear Generating Plant Northern States Power Company, Minnesota 1717 Wakonade Drive East Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 NRC LICENSE RENEWAL SCOPING, SCREENING, AND AGING MANAGEMENT INSPECTION REPORT 05000282/2009006; 05000306/2009006

Dear Mr. Wadley:

On February 18, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed a License Renewal inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on February 18, 2009, with you and members of your staff in an exit meeting open for public observation at the Prairie Island Nuclear Generating Plant Training Center.

The purpose of this inspection was to examine activities that support the application for renewed licenses for Prairie Island Units 1 and 2. The inspection addressed the processes of scoping and screening plant equipment to select equipment subject to an aging management review, and development and implementation of aging management programs to support a period of extended operation. As part of the inspection, the NRC examined procedures and representative records, interviewed personnel, and visually examined accessible portions of various systems, structures or components, to verify license renewal boundaries, and to observe any effects of equipment aging. The visual examination of systems, structures, and components also included some areas not normally accessible, including inside containment and manholes.

The inspection concluded that the scoping, screening, and aging management license renewal activities, were generally conducted as described in the License Renewal Application, as supplemented through your responses to requests for additional information from the NRC. The inspection also concluded that documentation supporting the application was generally in an auditable and retrievable form. Existing aging management programs were determined to be functioning adequately and, when all the programs are implemented as described in your License Renewal Application, there is reasonable assurance that the intended functions of vital plant systems, structures, and components will be maintained through the period of extended operation.

M. Wadley

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA by C. E. A. Tilton Acting For/

Ann Marie Stone, Chief Engineering Branch 2 Division of Reactor Safety

Docket Nos. 50-282; 50-306 License Nos. DPR-42; DPR-60

- Enclosure: Inspection Report 05000282/20009006; 05000306/20009006 w/Attachments: Supplemental Information and Exit Meeting Presentation Slides
- cc w/encl: D. Koehl, Chief Nuclear Officer J. Anderson, Regulatory Affairs Manager P. Glass, Assistant General Counsel Nuclear Asset Manager J. Stine, State Liaison Officer, Minnesota Department of Health Tribal Council, Prairie Island Indian Community Administrator, Goodhue County Courthouse Commissioner, Minnesota Department of Commerce Manager, Environmental Protection Division Office of the Attorney General of Minnesota Emergency Preparedness Coordinator, Dakota County Law Enforcement Center

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cc w/encl: D. Koehl, Chief Nuclear Officer

J. Anderson, Regulatory Affairs Manager
P. Glass, Assistant General Counsel
Nuclear Asset Manager
J. Stine, State Liaison Officer, Minnesota Department of Health Tribal Council, Prairie Island Indian Community
Administrator, Goodhue County Courthouse
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County Law Enforcement Center

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Letter to Mr. Michael Wadley from Ms. Ann Marie Stone dated March 27, 2009.

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 NRC LICENSE RENEWAL SCOPING, SCREENING, AND AGING MANAGEMENT INSPECTION REPORT 05000282/2009006; 05000306/2009006

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: License Nos:	50-282; 50-306 DPR-42; DPR-60
Report No:	05000282/2009006; 05000306/2009006
Licensee:	Northern States Power Company, Minnesota
Facility:	Prairie Island Nuclear Generating Plant, Units 1 and 2
Location:	Welch, MN
Dates:	January 6 through February 18, 2009
Inspectors:	 S. Sheldon, Senior Engineering Inspector (Lead) A. Dunlop, Senior Engineering Inspector B. Jose, Senior Engineering Inspector T. Bilik, Engineering Inspector V. Meghani, Engineering Inspector
Observer:	M. Jones, Engineering Inspector
Approved by:	Ann Marie Stone, Chief Engineering Branch 2 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000282/2009006; 05000306/2009006; 01/06/2009 – 02/18/2009; Prairie Island Nuclear Generating Plant, Units 1 and 2; License Renewal Inspection

This inspection of the applicant's license renewal scoping, screening, and aging management processes was performed by five regional office inspectors. The team used NRC Manual Chapter 2516 and NRC Inspection Procedure 71002 as guidance for performing this inspection. No "findings" as defined in NRC Manual Chapter 0612 were identified.

The team concluded that, in general, the applicant performed its license renewal scoping, screening, and aging management review in accordance with the Prairie Island Nuclear Generating Plant License Renewal Application and that no inspection impediments existed to granting the license extension.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

No findings of significance were identified

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

1. INSPECTION SCOPE

This inspection was conducted by NRC Region III inspectors. The inspection was performed in accordance with NRC Manual Chapter 2516 and NRC Inspection Procedure 71002, "License Renewal Inspection," dated February 18, 2005.

This inspection looked at both the applicant's scoping and screening methodology and aging management programs, as described in the license renewal application (LRA), submitted to the NRC on April 11, 2008.

The attachments to this report list the applicant personnel contacted, the documents reviewed, and the acronyms used.

2. VISUAL OBSERVATION OF PLANT EQUIPMENT

During this inspection, the inspectors performed walkdown inspections of portions of many of the plant systems, structures, and components (SSCs). The walkdowns were intended to determine the acceptability of the scoping boundaries, to observe the current condition of the SSCs, and to assess the likelihood that a proposed aging management program would successfully manage any aging effects. Specific comments on the walkdown results are presented in the sections below.

Portions of the following systems were walked down:

- Chemical and Volume Control System;
- Closed Cooling Water Systems associated with Diesel Fire Pump, Diesel Cooling Water Pump, and Heating System;
- Component Cooling Water System;
- Electric Power Distribution System;
- Fire Water System;
- Fuel Oil System;
- Heating System;
- Spent Fuel Pool Cooling; and
- Station and Instrument Air System.

The following structures were walked down:

- Buried Cable Manholes;
- Metal Enclosed Bus Ducts;
- Substation;
- 4.16 kV Switchgear Rooms;
- Auxiliary Building (portions);
- Block Walls (selected walls); and
- D5/D6 Emergency Diesel Generator building (portions).

3. REVIEW OF SCOPING AND SCREENING METHODOLOGY

In order to assess the applicant's scoping and screening methodology, the inspection concentrated on those non-safety-related systems whose failure could prevent safety-related SSCs from accomplishing a safety function, in accordance with 10 CFR 54.4(a)(2). To verify that non-safety-related SSCs were correctly captured within or omitted from the scope of license renewal (LR), the inspectors reviewed LR documents, interviewed personnel, and walked down the selected SSCs.

.1 Chemical and Volume Control System (VC)

The VC System is an auxiliary system that provides for boric acid injection, chemical additions for corrosion control, reactor coolant cleanup and degasification, reactor coolant makeup, reprocessing of water letdown from the Reactor Coolant (RC) System and reactor coolant pump seal water injections. The VC System also provides auxiliary pressurizer spray if normal pressurizer spray is not available. The VC System includes the Boron Recycle and Reactor Make-up sub-systems.

The VC System is within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1). Portions are in scope as non-safety-related affecting safety-related components for structural integrity and/or spatial interaction based on the criteria of 10 CFR 54.4(a)(2). Portions of the VC System support Environmental Qualification, Fire Protection and Station Blackout event requirements based on the criteria of 10 CFR 54.4(a)(3).

The portions of the VC System containing components subject to an aging management review (AMR) extend from the Volume Control Tank to the RC System, including containment isolation valves, pumps, heat exchangers, demineralizers, piping, and valves. The portions of the Boron Recycle sub-system containing components subject to an AMR extend from the batch tank, through the storage tanks to the charging pump supply. The portions of the Reactor Make-up sub-system containing components subject to an AMR extend from the storage tanks, through the deoxygenation system and pumps to the connections with the supported systems and components.

The inspectors reviewed the LR boundary drawings, the application, the scoping and

screening reports and the USAR, and interviewed personnel responsible for the system. The inspectors also performed system walkdowns of accessible portions of the VC System. The inspectors concluded that the applicant had performed scoping and screening for the VC System in accordance with the methodology described in the LRA and the rule.

.2 Component Cooling (CC) System

The Component Cooling (CC) system is an auxiliary system that is designed to provide heat removal from safeguards equipment associated with heat removal from the RC system during and following design basis events, and provide heat removal from safeguards and non-safeguards equipment during normal conditions. The CC System for each unit consists of two heat exchangers, two pumps, surge tank and necessary piping, valves and instrumentation designed to provide two interconnected cooling loops.

The CC system is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1). Portions are in scope as non-safety-related affecting safety-related components for structural integrity and/or spatial interaction based on the criteria of 10 CFR 54.4(a)(2). Portions of the CC system support Fire Protection and Station Blackout event requirements based on the criteria of 10 CFR 54.4(a)(3). The majority of the CC system was considered in-scope of LR. The only portion out-of-scope was the valves and associated piping to the 123 nitrogen compressor, although the in-scope portion of the boundary between these sections contained the required anchors.

The inspectors reviewed the LR boundary drawings, the application, the scoping and screening reports and the USAR, and interviewed personnel responsible for the system. The inspectors also performed system walkdowns of accessible portions of the component cooling system, including the boundary with the portion of the system not in-scope. The inspectors identified that there were several continuation points on the LR boundary drawings that contained incorrect information, however, these had previous been identified and addressed in the response to the Request For Additional Information, dated December 18, 2008. In addition, valve CC-39-2 was shown on drawing LR-39246-02 as not being in-scope; however, this valve was included in-scope as identified in LR-SSR-111, "Component Cooling System," Attachment 3. The applicant determined the location of the valve on the drawing was incorrect. Based on this clarification, the inspectors concluded that the applicant had performed scoping and screening for the component cooling system in accordance with the methodology described in the LRA and the rule.

.3 Fuel Oil System

The purpose of the fuel oil system is to provide storage of an adequate volume of fuel oil for the emergency diesel generators to support accident conditions; the diesel driven fire pumps to support an Appendix R safe shutdown; the diesel driven cooling water pump to supply essential service water during loss of offsite power and the auxiliary boiler for heating various areas of the plant and to supply steam for startup from a dual unit outage. The system provides sufficient fuel capacity to allow one emergency diesel generator to operate continuously for seven days. Fuel oil system piping runs from the fuel oil storage tanks in either unit to the emergency diesel generators, the diesel fire pumps, the diesel driven cooling water pump and the auxiliary boiler. However, some portions of the system were excluded because they did not perform a safety-related

function, were not required for a regulated event and did not potentially impact the safety function of another system.

The inspectors reviewed the LR boundary drawings, the application, and the USAR, and interviewed personnel responsible for the system. The inspectors also performed a walkdown of the emergency diesel generator day tanks, the enclosures for the fuel oil storage tanks, fuel oil transfer pumps, and piping in the turbine building and intake structure, including the structural supports credited for connected piping not within scope of license renewal. The inspectors concluded that the applicant had performed scoping and screening for the fuel oil system in accordance with the methodology described in the LRA and the rule.

.4 <u>Electrical Power Distribution System</u>

The electrical power distribution system consists of the transformers, switchgears, and other electrical components necessary to transform 345 kV power to various voltage levels used by the internal plant equipment. The Station Blackout (SBO) recovery requires the licensee to include in license renewal scope components in the 345 kV switchyard that are in the SBO recovery path. The 345 kV switchyard system has no safety-related function, but has components in-scope of LR per 10 CFR 54.4(a)(3) requirements for SBO and Appendix R.

The inspectors reviewed the SBO electrical boundary drawings, the application, and the applicable USAR sections and interviewed personnel responsible for the electrical power distribution system and the LR program. The inspectors also performed a walkdown of the switchyard with the system engineer and the lead electrical LR project engineer to verify proper scoping of SBO recovery components. The inspectors also reviewed the draft LR Interim Staff Guidance LR-ISG-2008-01, "Staff Guidance Regarding the SBO rule associated with LR application and the SBO supplemental information L-PI-08-043 submitted by the applicant on May 16, 2008, to verify that the applicant complied with the interim staff guidance."

The inspectors concluded that the applicant had performed scoping and screening for the electrical power distribution components for SBO recovery in accordance with the methodology described in the LRA and the rule.

.5 Spent Fuel Pool Cooling System

The Spent Fuel Pool Cooling (SF) System is an auxiliary system designed to remove the heat generated by stored spent fuel assemblies. The system provides purification of the spent fuel pool, the Radwaste Storage Tank, and the reactor cavity to reduce radiation levels and improve clarity. The SF system includes the Spent Fuel Pool Leakage and Refueling Pool Cleanup sub-systems. The SF system is shared by the two Units, and consists of pumps, heat exchangers, filters, demineralizers, refueling water purification pumps, the piping, valves, and instrumentation.

The SF system is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1). Portions of the system are in scope based on non-safety-related affecting safety-related criteria under the requirements of 10 CFR 54.4(a)(2). The in-scope portion of the SF system start at the spent fuel pool suction pipe and extend to the discharge pipe, and include the pumps, heat exchangers, filters, demineralizers, piping, valves, and include

the transfer tube. The spent fuel pool skimmer float with the attached underwater hose is excluded from the scope as it lies on the pool surface and does not interact with safety-related components per 10 CFR 54.4(a)(2). For the non-safety-related reactor fuel pool clean up sub-system, which is in use only during the refueling outages, only the component supports were included in the scope in accordance with the scoping criteria for Non-Safety-Related SSC Containing Air/Gas in the LRA, Section 2.1.2.4.2.

The inspectors reviewed the LR boundary drawings, the application, the scoping/screening reports and the USAR. The inspectors also interviewed personnel responsible for the system, and performed a field walkdown of the accessible portions of the SF system. The inspectors concluded that the applicant had performed scoping and screening for the spent fuel pool cooling system in accordance with the methodology described in the LRA and the rule.

.6 Station and Instrument Air (SA) System

The Station and Instrument Air (SA) System is an auxiliary system that is designed to provide a continuous supply of oil-free, dry, instrument air as required. The SA System includes the Backup Accumulators and Compressed Air sub-systems that provide backup air for the Reactor Coolant System power-operated relief valves (PORVs), the turbine driven auxiliary feedwater pump steam admission control valves, the Cooling Water System strainer backwash valves and Safeguards Chilled Water sub-system components.

The SA System is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1). Portions of the SA System support Environmental Qualification, Fire Protection and Station Blackout event requirements based on the criteria of 10 CFR 54.4(a)(3). The in-scope portion of the SA System starts at the compressors and includes the interconnected pipe and valves to provide a pressure boundary for the system to support continued operation of components that require air to continue operation. Also included are the accumulators and compressed air supply sub-systems that support safety-related equipment.

The inspectors reviewed the LR boundary drawings, the application, the scoping and screening reports and the USAR, and interviewed personnel responsible for the system. The inspectors also performed system walkdowns of accessible portions of the station and instrument air systems. The inspectors concluded that the applicant had performed scoping and screening for the station and instrument air system in accordance with the methodology described in the LRA and the rule.

4. REVIEW OF AGING MANAGEMENT PROGRAMS

The inspection assessed the adequacy of current implementation of existing aging management programs (AMPs) credited in the applicant's LRA. This included verification that current AMPs would ensure that aging effects would be managed so that there was reasonable assurance that an SSC's intended function would be maintained throughout the period of extended operation. For those programs indicated by the applicant as being consistent with NUREG 1801, "Generic Aging Lessons Learned (GALL) Report," the inspectors confirmed that the applicant's program included the GALL attributes. For those programs which the applicant indicated were new or being enhanced, the inspectors confirmed that commitments existed and were sufficient to

support future implementation. For those programs where the applicant indicated that they intended to take exception to the GALL, the inspectors reviewed the exceptions against the GALL recommendations and evaluated the acceptability of the applicant's proposal.

The inspection also consisted of walkdowns of selected in-scope SSCs to assess how plant equipment was being maintained under the current operating license and to visually observe examples of non-safety-related equipment determined to be in scope due to their proximity to safety-related equipment and their potential for failure due to aging effects.

.1 ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD (B2.1.3)

The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (the ASME Code) Section XI, Inservice Inspection (ISI), subsections IWB, IWC, and IWD program is an existing program that is generally consistent with NUREG 1801, Section XI.M.1, "ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD." The Prairie Island Nuclear Generating Plant (PINGP) Units 1 and 2 ISI Program Plan for the forth 10-year inspection interval effective from December 21, 2004 through December 20, 2014, approved per 10 CFR 50.55a, is based on the 1998 ASME Section XI B&PV Code, with 2000 Addenda. The program provides for condition monitoring of Class 1, 2, and 3 pressure-retaining components, their welded integral attachments, and bolting. The program monitors for aging effects by performing volumetric, surface, and visual examinations of the components. Visual examinations are also periodically performed to detect leakage from the pressure-retaining components. Inspections can reveal degradation such as cracking, loss of material due to corrosion and wear, reduction of fracture toughness, and leakage. The NRC approved the use of risk informed inservice inspection (RI-ISI) in a safety evaluation documented in a NRC letter dated January 5, 2006. Class 1 dissimilar metal welds in nozzles and Class 1 and 2 welds in piping are inspected in accordance with the RI-ISI Program as described in the Electrical Power Research Institute (EPRI) Topical Report TR-112657, Revision B-A, "Revised Risk Informed Inservice Inspection Evaluation Procedure."

The inspectors reviewed the applicable aging management program basis document, applicable procedures; the latest ISI program plan approved by the Office of Nuclear Reactor Regulation, the latest ISI baseline inspection report, and conducted a general review of the ISI Program with the responsible applicant personnel. The inspectors also searched the applicant's corrective action program records for degraded Code components to determine plant specific aging effects and to assess the program's effectiveness at detecting and monitoring for age related degradation. Based upon these reviews, the inspectors did not identify any issues adversely affecting the applicant's AMP. Additionally, the inspectors did not identify any additional exceptions from the Section X1.M.1 Program. Therefore, the inspectors concluded that the applicant's AMP should continue to assure the ASME Code pressure boundary function consistent with the current licensing basis for the period of extended operation.

.2 ASME Section XI Inservice Inspection, Subsection IWE (B2.1.4)

The ASME Section XI, Subsection IWE aging management program is an existing program, which provides for condition monitoring of Class MC pressure-retaining components and their related items, including integral attachments, seals, gaskets, moisture barriers, and pressure-retaining bolting. Class MC components at PINGP include the containment vessel, personnel airlocks, equipment hatches, mechanical penetrations, and electrical penetrations. The containment vessel is a cylindrical steel pressure vessel with a hemispherical dome head and an ellipsoidal bottom. The program is implemented in accordance with the requirements 10 CFR 50.55a and ASME Section XI, Subsection IWE, 1992 Edition including the 1992 Addenda, for the current inspection interval. The IWE Program monitors for aging effects by performing visual examinations of the Class MC components and their related items. Visual or volumetric examinations, as applicable, are performed on components that require them. Leak testing is also periodically performed to detect leakage from the pressure-retaining Class MC components. This program credits the implementation of the 10 CFR Part 50, Appendix J Program to detect leakage from pressure-retaining Class MC components. The Appendix J Program is a separate aging management program, the requirements of which are independent from ASME Section XI, Subsection IWE.

The inspectors reviewed applicable procedures; the latest ISI program plan approved by the Office of Nuclear Regulatory Regulation, performed a walkdown of the U-1 containment liner, other pressure-retaining components and their related items, and interviewed the ISI program manager.

The inspectors concluded that the ISI program was in place, had been implemented, was an on-going program subject to NRC review, and included the elements identified in the LRA. As it is a currently required program subject to periodic review and inspection, there is reasonable assurance that adequate inspections required by ASME will be performed through the period of extended operation.

.3 ASME Section XI Inservice Inspection, Subsection IWF (B2.1.5)

The ASME Section XI, Subsection IWF aging management program is an existing program, which provides for condition monitoring via periodic visual examination of ASME Section XI Class 1, 2, and 3 component and piping supports within the scope of license renewal for loss of material and loss of mechanical function aging effects. The parameters which are monitored include corrosion, deformation, misalignment, improper clearances, improper spring settings, damage to close tolerance machined or sliding surface and missing, detached, or loosened support items. The visual examination would be expected to identify relatively large cracks.

The current applicant ISI program is implemented through procedures, which provide for visual examination in accordance with the requirements of ASME Section XI, Subsection IWF 1998 Edition, including 1998, 1999 and 2000 Addenda, for the current inspection interval, as approved by 10 CFR 50.55(a). The inspectors reviewed procedures, interviewed the ISI program manager, and concluded that the ASME Section XI, Subsection IWF aging management was in place, had been implemented, and included the elements identified in the LRA. The inspectors further concluded that the applicant will ensure the aging affects will be appropriately assessed and managed and that there is reasonable assurance that the intended function of the SSCs will be maintained through the period of extended operation.

.4 Buried Piping and Tanks Inspection Program (B2.1.8)

The Buried Piping and Tanks Inspection Program is a new program, intended to be consistent with NUREG-1801, Section XI.M34, "Buried Piping and Tanks Inspection." The program manages the aging effects on the external surfaces of carbon steel and cast iron components that are buried in sand or soil. As a preventive measure, buried pipe and tanks are coated or wrapped to prevent or mitigate corrosion. The program consists of opportunistic or focused visual inspections of the component external surfaces. Buried components subject to selective leaching are managed by the Selective Leaching of Materials Program.

The inspectors reviewed program documentation, aging management review documents, applicable drawings specifying the coatings, procedures, and corrective action documents, and interviewed personnel responsible for the program. The inspectors reviewed the ground water chemistry records indicating a non-aggressive environment. The applicant's reviews of plant specific experience did not identify cases of leakage due to external corrosion damage of buried piping. Portions of cooling water and fire protection piping were replaced in 1992 due to Microbiologically Influenced Corrosion (MIC) indications on the internal surfaces; however, there was no record of any external corrosion damage on those pipes. The inspector's independent search of corrective actions did not identify any other issues related to external corrosion damage on buried components.

The inspectors concluded that the Buried Piping and Tanks Inspection Program, when implemented as described in the application, will adequately manage aging effects during the period of extended operation.

.5 <u>Closed-Cycle Cooling Water System (B2.1.9)</u>

The Closed-Cycle Cooling Water (CCCW) System Program is an existing program, which will generally be comparable to NUREG-1801, Section XI.M21, "Closed-Cycle Cooling Water System." However, the applicant identified some exceptions to the GALL Program and the need to enhance the existing program to align with the GALL Program. The CCCW system surveillance program manages aging effects in closed cycle cooling water systems that are not subject to significant sources of contamination, in which water chemistry is controlled and heat is not directly rejected to the ultimate heat sink. The program includes: (1) preventive measures to minimize corrosion, heat transfer degradation, and stress corrosion cracking; and (2) periodic system and component performance testing and inspection to monitor the effects of corrosion and confirm intended functions are met.

The inspectors reviewed LR program basis documentation, aging management review documents, historical chemistry parameter trends, corrective action documents, and existing procedures and surveillances. The inspectors also interviewed the CCCW program owner, interviewed the component cooling water system engineer, and conducted walkdowns to assess the condition of CCCW systems within the plant. The inspectors verified that the applicant performed adequate historic reviews of plant specific experience to determine aging effects specified in the LRA are consistent with current industry practice.

The applicant is taking two exceptions to the GALL with respect to the CCCW system program. The first exception is the use of Electric Power Research Institute (EPRI) TR-107396, "Closed Cooling Water Chemistry Guideline," Revision 1, in lieu of Revision 0 of the document. This applicant states this revision provides more prescriptive guidance based on the latest industry operating experience. The inspectors noted that not all of the chemistry action levels and sampling frequencies established in current procedures were in accordance with the EPRI guidance document. Based on this issue, the applicant agreed to conduct a review of all CCCW chemistry procedures to ensure they meet the EPRI guidance. The applicant entered this issue into their tracking program as AR 01167284-03.

The second exception is that some of the pump and heat exchanger performance parameters recommended by NUREG-1801 are not used for monitoring specific pumps or heat exchangers due to system design and/or lack of instrumentation. For these systems, the applicant is relying on chemistry controls and established performance monitoring techniques to detect changes in system performance due to corrosion or cracking. During the review of the LR program basis document (Section 5.3) and the application (B2.1.9), this exception was associated with Element 3, "Parameters Monitored/Inspected." The inspectors noted that Element 4, "Detection of Aging," discusses that performance and functional testing is also used to ensure acceptable functioning of the CCCW system or components. However, the applicant stated that Section 5.4 is consistent with the GALL. Based on this information, the applicant should also have taken the same exception in Section 5.4 as was taken in Section 5.3. The applicant agreed with the need to revise the application and program document to identify this exception. The applicant entered this issue into their tracking program as AR 01167147-01.

When the inspector requested historic chemistry results, the applicant determined that a number of samples for the CCCW system had not been taken for several years due to shortages of chemistry technicians. Although this had been identified in the past and placed in the applicant's corrective action program, it had not been corrected. Based on this issue, the applicant initiated AR 01165438 to determine the extent of condition and implement corrective actions. By the end of the inspection, the applicant informed the inspectors that all sampling that was previously suspended has been resumed. However, samples that were potentially radioactive and require shipping to an offsite source for analysis were being stored onsite, as the applicant had suspended radioactive shipments offsite due to a recent transportation event. Subsequent to the onsite inspection, the hold on radioactive shipments was lifted.

The application states that this program will be enhanced to perform internal visual examination of accessible surfaces of components serviced by closed-cycle cooling water when the systems or components are opened during scheduled maintenance or surveillance activities. Although several periodic inspection procedures were being developed (component cooling water pump internal inspections), this enhancement had not yet been implemented.

The inspectors concluded that the enhanced CCCW system program should effectively manage the applicable aging effects. Continued implementation of the CCCW system program will provide reasonable assurance that the aging effects will be managed so that the CCCW system components will continue to perform their intended function consistent with the current licensing basis for the period of extended operation.

.6 Compressed Air Monitoring Program (B2.1.10)

The Compressed Air Monitoring Program is an existing program that will be enhanced, to be consistent, with exceptions, with NUREG-1801, Chapter XI, Program XI.M24, "Compressed Air Monitoring." The Compressed Air Monitoring Program manages the effects of corrosion and the presence of unacceptable levels of contaminants for the Station and Instrument Air System. The program includes periodic air sampling, inspections, component functional testing, leakage testing. Additionally preventative maintenance is performed at regular intervals, to assure system components operate reliably, thereby assuring that quality air is supplied to plant equipment.

The inspectors reviewed the applicable program basis documentation, interviewed the responsible systems engineer, conducted a system walk down, reviewed corrective action documentation related to Station and Instrument Air Systems, reviewed applicable procedures, reviewed commitments and implementing documents, and confirmed that the applicant had the necessary commitments in place to enhance the program prior to the start of the period of extended operation. The inspectors searched the applicant's corrective action database for relevant condition reports.

The inspectors identified one concern, in that the current program did not include frequent monitoring of dew point indication. The applicant agreed to enhance the program to include on-line dew-point monitoring and entered this issue into the tracking system in AR 01167147.

The inspectors concluded that the Compressed Air Monitoring Program will effectively manage aging effects. With the enhancements to be incorporated prior to the period of extended operation, continued implementation of the Compressed Air Monitoring Program will provide reasonable assurance that the aging affects will be managed so that the compressed air systems will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

.7 <u>Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification</u> <u>Requirements (B2.1.11)</u>

The Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program is a new program that the applicant will implement prior to the period of extended operation. It 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/enclosure from external sources are in scope of this program. Cable/wiring connections terminating within an active or passive device/enclosure from internal sources are not in scope of this program. Thermography, resistance testing or other proven test will be used to detect loose connections due to thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation.

This program will be consistent with the program described in NUREG-1801, Section XI.E6, "Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures, and confirmed that the applicant had a commitment in place to implement the program prior to the start of the period of extended operation. The inspectors also interviewed the program owner to determine how and when the testing requirements will be implemented and also, how the switchyard components within the scope of license renewal will be monitored for aging. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors had a concern regarding the aging management of the switchyard components as these components were maintained and monitored by the transmission system operator and not the plant personnel. Also, the aging management program documents did not clearly identify how the plant will ensure the aging management of switchyard components within LR scope. In response to this concern, the applicant initiated a long term commitment to develop and implement an agreement between the applicant and its transmission system operator to manage the aging effects of in-scope switchyard components with administrative controls from the applicant.

The inspectors concluded that, implementation of the Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program will provide reasonable assurance that aging effects will be managed such that electrical cable connections within the scope of this program will continue to perform their intended functions during the period of extended operation.

.8 <u>Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental</u> <u>Qualification Requirements (B.1.12)</u>

The Non-Environmentally Qualified (Non-EQ) Insulated Cables and Connections Program is a new program that the applicant will implement prior to the period of extended operation. This program will be consistent with the program described in NUREG-1801, Section XI.E1, "Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." The Non-EQ insulated cables and connections program will apply to accessible insulated cables and connections installed in structures within the scope of license renewal and prone to adverse localized environments.

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures, and confirmed that the applicant had a commitment in place to implement the program prior to the start of the period of extended operation. The inspectors also interviewed the Non-EQ insulated cables and connections program owner to determine how and when the testing and monitoring requirements for this aging management program will be developed and implemented. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors concluded that the Non-EQ Insulated Cables and Connections Program, if implemented as described, will effectively manage aging effects, since it will incorporate proven monitoring techniques, acceptance criteria, corrective actions, and administrative controls. Implementation of this program will provide reasonable assurance that the effects of aging will be managed such that components within the scope of the program will perform their intended functions consistent with the current licensing basis for the period of extended operation.

.9 External Surfaces Monitoring Program (B2.1.14)

The External Surfaces Monitoring Program is an existing program which, with the proposed enhancements, will be comparable to NUREG-1801, Section XI.M36, "External Surfaces Monitoring." The program manages aging effects by performing visual inspections of external surfaces for evidence of degradation such as corrosion, cracking or leakage. This program is implemented largely through system engineer walkdown checklists.

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures. The inspectors interviewed the program owner and discussed the requirements with system engineers during walkdowns.

The inspectors identified that the walkdown checklists lacked specific acceptance criteria for the engineers to use in identify aging effects. In response, the applicant agreed to enhance the program to include specific acceptance criteria. The inspectors also identified that the walkdown checklists did not include all applicable aging effects. In response, the applicant agreed to revise the procedures to include other applicable aging effects. The walkdown checklists did not have retention requirements which would document that the inspections had been completed, so the applicant agreed to strengthen retention requirements on the walkdown checklists to allow for subsequent retrieval and audit.

The inspectors concluded that, with the enhancements to be incorporated prior to the period of extended operation, continued implementation of the External Surfaces Monitoring Program will provide reasonable assurance that the aging affects will be managed so that applicable systems will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

.10 Fire Water System (B2.1.16)

The Fire Water System Program is an existing program which, with the proposed enhancements, will be comparable to NUREG-1801, Section XI.M27, "Fire Water System." The fire water system program is a condition monitoring program that conducts inspections and performance tests of the water-based fire protection systems that are in accordance with the National Fire Protection Association (NFPA) codes and standards. These activities include sprinkler system inspections, pipe wall thickness testing, hydrant inspections, fire main flushes, and flow tests. The components include sprinklers, nozzles, fittings, valves, hydrants (including hose and gaskets), hose stations, standpipes, and above-ground and underground piping and components.

The inspectors reviewed fire water system aging management program related documentation, condition reports, existing procedures, required enhancements, and implementing documents. Program enhancements are to add fire hydrants by the cooling towers to the program scope and a commitment to either replace or test sprinkler heads that have been in place for 50 years using the guidance of NFPA 25.

The inspectors also conducted plant visual inspections to assess the condition of fire water system equipment, including the diesel fire pump and associated equipment in the intake structure and several yard hydrants. The fire water system engineer was interviewed to confirm the continuation of the existing program along with the implementation schedule of the required program enhancements. In addition, the inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects specified in the LRA are consistent with current industry practice.

The inspectors concluded that the Fire Water System Program, in general, effectively manages aging effects. With the enhancements to be incorporated prior to the period of extended operation, continued implementation of the fire water system program will provide reasonable assurance that the aging effects will be managed so that the fire water system components will continue to perform their intended function consistent with the current licensing basis for the period of extended operation.

.11 Flow-Accelerated Corrosion Program (B2.1.17)

The Flow-Accelerated Corrosion (FAC) Program is an existing program based on the EPRI guidelines in NSAC-202L-R3 for carbon steel and bronze components containing high-energy. The FAC program is credited in the LRA as an aging management program, which assures component structural integrity by using procedures, administrative controls, and qualified personnel to predict, detect, and monitor wall thinning on the internal surfaces of all susceptible piping, and other components such as fittings, elbows, reducers, expanders, tees, nozzles, heat exchanger components, and valve bodies in various systems. The program is also credited with replacing affected piping prior to failure. In many cases, FAC resistant materials are used for replacements.

The program uses the CHECWORKS Program to predict component wall thinning and NSAC-202L-R3 to satisfy criteria specified in 10 CFR Part 50, Appendix B, for development of procedures and control of special processes. Susceptible piping and components that are unsuitable for CHECWORKS modeling are qualitatively evaluated, prioritized, and ranked on susceptibility and consequence of failure.

The inspectors reviewed station procedures, performed a walkdown of some of the systems, and interviewed the FAC coordinator. The inspectors concluded that the FAC Program was in place, had been implemented, and included the systems and components identified in the LRA, and should manage aging effects as defined in the LRA. Adequate guidance had been provided to reasonably ensure that aging effects will be appropriately managed.

.12 Fuel Oil Chemistry Program (B2.1.19)

The Fuel Oil Chemistry Program is an existing program that, with enhancements, will be consistent, with exceptions, with NUREG 1801, Chapter XI, Program XI.M30, Fuel Oil Chemistry. The Fuel Oil Chemistry Program manages the loss of material and cracking aging effects on internal surfaces of the diesel fuel oil system piping, piping components, and tanks by minimizing the potential for a corrosive environment and verifying that actions taken to mitigate corrosion are effective. The program includes fuel oil chemistry

control, sampling, and receipt inspection activities that are performed in accordance with plant Technical Specifications requirements; ASTM Standards; vendor and plant requirements for fuel oil chemistry; and piping and piping component and tank requirements. The program also includes periodic and one time inspection activities to verify the absence of unacceptable aging affects and the continued effectiveness of fuel oil chemistry control activities.

The inspectors reviewed license renewal program basis documents, aging management review documents, existing procedures and surveillances, and corrective action program documents. The inspectors searched the applicant's corrective action database for relevant condition reports. The inspectors also interviewed the responsible program owner and conducted walk downs of the emergency diesel generator, day tanks, and associated piping and components.

The inspectors concluded that the Fuel Oil Chemistry Program effectively manages aging effects. With the enhancements to be incorporated prior to the period of extended operation, continued implementation of the of the fuel oil chemistry program will provide reasonable assurance that the aging effects will be managed so that the fuel oil system will continue to perform its intended function, consistent with the current licensing basis, for the period of extended operation.

.13 Fuse Holders Program (B2.1.20)

The Fuse Holders Program is a new program that uses as its bases, various industry and NRC standards to implement periodic inspections and tests on fuse holders in scope of License Renewal. It is intended to be consistent with the recommendations of NUREG-1801, Chapter XI, Program XI.E5, Fuse Holders.

The fuse holders in scope of LR requiring aging management are located in passive assemblies/enclosures, such as panels, fuse boxes, junction boxes, and terminal boxes, and contain metallic clamps (clips) that may be prone to the following aging stressors if subjected to specific environments and operating conditions: fatigue, mechanical stress, vibration, chemical contamination, and corrosion. Each of these stressors could lead to either loose connections or corrosion on the connection surfaces that could induce a hot spot leading to circuit failure. Fuse holders within the scope of license renewal requiring aging management will be visually inspected and tested at least once every 10 years. Visual examinations, although not specifically recommended by NUREG-1801, Program XI.E5, provide an additional measure in determining whether the onset of rust or corrosion to the fuse clips or interior of the enclosure require immediate corrective action. The first visual inspections and tests will be completed before the period of extended operation. The specific type of test performed will be determined prior to the initial test, and is to be a proven test for detecting deterioration of metallic clamps of the fuse holders, such as thermography, contact resistance testing, or other appropriate testing.

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures, and confirmed that the applicant had a commitment in place to implement the program prior to the start of the period of extended operation. The inspectors also interviewed the program owner and reviewed thermography reports of fuse panels to determine the general condition of the fuse holders in the plant. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors concluded that, implementation of the Fuse Holders Program will provide reasonable assurance that aging effects will be managed such that the "fuse holders (metallic part), not part of a larger assembly" electrical commodity group within the scope of this program will continue to perform their intended function(s) during the period of extended operation.

.14 <u>Inaccessible Medium-Voltage Cables Not Subject to 10 CFR 50.49 Environmental</u> <u>Qualification Requirements (B2.1.21)</u>

The Non-EQ Inaccessible Medium-Voltage Cable Program is a new program that the applicant will implement prior to the period of extended operation. The program, when implemented will be comparable to that described in NUREG-1801, Section XI.E3, "Inaccessible Medium-Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements." This program applies to inaccessible (e.g., in conduit or direct-buried) medium-voltage cables within the scope of license renewal that are exposed to significant moisture simultaneously with applied voltage. This program includes a commitment to test these cables once every 10 years and the first test to be completed prior to the period of extended operation to provide an indication of the condition of the conductor insulation. The specific type of test to be performed will be determined prior to the expiration of the current license.

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures, and confirmed that the applicant had a commitment in place to implement the program prior to the start of the period of extended operation. The inspectors also interviewed the program owner to determine implementation of particular test procedures to be developed under the program. The inspectors performed a walkdown of the one manhole containing 13.8 kV cables and splices and observed it to be free of water. The inspectors verified that two other manholes, which were in close proximity to underground medium voltage cables, did not contain any medium voltage cables. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects. During the review of operating experience specific to Prairie Island, the inspectors noted that:

- In response to Generic Letter 2007-01, the licensee stated that "PINGP intends to implement an Underground cable maintenance program by the end of 2007." This was not yet in place when the NRC license renewal audit team arrived in September 2008.
- In response to the LR audit team's questions, PINGP issued the following corrective action documents: the action request (AR) 01150075, "Site Has Not Fully Implemented Response to NRC GL 2007-01"; AR 01089868, "Corporate Directive Not Implemented At PI"; and AR 01089500, "Develop An Underground Cable Maintenance Program." An apparent cause evaluation was performed in response to AR 01150075.
- Underground cable maintenance program is viewed as a current licensing basis issue, as PINGP has had underground cable failures (plant specific operating experience) and the program is not credited for license renewal purposes.

- The NRC resident inspection staff followed up on the issue and did not identify any violations of current regulations.
- Currently PINGP has a cable condition monitoring program (H43) in place as of March 2008
- The actual testing of the cables is governed by Procedures PE 4826 (testing of cables rated less than 600 Volts) and 4825 (testing of cables rated greater than 600 volts).
- Preventive Maintenance Change Requests (PMCRS) 01123654 (low voltage cables) and 01123652 (medium voltage cables) have been generated by the licensee to complete testing of cables within the next four outages.

The inspectors concluded that the Non-EQ Inaccessible Medium-Voltage Cable Program, when implemented as described, will effectively manage aging effects, since it will incorporate appropriate testing techniques. Implementation of this program will provide reasonable assurance that the effects of aging will be managed such that components within the scope of the program will perform their intended functions consistent with the current licensing basis for the period of extended operation.

.15 <u>Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components</u> <u>Program (B2.1.22)</u>

The Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program is a new program which, when implemented will be comparable to NUREG 1801, Section XI.M38, "Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components." The program will perform visual inspections of the internal surfaces of mechanical components to manage the aging effects of loss of material and cracking. Loss of material due to fouling is also included in the program. The program inspections are performed to provide assurance that existing environmental conditions are not resulting in degradation that could result in a loss of component intended functions. The program manages the aging effects of loss of material and cracking.

The inspectors reviewed LR program basis documentation, aging management review documents, interviewed the program owner, and reviewed the applicant's commitment to develop and implement an internal surfaces inspection program before the start of the period of extended operation. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors concluded that if the program is implemented as planned, there should be reasonable assurance that aging effects will be managed so that components susceptible to internal corrosion or fouling will continue to perform their intended function consistent with the current licensing basis for the period of extended operation.

.16 <u>Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling</u> Systems Program (B2.1.23)

The Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems Program is an existing program, which when enhanced, will be consistent with NUREG-1801, Section XI.M23, "Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems." The program manages aging effects of general corrosion on rails and other structural components of heavy load handling, components within the scope of NUREG-0612, and the light load handling components related to refueling activities. The program provides for periodic visual inspection of the components. The program is primarily concerned with structural components that make up the bridge and trolley.

The inspectors reviewed the applicable license renewal program basis documentation, existing overhead crane inspection procedures, and verified the commitment in the application to enhance the program prior to the period of extended operation. The inspectors also interviewed personnel responsible for the program, reviewed recent inspection reports, and condition reports to verify identified crane structural concerns are being addressed through the applicant's corrective action program. The inspectors also performed an independent search for corrective actions on crane related issues.

The inspectors identified lack of clarity in Sections 5.1 and 5.4 of the Program Basis Document LR-AMP- 412. According to Section 5.1, Scope of Program, some of the components will be inspected under crane inspections, while other will be included in the Structural Monitoring (SMP) inspections. It is not clear from this section, which components will be covered under which procedures. The inspectors could not find crane girder or any component specifically identified in the existing SMP inspection procedure. The inspectors were concerned that due to their limited accessibility, these components may not get inspected with the general structural inspections unless they are specifically identified for inspection. In Section 5.4 of the PBD, Detection of Aging Effect, describes inspection intervals for various cranes ranging from each shift to every refueling outage. It was not clear from this description if the frequency of the structural component inspections required per this program will be the same. Also this section does not discuss frequency of inspection for the components to be inspected under the SMP. The applicant has initiated action items to address these issues prior to the period of extended operations. (AR 01167147, AR 01167284)

The inspector found that during inspection of the reactor head lifting rig, per PM 3560-52, NDE examination of the welds were not performed. Inspection of these welds is required to meet the Standard ANSI N14.6 for Special Lifting Devices. This standard is referenced in the PBD, PM 3560-52, and USAR Section 12.2.12.3. The applicant initiated action to investigate this issue. The issue is related to the current licensing basis; therefore the Senior Resident Inspector was notified for follow up as necessary. (AR 01167385)

The inspectors concluded that the overhead load handling systems inspection program with enhancements per Commitment No. 19, and per AR 01167147 and AR 01167284 to be incorporated prior to the period of extended operation, will effectively manage aging effects, and will provide reasonable assurance that the overhead load handling systems structural components will continue to perform their intended for the period of extended operation.

.17 Lubricating Oil Analysis Program (B2.1.24)

The Lubricating Oil Analysis Program is an existing program that is consistent with NUREG 1801, Chapter XI Program XI.M39, Lubricating Oil Analysis Program. The Lube Oil Analysis Program maintains lubricating and hydraulic oil systems free of contaminants (primarily water and particulates), thereby; preserving an environment that is not conducive to loss of material, cracking or heat transfer degradation. Oil testing activities, which include periodic sampling, analysis, and trending of results, are performed to provide an early indication of adverse equipment condition in the lube and hydraulic oil environments.

The inspectors reviewed the lube oil analysis program documentation, corrective action documents, aging management review documents, existing procedures, and implementing documents. The inspectors searched the applicant's corrective action database for relevant condition reports and accessed the applicants sample scheduling system. The inspectors also interviewed the lube oil analysis program owner.

The inspectors concluded that the Lubricating Oil Analysis Program effectively manages aging effects. Continued implementation of the lube oil analysis program will provide reasonable assurance that the aging effects will be managed so that the program provides early indication of degrading conditions, to ensure equipment remains capable of performing its intended function consistent with the current licensing basis for the period of extended operation.

.18 Masonry Wall Program (B2.1.25)

The Masonry Wall Program (MWP) is an existing program which, in conjunction with the enhanced Structural Monitoring Program (SMP) (B2.1.38), will be consistent with NUREG-1801, Sections XI.S5, "Masonry Wall Program." The existing program is based on NRC IE Bulletin (IEB) 80-11, "Masonry Wall Design," and NRC Information Notice (IN) 87-67, "Lessons Learned from Regional Inspections of Licensee Actions in Response to IE Bulletin 80-11," and applies to the walls in proximity of or having attachment to safety-related (SR) equipment. The MWP manages cracking of the masonry walls through periodic inspections. Aging management of steel supports for the masonry walls is performed through inspections under the SMP. The walls that are not in IEB 80-11 scope but are in the LR scope will be managed through periodic inspections for cracking under the enhanced SMP (LR Commitment No. 30).

The inspectors reviewed the applicable license renewal program basis documentation and the existing inspection procedures. The inspectors verified that administrative controls were in place to ensure evaluation or reclassification of walls in accordance with the requirements of IEB 80-11. The inspectors interviewed the personnel responsible for the program, walked down portions of auxiliary and diesel generator (D5/D6) buildings, reviewed recent structural monitoring inspection reports and program health status report for issues pertaining to masonry walls, and reviewed condition reports to verify that the identified concerns are being addressed through the applicant's corrective action program. The inspectors also performed an independent search for corrective actions related to masonry walls.

The inspectors identified that the Section B2.1.25 and the Program Basis document LR-AMP-428M addressed only the safety-related walls (walls covered by IEB 80-11).

Additional walls that are outside the IEB scope but are within the scope of LR per 10 CFR 54.5 are not addressed. The applicant intends to include these additional walls under the enhanced SMP but this is not clarified in the PBD. The applicant initiated an action item to add clarification to the PBD. (AR 01167147)

The inspectors identified that the inspection records and the checklists included in the procedures lacked sufficient details to identify which walls were inspected. This made it difficult to ensure that all in-scope walls get inspected within their specified inspection intervals. In addition, during the interview, the inspectors identified inconsistencies related to implementation of procedure PM 3586-10 requirement to verify wall loads during the inspection. To address these concerns, the applicant has initiated action to expand the procedural guidance and make checklists more detailed to clearly identify the walls, the inspection criteria and the load verification/evaluation requirements. These changes will be made in conjunction with completion of the LR Commitment No. 30. (AR 01167284)

The inspectors found that in the 2Q04 SMP Quarterly Inspection Report, a concern was documented that safety-related masonry wall No. 27 may be overloaded and an evaluation was warranted. The original action request (AR) 00730185 was closed to Engineering Change (EC) 8370 in July 2006. The inspectors found that the evaluation was never performed and the EC was still open at the time of this inspection. The applicant performed a review and determined that based on design basis calculation, the existing load on the wall was bounded by the existing calculation and further evaluation was not required. (AR 01165684)

The inspectors concluded that the Masonry Wall Program, including the enhancements per LR Commitment No. 30, AR 01167147, and AR 01167284 to be incorporated prior to the period of extended operation, will effectively manage aging effects and provide reasonable assurance that the structural components will continue to perform their intended function.

.19 Metal-Enclosed Bus Program (B2.1.26)

The Metal-Enclosed Bus Program is a new program. It will be consistent with the recommendations of NUREG-1801, Chapter XI, Program XI.E4, "Metal-Enclosed Bus," and will be implemented prior to the period of extended operation. The Metal-Enclosed Bus Program is a condition monitoring program that inspects representative samples of the non-segregated 4160V phase bus between station offsite source auxiliary transformers and plant buses in scope of License Renewal. Internal visual inspection is performed to observe signs of aging of the bus insulation materials (such as cracking, discoloration, and embrittlement), signs of loose connections by inspecting insulation surface for anomalies, and signs of moisture and debris intrusion. The inspection may also include thermography and/or electrical resistance testing to ensure the integrity of the connections. The program manages the reduction of insulation resistance aging effect on insulation components, loose connections, and corrosion from moisture/debris intrusion in non-segregated bus ducts. The interior visual inspection will be conducted at least once every five years, or if conducted with thermography or electrical resistance testing, at least once every ten years. The Structures Monitoring Program will manage the aging effects associated with the metal-enclosed bus enclosure assemblies (steel and elastomers).

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures, and confirmed that the applicant had a commitment in place to implement the program prior to the start of the period of extended operation. The inspectors also interviewed the program owner and performed a walkdown to determine the general condition of the metal enclosed bus ducts. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors concluded that, implementation of the Metal-Enclosed Bus Program will provide reasonable assurance that aging effects will be managed such that electrical commodities within the scope of this program will continue to perform their intended functions during the period of extended operation.

.20 One-Time Inspection Program (B2.1.29)

The One-Time Inspection Program is a new program that will be generally comparable to NUREG-1801, Section XI.M32, "One-Time Inspection." The program will include measures to verify the effectiveness of the Water Chemistry Program, Fuel Oil Chemistry Program, and Lubricating Oil Analysis Program for mitigating possible aging effects by verifying that unacceptable material degradation is not occurring in areas exposed to oil, steam, treated water or other environments where significant degradation is not expected to occur. Additionally, the program addresses potentially long incubation periods for certain aging effects and provides a means of verifying that an aging effect is either not occurring or is progressing so slowly as to have negligible effect on the intended function of the structure or component. The inspectors discussed the planned scope and methodology for the program with applicant engineers and confirmed that the applicant had an existing commitment to implement and complete the program prior to the period of license renewal.

The inspectors reviewed the applicant's LR documentation to verify sufficient guidance existed to implement the program in conformance with the GALL system. The inspectors noted that the program included only limited information for selecting the components to be sampled, such that the inspectors could not conclude whether implementation of the program would meet the intent of the GALL since the implementation procedure had not vet been developed. As a result, the applicant developed and approved Technical Report LR-TR-539, "One-Time Inspection Program Sampling Methodology," to identify the methodology to be used in selecting the samples under the One-Time Inspection program. This methodology consists of a 'smart sample' approach that is based on the premise that inspection of those areas most susceptible to aging can be used to confirm the performance in less susceptible areas without the need for further inspections. The program will identify material and environment combinations most susceptible to identified aging effects/mechanisms. Components will be divided into five sample groups and then further broken down within these groups based on material, aging effect, and aging mechanism. A minimum of one inspection will be performed for each of these identified combinations.

The inspectors concluded that, provided the program was implemented in accordance with the commitment and planned methodology, the program should provide reasonable assurance that the effects of aging would be assessed and managed such that components within the scope of the program will perform their intended functions consistent with the current licensing basis for the period of extended operation.

.21 Reactor Head Closure Studs Program (B2.1.33)

The Reactor Head Closure Studs Aging Management Program provides for condition monitoring and preventive activities to manage stud cracking due to stress corrosion cracking and loss of material due to wear, and general pitting and corrosion. It is an existing program that provides for ASME Section XI inspections of reactor head closure studs and stud components. The program is implemented through station procedures based on the examination and inspection requirements of ASME Code, Section XI, Subsection IWB, Table IWB 2500-1.

The inspectors reviewed station procedures, interviewed the ISI program manager, and concluded that the applicant had provided adequate guidance to ensure the aging effects will be appropriately assessed and managed. There is reasonable assurance that the intended function of the closure studs will be maintained through the period of extended operation.

.22 Selective Leaching of Materials (B2.1.36)

The Selective Leaching of Materials Program is a new program which, when implemented, with one exception, will be generally be comparable to NUREG-1801, Section XI.M33 "Selective Leaching of Materials." The program will consist of one-time visual inspection, hardness measurement, and alternative detection techniques of selected components that are susceptible to selective leaching. The use of alternative detection techniques was identified in the program as an exception to the GALL. The program will determine if selective leaching is occurring and, if found, whether the aging mechanism will affect the ability of the component to perform its intended function.

The inspectors reviewed the LR evaluation, interviewed the selective leaching of materials program owner, and reviewed the applicant's commitment to develop and implement a selective leaching of materials inspection program before the start of the period of extended operation. The inspectors' review of the Selective Leaching Program identified that Section 5.3 was not in agreement with the GALL Element 3, "Parameters Monitored/Inspected." Specifically, the program document stated that issues identified will be placed in the corrective action system and "may include expansion of the inspection size and location." However, the GALL specifically states that "Follow-up of unacceptable inspection findings includes expansion of the inspection sample size and location." Based on this issue, the applicant initiated AR 01167147 09 to revise the wording in the Selective Leaching Program to match the GALL for expansion of inspection samples based on unacceptable findings.

Similar to the inspectors concern with the One-Time Inspection Program, the applicant had not developed an implementation document to identify the methodology for selection of sample size and sample location. As a result, the applicant developed and approved LR-TR-540, "Selective Leaching of Materials Program Sampling Methodology," which includes the methodology to be used to identify the smart sample of each major material/environment combination to be inspected under this program. This approach will include at least one inspection for each unique combination of make/model and material with the objective to select a sufficient number of inspection locations to bound the loss of material due to selective leaching.

The inspectors concluded that, if the sampling methodology recently established and the program is implemented as planned, there should be reasonable assurance that aging effects will be managed so that components susceptible to selective leaching of materials will continue to perform their intended function consistent with the current licensing basis for the period of extended operation.

.23 Structural Monitoring Program (B2.1.38)

The Structural Monitoring Program (SMP) is an existing program which, when enhanced, will be consistent with NUREG-1801, Section XI.S6, "Structures Monitoring Program." The existing program is a part of the applicant's Maintenance Rule Program, that implements the current industry guidance provided in NUMARC 93-01 as endorsed by the NRC Regulatory Guides 1.160 and 1.182. The SMP manages aging effects by performing periodic visual inspections to monitor the condition of structures and components to ensure that degraded conditions are identified, evaluated, and corrected as necessary such that there is no loss of intended function. The existing program will be enhanced to cover all structures and components within the License Renewal scope by adding buildings, structures, mechanical/electrical component supports, electrical equipment and instrumentation enclosures, non-safety-related masonry walls, and miscellaneous components. The enhancements will also include specifying additional parameters to be monitored and to require periodic sampling for ground water and river water chemistries to ensure they remain non-aggressive.

The inspectors reviewed the applicable license renewal program basis documentation, existing structural monitoring inspection procedures, and confirmed that the applicant had commitments in place to enhance the program prior to the period of extended operation. The inspectors also interviewed the personnel responsible for the program, walked down portions of auxiliary and diesel generator (D5/D6) buildings, reviewed recent structural monitoring inspection report and program heath status report, and reviewed condition reports to verify that the identified structural concerns are being addressed through the applicant's corrective action program. The inspectors also performed an independent search for corrective actions related to structural monitoring.

The inspectors identified some weaknesses in the implementation of the SMP. The inspection records and the checklists included in the procedures lacked sufficient details to identify specific areas within a building, or specific components that were included in or excluded from the inspection. This also made it difficult to ensure that all in-scope areas and components get inspected within their specified inspection intervals. The inspectors also found that the current method of scheduling inspections at any time within the specified inspection cycles made it possible to have an interval between two consecutive inspections to be almost 10 years for a 5-year cycle inspection. This would not be consistent with the 5-year inspection frequency as stated in the application. The applicant committed to address these concerns by making changes to the SMP implementing procedures. The changes will expand the procedural guidance to more clearly define structures and components subject to inspection, to make inspection checklists more detailed to provide a comprehensive record of the inspection, and to provide more scheduling and documenting structure to the SMP. These changes will be made in conjunction with completion of the LR Commitment No. 30. (AR 01167284)

The inspectors concluded that the Structural Monitoring Program, including the enhancements per LR Commitment No. 30 and AR 01167284 to be incorporated prior to the period of extended operation, will effectively manage aging effects and provide reasonable assurance that the structural components will continue to perform their intended function.

.24 Environmental Qualifications (EQ) of Electric Components (B3.1)

The Environmental Qualification of Electric Components Program is an existing program. It is consistent with the program described in NUREG-1801, Section X.E1, "Environmental Qualification (EQ) of Electric Components." This program manages component thermal, radiation, and cyclical aging through the use of aging evaluations based on 10 CFR 50.49(f) qualification methods. As required by 10 CFR 50.49, EQ components not qualified for the current license term are to be refurbished or replaced, or have their qualification extended prior to reaching the aging limits established in the evaluation. Aging evaluations for EQ components that specify a qualification of at least 40 years are considered time-limited aging analyses for license renewal.

The inspectors reviewed program documentation, condition reports, aging management review documents and existing procedures to confirm that the applicant has been successful in effectively managing aging effects of EQ electric components. The inspectors also interviewed EQ Program owner to confirm that the applicant will continue to carry out the EQ Program for the duration of the extended operation. The inspectors verified that the applicant performed adequate historic reviews of plant specific and industry experience to determine aging effects.

The inspectors concluded that the applicant's existing EQ Program has been effective overall. The program has been subject to periodic internal and external assessments that facilitate continuous improvement. Continued implementation of this program provides reasonable assurance that components within the scope of the program will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

5. EXIT MEETING SUMMARY

The results of this inspection were discussed on February 18, 2009, with Mr. Wadley, and other members of the Northern States Power Company staff in an exit meeting open for public observation at the Prairie Island Nuclear Generating Plant Training Center. The applicant acknowledged the inspection results and presented no dissenting comments. The Exit Meeting Presentation Slides are included in this report, following the supplemental information attachment.

The inspectors noted that proprietary documents were reviewed during the course of the inspection. The applicant confirmed that all such proprietary documents were returned or the copies destroyed and that the likely content of the report would not involve the proprietary material.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Applicants

Michael Wadley	PINGP Site Vice President
Kenneth Albrecht	General Manager, Major Projects
Charles Bomberger	Vice President, Nuclear Projects
Gene Eckholt	License Renewal Project Manager
Scott Northard	PINGP Plant Manager
Phil Lindberg	License Renewal Program Engineering Supervisor
Scott Marty	License Renewal Mechanical Engineering Supervisor
Richard Pearson	License Renewal Civil Engineering Supervisor
Joe Ruether	License Renewal Electrical Engineering Supervisor
Robert Vincent	Licensing Lead, License Renewal Project

<u>Other</u>

Ron Johnson President, Prairie Island Indian Community Tribal Council (Observer)

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

LICENSE RENEWAL DOCUMENTS

License Renewal Application

Application for Renewed Operating Licenses; Prairie Island Nuclear Generating Plant Units 1 and 2; dated April 11, 2008

License Renewal Action Items (Written as a Result of the Inspection)

AR 01165684; Evaluate Loads on Block Wall 27; dated January 16, 2009

AR 01167147; LR actions Resulting from NRC Region Inspection; dated January 28, 2009

AR 01167284; LR actions Resulting from NRC Region Inspection; dated January 29, 2009

AR 01167385; Justify Relaxation of Head Lift Rig NDE Frequency; dated January 29, 2009

AR 01167225; Missing Insulation and Rust on CL Inlet; dated January 29, 2009

AR 01166781; Verify Joint Design; dated January 26, 2009

License Renewal Aging Management Program Basis Documents

LR-AMP-403; ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program; Revision 2

LR-AMP-407; Flow-Accelerated Corrosion Program; Revision 2

LR-AMP-412; Inspection of Overhead Heavy Load and Light Load (Related to Refueling) Handling Systems Program; Revision 2

LR-AMP-413; Compressed Air Monitoring Program; Revision 2

LR-AMP-414; Close-Cycle Cooling Water System; Revision 2, Add. 1

LR-AMP-415; Fire Water System Program; Revision 2

LR-AMP-416; Fuel Oil Chemistry Program; Revision 2

LR-AMP-418; One-Time Inspection Program; Revision 2

LR-AMP-419; Selective Leaching of Materials Program; Revision 2

LR-AMP-420; Buried Piping and Tanks Inspection Program; Revision 2

LR-AMP-422; External Surfaces Monitoring Program; Revision 2

LR-AMP-424; Lubricating Oil Analysis Program; Revision 2

LR-AMP-425; ASME Section XI, Subsection IWE Program; Revision 2

LR-AMP-426; ASME Section XI, Subsection IWF Program; Revision 2

LR-AMP-428; Structural Monitoring Program; Revision 2

LR-AMP-428M; Masonry Wall Program; Revision 2

LR-AMP-434; Reactor Head Closure Studs Program; Revision 2

LR-AMP-438; Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program; Revision 2, Add. 1

License Renewal Aging Management Review Reports

LR-AMR-311; Component Cooling; Revision 2

LR-AMR-316; Fire Protection System; Revision 2

LR-AMR-328; Diesel Generator and Screenhouse Ventilation System; Revision 2

LR-AMR-330; Auxiliary Feedwater System; Revision 2

LR-AMR-341; Auxiliary and Turbine building; Revision 2

LR-AMR-342; Component Supports; Revision 2

LR-AMR-343; Cranes, Heavy Loads, Fuel Handling; Revision 2

LR-AMR-347; Reactor Containment Vessels Units 1 and 2; Revision 2

License Renewal Drawings

LR-193817; Site Layout; Revision 3

LR-39228-1; Fire Protection and Screen Wash System – Unit 1 and 2; Revision 2

LR-39243; License Renewal Boundary Dwg Flow Diagram Station Air System Unit 1 and 2; Revision 1

LR-39244; License Renewal Boundary Dwg Flow Diagram Instrument Air Piping; Revision 1

LR-39245-1; Component Cooling System Unit 1 - Flow Diagram; Revision 1

LR-39245-2; Unit 1 Flow Diagram Component Cooling System; Revision 4

LR-39246-1; Component Cooling System Unit No. 2 - Flow Diagram; Revision 1

LR-39246-2; Unit 2 Component Cooling System Flow Diagram; Revision 2

LR-39253-3; Station Air/Condensate Polishing; Revision 1

LR-39605-1; License Renewal Boundary Dwg Steam Heating System Flow Diagram; Revision 2

LR-39605-2; License Renewal Boundary Dwg Turbine Bldg – Hot Water Heating System Flow Diagram; Revision 1

LR-39605-3; License Renewal Boundary Dwg Hot Water Heating System Aux. Bldg. Flow Diagram; Revision 1

LR-XH-1001-4; License Renewal Boundary Dwg Flow Diagram Chemical and Volume Control System; Revision 1

LR-XH-1001-5; License Renewal Boundary Dwg. Flow Diagram Chemical and Volume Control System; Revision 4

LR-XH-1-29; Spent Fuel Pool Cooling System; Revision 2

LR-XH-1-38; Flow Diagram – Unit 1 Chemical and Volume Control System; Revision 1

LR-XH-1-39; Flow Diagram – Chemical and Volume Control System; Revision 4

LR-XH-1-40; Flow Diagram – Units 1 and 2 Chemical and Volume Control System; Revision 4 LR-XH-1-41; Flow Diagram – Unit 1 and 2 Chemical and Volume Control System; Revision 1

License Renewal Miscellaneous Documents

L-PI-08-104; Responses to NRC Requests For Additional Information; dated November 18, 2008 Regarding Application for Renewed Operating Licenses; dated December 18, 2008

License Renewal Scoping and Screening Reports

LR-SSR-111; Component Cooling System; Revision 2

LR-SSR-116; Fire Protection System; Revision 2

LR-SSR-119; Station and Instrument Air; Revision 2

LR-SSR-121; Spent Fuel Pool Cooling System; Revision 2

LR-SSR-143; Cranes, Heavy Loads, Fuel Handling; Revision 2

LR-SSR-147; Reactor Containment Vessels Unit 1 and 2; Revision 3

License Renewal Technical Reports

LR-TR-519; Corrective Action Program Elements; Revision 0

LR-TR-517; Identification of Containments, Structures and Component Supports; Revision 3

LR-TR-520; Aging Effect Applicability Evaluation for Structural Components; Revision 3

LR-TR-504; Identification of SSCs Within Scope of 10 CFR 54(a)(3) for Fire Protection; Revision 4

LR-TR-508; Material Aging Effects Report; Revision 5

LR-TR-539; One-Time Inspection Program Sampling Methodology; Revision A

LR-TR-540; Selective Leaching of Materials Program Sampling Methodology; Revision A

CURRENT PLANT DOCUMENTS

Calculations

GEN-PI-052; Safe Shutdown Equipment for Compliance with 10 CFR Part 50, Appendix R; Revision 3

Chemistry Sample Results

Aux Building Heating System

D-1 Cooling Water Jacket

D5 Engine No. 1 Crankcase Oil View Report

Turbine Driven Auxiliary Feedwater Pump Oil View Reports

Unit 1 Component Cooling

Corrective Action Documents

AR 00195868; 12 Turbine Oil Cooler Inlet has Pin Hole Leak; dated June 6, 2002

AR 00421812; Crack in Concrete Stair Landing at EL. 715' on East Side of Old Admin Building; dated March 24, 2003

AR 00535532; 10-FP-13 is Below B31.1 Minimum Wall Thickness; dated October 4, 2003

AR 00864768; Water Found in Instrument Air Lines; dated August 22, 2006

AR 01038695; SP 1208 Results Inconsistently Evaluated from 1990-2003; dated July 6, 2006

AR 01063226; Low Wall Thickness Found on 24-CL-16; dated November 16, 2006

AR 01064348; 121 Compressor Train has Exceeded the MR Unavail Limit; dated November 29, 2006

AR 01064513; Refuel Cavity Leakage Walkdown; dated November 29, 2006

AR 01080925; VC-39-3 Boric Acid Package Leak Affecting ASME Valve Bonnet; dated March 7, 2007

AR 01101497; Relevant Boric Acid Leak on CV-31212, BA Blender CV; dated July 12, 2007

AR 01103444; 121 Station Air Moisture Separator Low UT Thickness Results; dated July 25, 2007

AR 01119003; Low Thickness on 122 Inst. Air Receiver Nozzles; dated November 26, 2007

AR 01120473; MFP Sampling Not Being Performed Quarterly; dated December 7, 2007

AR 01121348; Station Air Header Pressure Downward Spikes; dated June 6, 2008

AR 01122121; Jockey Pump Thermals Tripped Due to Pump Seizing; dated December 25, 2007

AR 01127127; Cracks Found on bridge Truck Girder; dated February 13, 2008

AR 01127599; Jockey Pump Unable to Maintain Greater than 115 psig During Retest; dated February 28, 2008

AR 01135285; 123 Inst Air Comp has Thru Wall Leaks; dated April 22, 2008

AR 01148305; D5/D6 Fuel Oil Storage Tanks Corrosion; dated January 14, 2009

AR 01151320; Generate an a(1) Action Plan for SA 123 Air Compressor; dated September 20, 2008

AR 01155195; Adverse Trend in Crane Inspection Identified Issues; dated October 13, 2008

AR 01161855; Mid Cycle AFI-5 – Chemistry Program Controls Not Being Maintained; dated December 9, 2008

AR 01164816; CL System Walkdown Findings; dated January 8, 2009

AR 01165438; Sampling of Closed Cooling Water Not Performed; dated January 14, 2009

AR 01165587; Demin Water Supply Line to Surge Tank Missing U-bolt; dated January 15, 2009

AR 01167021; Bolting for FP Pipe Support Needs Adjustment; dated January 27, 2009

AR 01167026; 122 DDFP Silencer Exhaust Support Bolts Need Adjustment; dated January 27, 2009

AR 01167204; Scaffolding in SCRN HSE Braced on Degraded Hanger; dated January 28, 2009

CAP 00093965; "New Fuel Oil Shipments Do Not Meet PI Specifications"; dated April 8, 2002

CAP 00587204; "Delivered New Safeguards Diesel Fuel Oil Fails Lab Analysis; dated March 17, 2004

CAP 01047847; "11TD AFW Pump Outboard Turbine Bearing Oil Sample Milky"; dated September 1, 2006

CAP 01068923; "11 TD AFW Pump Water in Governor End Turbine Bearing Lube Oil"; dated December 21, 2006

CAP 01115220; "Used oil samples backing up in Aux Bldg are not being surveyed/released"; dated October 18, 2007

CAP 01143875; "Used Oil Samples backing up at access control (QA Program)"; dated July 11, 2008

Drawings

NF-38398; Reactor Building – Unit No. 2 Containment Vessel; Revision 6H

NF-39287-4; Fuel Oil Yard Piping and Filter House; Revision L

NF-39262-2, Yard Piping; Revision L

X-HIAW-64-1; 19500 Gallon Underground Tank; Revision B

X-HIAW-64-2; 35000 Gallon Underground Tank; Revision B

X-HIAW-64-4; 40000 Gallon Underground Oil Storage Tank; Revision B

NF-38500-1; Safety-Related Masonry Walls; Revision 76

NF-38501-1; Safety-Related Masonry Walls; Revision J

NF-38502-1; Safety-Related Masonry Walls; Revision 76

NF-38503-1; Safety-Related Masonry Walls; Revision C

NF-38504-2; Safety-Related Masonry Walls; Revision D

Procedures

1516; Walkdown Checklist Mechanical systems/Components; Revision 1

5AWI 14.6.0; ASME Section XI Inservice Inspection and Pressure Testing; Revision 9

5AWI 3.12.2; ASME Section XI Repair/Replacement Program; Revision 14

5AWI 3.13.0; Fire Protection Program; Revision 17

CD 5.28; Conduct of System Engineering; Revision 4

D18; Equipment Lubrication; Revision 75

D58; Heavy Loads Program; Revision 32

EM 2.1.2; PINGP Site Engineering Manual Engineering Design, fabrication, and Installation Summary for Block Walls; Revision 1

F5 Appendix K; Fire Protection Systems Operability Requirements; Revision 11

FP-PE-FAC-02; Layout and Marking of Piping and Components for Flow Accelerated Corrosion Program; Revision 0

H10.5; 4th Interval Inservice Inspection Plan – Units 1 and 2 December 21, 2004 through December 20, 2014; Revision 3 H19; Containment Leak Rate Testing; Revision 11 H24.3; Structural Monitoring Program; Revision 4 H30; "Fuel Oil Program"; Revision 5 H32.2; Lubrication Sampling And Analysis Program; Revision 4 H58; Buried Pipe and Tanks Integrity Program; Revision 0 PM 3505-5, "Instrument Air System Dew Point Test"; Revision 10 PM 3586-10; Periodic Structures Inspection; Revision 4 RPIP 3050; Corrosion Monitoring and Control Program; Revision 11 RPIP 3101; Chemistry Frequencies and Limits, Attachment A; Revision 7 RPIP SWCPCCWS; Strategic Water Chemistry Plan Closed Cooling Water System; Revision 2 SP 1190; D1/D2 EDG and 121/122 DDCLP FOST Monthly Sampling; Revision 40 SP 2190; D5/D6 FOST Monthly Sampling; Revision 22 SWI GSE-27; Conduct of Systems Engineering; Revision 6 SWI NDE-VT-2.0; Visual Examination of Components and Their Supports; Revision 2

H10.3; Appendix C Containment Inservice Inspection Jurisdictional Boundary Basis; Revision 1

TP 1720; 121 Lab and Service Area Chiller Inspection; Revision 8

Surveillances

FACC-08-089; Flow Accelerated Corrosion Examination; dated September 20, 2008

Form 1255; "Above Ground Storage Tank and SPCC Monthly Inspection"; dated July 2005

Form 692; "Fuel Oil Storage Tank Sampling Data Sheet"; dated March 1, 2006

RC System Walkdown Checklist; dated March 15, 2008

SP 1196; Fire Protection Related Sprinkler System Test; June 4, 20004, November 18, 2005, and October 16, 2007

SP 1190; "D1/D2 EDG and 121/122 DDCLP FOST's Monthly Sampling; Revision 40

SP 2190; "D5/D6 Emergency Diesel Generator Fuel Oil Storage Tanks Monthly Sampling Procedure"; Revision 22

TP 1533; "Underground Storage Tank and Line Tightness Tests"; Revision 5

System and Program Health and Status Reports

Program Health Status, Maintenance Rule; dated January 30, 2008

Fire Protection/Detection; dated January 16, 2009

Component Cooling; dated January 16, 2009

Radiation Monitoring; dated January 28, 2009

Work Orders

WO 095785; Containment Polar Crane Mechanical Inspection; dated April 26, 2006

WO 107906; "TP 1533 – Underground Storage Tank and Line Tightness Testing"; dated June 7, 2007

WO 203716; "Perform fuel oil storage tank tightness tests"; dated September 17, 2002

WO 282510; Rebuild 22 CC Pump; dated October 5, 2008

WO 282861-01; Reactor Head Lifting Head Spreader & Connecting Legs Assembly Inspection; dated February 12, 2008

WO 306274; BACC Safety Injection Pump Discharge Crossover Line; dated September 20, 2007

WO 309391; Replace 121 Jockey Pump Suction Piping; dated October 8, 2004

WO 342224-01; Structural Monitoring Program Quarterly Inspection Report 4Q07 (D5/D6 Building);

WO 348874; 11 SI Pmp Disch Check; dated October 26, 2008

WO 400322; Structural Monitoring Program Quarterly Inspection Report 2Q04 (Auxiliary Building)

EXIT MEETING SLIDES



- NRC Inspection Results
- Applicant Comments
- Closing Comments
- Public Questions

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License Renewal Process

- If a renewed license is granted, there is another onsite inspection by the regional office (71003)
 - A portion is performed prior to the period of extended operation
 - Focuses on implementation of commitments and inspection results
 - Culminates in an inspection report



























Closing Comments



Questions?

 For further information see the license renewal page on the NRC website at

http://www.nrc.gov/reactors/operating/licensing/renewal.html

 Or call our public affairs official, Prema Chandrathil, at 630-829-9663

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LIST OF ACRONYMS USED

AMP	Aging Management Program
AMR	Aging Management Report
AR	Action Request
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CC	Component Cooling System
CCCW	Closed Cycle Cooling Water
CFR	Code of Federal Regulations
EPRI	Electric Power Research Institute
EQ	Environmental Qualification
FAC	Flow Accelerated Corrosion
IEB	Inspection And Enforcement Bulletin
IEEE	Institute of Electrical & Electronic Engineers
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
ISI	Inservice Inspection
LR	License Renewal
LRA	License Renewal Application
MWP	Masonry Wall Program
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resources Council
PBD	Program Basis Document
RC	Reactor Cooling System
SA	Station and Instrument Air System
SBO	Station Blackout
SF	Spent Fuel Pool Cooling System
SMP	Structures Monitoring Program
SSC	Systems, Structures, and Components
U-1	Unit 1
U-2	Unit 2
USAR	Updated Safety Analysis Report
VC	Chemical and Volume Control System
WO	Work Order