



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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LISLE, IL 60532-4352

May 1, 2009

Mr. Larry Meyer  
Site Vice-President  
NextEra Energy Point Beach, LLC  
6610 Nuclear Road  
Two Rivers, WI 54241

**SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, NRC INTEGRATED  
INSPECTION REPORT 05000266/2009002 AND 05000301/2009002**

Dear Mr. Meyer:

On March 31, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Point Beach Nuclear Plant, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on April 8, 2009, with Mr. J. Bjorseth and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed your personnel.

The report documents three NRC-identified findings of very low safety significance (Green). All of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because the issues were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region III; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Point Beach. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at Point Beach. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

L. Meyer

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

Sincerely,

**/RA/**

Michael A. Kunowski, Chief  
Branch 5  
Division of Reactor Projects

Docket Nos. 50-266; 50-301  
License Nos. DPR-24; DPR-27

Enclosure: Inspection Report 05000266/2009002; 05000301/2009002  
w/Attachment: Supplemental Information

cc w/encl: M. Nazar, Senior Vice-President and Chief Nuclear Officer  
A. Khanpour, Vice-President, Engineering Support  
Licensing Manager, Point Beach Nuclear Plant  
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M. Ross, Managing Attorney  
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P. Wells, (Acting) Vice-President, Nuclear  
Training and Performance Improvement  
J. Bjorseth, Plant General Manager  
K. Duveneck, Town Chairman, Town of Two Creeks  
Chairperson, Public Service Commission of Wisconsin  
J. Kitsemel, Electric Division, Public Service Commission of Wisconsin  
P. Schmidt, State Liaison Officer

L. Meyer

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Letter to L. Meyer from M. Kunowski dated May 1, 2009

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, NRC INTEGRATED  
INSPECTION REPORT 05000266/2009002 AND 05000301/2009002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-266; 50-301  
License Nos: DPR-24; DPR-27

Report No: 05000266/2009002; 05000301/2009002

Licensee: NextEra Energy Point Beach, LLC

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: Two Rivers, WI

Dates: January 1, 2009, through March 31, 2009

Inspectors: R. Krsek, Senior Resident Inspector  
R. Ruiz, Resident Inspector  
J. Jandovitz, Project Engineer  
N. Feliz Adorno, Reactor Engineer  
W. Slawinski, Senior Health Physicist

Approved by: Michael Kunowski, Chief  
Branch 5  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

IR 05000266/2009002, 05000301/2009002; 01/01/2009-03/31/2009; Point Beach Nuclear Plant, Units 1 & 2; Equipment Alignment and Maintenance Effectiveness.

This report covers a three-month period of inspection by resident inspectors and regional specialists. Three Green findings were either self-revealed or identified by the inspectors this quarter. All of the findings that were identified had associated Non-Cited Violations (NCVs). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Mitigating Systems**

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to fully incorporate applicable tornado missile protection design requirements into the design of the 'A' train diesel fuel oil storage and transfer system. Specifically, the T-175A underground fuel oil storage tank vent line was found not capable of withstanding the effects of a design basis tornado missile strike without resulting in the subsequent loss of capability of the G-01 and G-02 emergency diesel generators to perform their safety functions. The licensee performed a prompt operability determination, concluded that the system was operable but non-conforming, and put in place compensatory measures until the design deficiency had been resolved.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, closure of the T-175A vent path would adversely affect the availability, reliability, and capability of the G-01 and G-02 emergency diesel generators to perform their safety-related functions. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The finding was determined to be of very low safety significance (Green) because the finding was a design deficiency confirmed not to result in loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding as the performance deficiency occurred in the 1990s and was not indicative of current performance. (Section 1R04.1)

- Green. The inspectors identified a finding of very low safety significance and associated NCV of Technical Specification (TS) 3.7.7, "Component Cooling Water (CCW) System," for the failure to recognize that the Unit 1 1P-11B CCW pump was inoperable. Consequently, the licensee failed to take actions in accordance with TS for an

inoperable CCW pump. Specifically, on January 1, 2009, auxiliary operators added a full reservoir (bubbler) of oil to the inboard bearing for the second time in 24 hours, due to an oil leak. This abnormal condition was not appropriately characterized by the licensee until after two more oil additions, when a condition report was written to document the oil addition on January 5, 2009. The licensee performed an apparent cause evaluation and implemented corrective actions to address the deficiencies and lessons learned from this finding.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the CCW pump was degraded with an inboard bearing oil leak and may not have been able to fulfill the 30-day mission time of the pump. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone, dated January 10, 2008.

The inspectors determined that the finding required a Phase 2 analysis since the finding represented an actual loss of a single train for greater than its TS allowed outage time. The inspectors and senior reactor analyst determined through Phase 2 analysis that this issue is best characterized as a finding of very low safety significance (Green). The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution, corrective action program component, because personnel did not use a low threshold for identifying issues. Specifically, licensee personnel failed on three occasions to enter the oil additions into the corrective action program which would have required a Senior Reactor Operator to screen the condition for operability. [P.1(a)] (Section 1R12.1.b.(1))

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to promptly correct a condition adverse to quality associated with an inboard oil leak on the Unit 1 1P11-B CCW pump identified on January 27, 2009. Consequently, the CCW pump operated in a degraded condition until the pump was taken out of service to address inboard bearing oil leaks on January 31 and February 1, 2009. Specifically, on January 27, 2009, a condition report was written documenting an inboard bearing leak; however, the immediate operability screening was incorrect and the licensee's screening process failed to ensure prompt corrective actions were taken to address this condition adverse to quality. The licensee performed an apparent cause evaluation and implemented corrective actions to address the deficiencies and lessons learned from this finding.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the CCW pump was degraded with an inboard bearing oil leak and may not have been able to fulfill the 30-day mission time of the pump. The



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**B. Licensee-Identified Violations**

None.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 was at 100 percent power throughout the inspection period with the exception of planned power reductions during routine testing and an unplanned power reduction of less than 2 percent power from January 21 through January 27, 2009, due to the unavailability of the Unit 1 feedwater Leading Edge Flow Meter.

Unit 2 was at 100 percent power throughout the inspection period with the exception of planned power reductions during routine testing.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness For Impending Adverse Weather Condition – Tornado Season Readiness

##### a. Inspection Scope

To assess the licensee's preparedness for the onset of the tornado season and preparation for general adverse summer weather conditions, the inspectors reviewed the licensee's overall preparations and protection for the expected weather conditions. In March 2009, the inspectors walked-down important outdoor areas within the protected area, in addition to the licensee's emergency alternating current (AC) power systems, because their safety-related functions could be affected by, or required as a result of, high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee's preparations against the procedures to determine if the staff's actions were adequate. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. Finally, the inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings of significance were identified.

.2 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Final Safety Analysis Report (FSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. Finally, the inspectors reviewed the licensee's evaluations and corrective actions as a result of an external flooding event which had occurred in the Unit 1 façade in June 2008. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one external flooding sample as defined in IP 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Diesel Fuel Oil System

a. Inspection Scope

The inspectors performed a partial system walkdown of the emergency diesel generator (EDG) fuel oil supply and transfer system. The inspectors selected this system based on its risk-significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, the FSAR, Technical Specification (TS) requirements, outstanding work orders (WOs), and condition reports in order to identify conditions that could have rendered the system incapable of performing its intended function. The inspectors also walked-down accessible portions of the system to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved any equipment alignment related issues and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes one partial system walkdown sample as defined in IP 71111.04-05.

b. Findings

Inadequate Design of Diesel Fuel Oil Tank Vent for Tornado Protection

Introduction: A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to fully incorporate applicable tornado missile protection design requirements into the design of the 'A' train diesel fuel oil storage and transfer system. Specifically, the T-175A underground fuel oil storage tank (FOST) vent line was found not capable of withstanding the effects of a design basis tornado missile strike without the subsequent loss of capability of the G-01 and G-02 EDGs to perform their safety functions.

Description: On January 26, 2009, during a diesel fuel oil system equipment alignment inspection in and around the G-03/G-04 EDG building, the inspectors noted that all the vent lines for the fuel tanks in the G-03/G-04 EDG building protruded and terminated outside of the tornado protected walls of the building. The affected tanks were: T-175A, 'A' train FOST for G-01 and G-02 EDGs; T-175B, 'B' train FOST for G-03 and G-04 EDGs; and T-176A and B, the G-03 and G-04 EDG day tanks. It was apparent to the inspectors that the exposed portions of the vent lines were susceptible to a strike by a design basis tornado missile (4 inch x 12 inch x 12 foot wooden plank traveling at 300 miles per hour), and that this impact could crimp the vent line shut. An unmitigated crimp of the vent lines, coincident with the running of the diesels, would eventually have led to a halt in the fuel supply to the affected EDGs, disabling them. This appeared to conflict with the design requirements of General Design Criteria (GDC) 2, so the inspectors notified the licensee of the concern and the issue was entered into the CAP. A prompt operability determination (POD) was requested by operations and was subsequently reviewed by the inspectors.

The inspectors noted that the G-03/G-04 EDG building and all of its related structures, systems, and components were built around 1995-1996, and as such, were required to be designed and built to the standards of NUREG-0800, Standard Review Plan (SRP), Revision 2. Section 8.3.1 of the SRP, "AC [alternating current] Power Systems (Onsite)," states that the basis for acceptance of the AC power system is conformance of the design criteria and bases to the Commission's regulations as set forth in the General Design Criteria of Appendix A to 10 CFR Part 50. Specifically, in accordance with the requirements of SRP section 9.5.4, structures, systems, and components of the fuel oil system shall be capable of withstanding the effects of tornadoes by locating the system and components in seismic Category I structures that provide protection from the effects of tornadoes and tornado missiles; and if protective barriers are not installed, the structures and components themselves should be designed to withstand the effects of the tornado, including tornado missile strikes.

Through a review of the licensee's POD, fuel oil system piping and instrumentation drawings, and a system walkdown, the inspectors concluded that the G-03 and G-04 tanks had two physically separated vent lines each, and the T-175B FOST's airspace, although it had only one outside vent line, was cross-connected to both 'B' train day tank airspaces via an unisolable overflow line. This cross-connected configuration essentially ties all three tank airspaces together. Additionally, based on the information provided in the POD, it has been shown that the most limiting minimum vent path diameter available to the 'B' train tanks (2 inches) would provide sufficient air flow to maintain the fuel

supply from each tank without drawing a vacuum. Therefore, it was determined that the T-175B FOST, T-176A G-03 day tank, and T-176B G-04 day tank were of sufficient design with respect to tornado missile protection due to the level of redundancy and separation of vent paths available to the tanks.

However, this review also revealed that the T-175A 'A' train FOST, which supplied both G-01 and G-02 day tanks, had no such redundancy in its vent paths. There were no normally available additional vent paths connected to this tank in the event that a design basis tornado missile were to strike the unprotected vent line and crimp it shut. In this scenario, it was estimated in the licensee's POD that the G-01 and G-02 EDGs could run at rated load for only about 2 hours without makeup from the T-175A tank. Continued operation of the 'A' train EDGs beyond that point would require operator action to assess the damage of the tornado, identify that the vent path had crimped shut, and take action to mechanically create an alternate vent path for the tank. Contrary to the requirements of GDC-2, the T-175A vent line alone was found not capable of withstanding the effects of a design basis tornado missile strike without causing the subsequent loss of capability of the 'A' train of emergency AC from performing its safety function for its specified mission time.

During the review of the POD, the inspectors noted that the licensee had originally concluded that the vent lines were all fully operable and conforming to the design requirements. In the case of the T-175A FOST, the licensee based this conclusion on engineering judgment, stating that the vent line would break-before-crimping if struck by the design basis missile and could not fail shut. The inspectors disagreed with the licensee's conclusion of full-conformance because of the lack of objective evidence or technical basis for drawing that conclusion, i.e., no supporting calculations or test data were produced. Additionally, an NRC materials expert was consulted on the matter and also disagreed with the licensee's assumption that the vent line could not fail shut.

Inspectors noted that the original POD, which was prepared by design engineering, received a review by systems engineering and was also reviewed and accepted by the senior reactor operator-licensed shift manager. Following further discussions between the inspectors and licensee management, and through further licensee review, the licensee informed the inspectors that the original conclusion in the POD was incorrect and that the licensee's position would be revised to reflect an operable but non-conforming status for the T-175A vent line. On April 3, 2009, the revised POD was issued and compensatory measures were proceduralized in station abnormal operating procedure AOP-13C, "Sever Weather Conditions," to direct operators to assess damage to the T-175A tank vent and create an alternate vent path by removing the tank's manhole cover if the vent was damaged.

Analysis: The inspectors determined that the failure to fully incorporate the tornado missile protection design requirements of GDC-2 into the design of the 'A' train diesel fuel oil storage and transfer system was a performance deficiency. The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the T-175A FOST vent line was found not capable of withstanding the effects of a design basis tornado missile strike without resulting in the subsequent inoperability of the G-01

and G-02 EDGs. The closure of the T-175A vent line would adversely affect the availability, reliability, and capability of the G-01 and G-02 EDGs to perform their safety-related functions.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The finding was determined to be of very low safety significance (Green) because the finding was a design deficiency confirmed not to result in loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding as the performance deficiency occurred in the 1990s and is not indicative of current performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related function of structures, systems, and components.

Contrary to the above, on January 26, 2009, it was identified that the licensee failed to select and install an adequate vent line design suitable for the needs of withstanding a design basis tornado missile strike. Specifically, the T-175A FOST was found not capable of withstanding a design basis tornado missile strike without loss of capability. Because this violation was of very low safety significance and it was entered into the licensee's CAP as action request (AR) 01142976, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000266/2009002-01; 05000301/2009002-01).

In response, the licensee entered the issue into its CAP and wrote a POD to address operability. Additionally, once the determination was made that T-175A was operable but non-conforming, the licensee implemented a procedure change and added compensatory measures to take in the event that the vent line were to fail as a result of a tornado missile, while a permanent solution to the design deficiency was being developed.

## .2 Quarterly Partial System Walkdowns

### a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- Unit 2 CCW system;
- south service water header while the north service header was out-of-service; and
- 125-volt direct current - station batteries D-105 and D-106.

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, the FSAR, TS requirements, outstanding WOs, condition reports, and

the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked-down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved any equipment alignment related issues and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- fire zone 306: D-06 battery room;
- fire zone 307: D-05 battery room;
- fire zone 237: CCW heat exchanger room;
- fire zone 310: air compressor room;
- fire zone 321: D-305 swing battery room; and
- fire zone 324: nonsafety-related battery room D-205.

The inspectors reviewed the areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out-of-service, degraded, or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk and their potential to impact equipment which could initiate or mitigate a plant transient. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted six quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07T)

.1 Triennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed operability determinations, completed surveillances, vendor manual information, associated calculations, performance test results and cooler inspection results associated with the HX-105A/B primary auxiliary building (PAB) battery room coolers and the HX-015 D1-D8 containment fan coolers. These heat exchangers/coolers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions and their relatively low margin.

For the HX-105A/B PAB battery room coolers and the HX-015 D1-D8 containment fan coolers, the inspectors verified that testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling programs were adequate to ensure proper heat transfer. This was accomplished by verifying the test method used was consistent with accepted industry practices, or equivalent, the test conditions were consistent with the selected methodology, the test acceptance criteria were consistent with the design basis values, and results of heat exchanger performance testing. The inspectors also verified that the test results appropriately considered differences between testing conditions and design conditions, the frequency of testing based on trending of test results was sufficient to detect degradation prior to loss of heat removal capabilities below design basis values and test results considered test instrument inaccuracies and differences.

For the HX-105A/B PAB battery room coolers and the HX-015 D1-D8 containment fan coolers, the inspectors reviewed the methods and results of heat exchanger performance inspections. The inspectors verified the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected degradation trends and industry standards, the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards, and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

In addition, the inspectors verified the condition and operation of the HX-105A/B PAB battery room coolers and the HX-015 D1-D8 containment fan coolers were consistent with design assumptions in heat transfer calculations and as described in the FSAR. This included verification that the number of plugged tubes was within pre-established limits based on capacity and heat transfer assumptions. The inspectors verified the licensee evaluated the potential for water hammer and established adequate controls and operational limits to prevent heat exchanger degradation due to excessive flow induced vibration during operation. In addition, eddy current test reports and visual



inspection records were reviewed to determine the structural integrity of the heat exchanger.

The inspectors verified the performance of ultimate heat sinks and their subcomponents such as piping, intake screens, pumps, and valves by tests or other equivalent methods to ensure availability and accessibility to the in-plant cooling water systems.

The inspectors reviewed the licensee's performance testing of service water system and ultimate heat sink results. This included the review of the licensee's performance test results for key components and service water flow balance test results. In addition, the inspectors compared the flow balance results to system configuration and flow assumptions during design basis accident conditions. The inspectors also verified that the licensee ensured adequate isolation during design basis events, consistency between testing methodologies and design basis leakage rate assumptions, and proper performance of risk significant nonsafety-related functions.

The inspectors performed a system walkdown of the service water intake structure to verify the licensee's assessment on structural integrity and component functionality. This included the verification that licensee ensured proper functioning of traveling screens and strainers, and structural integrity of component mounts. In addition, the inspectors verified that service water pump bay silt accumulation was monitored, trended, and maintained at an acceptable level by the licensee, and that water level instruments were functional and routinely monitored. The inspectors also verified the licensee's ability to ensure functionality during adverse weather conditions.

In addition, the inspectors reviewed condition reports related to the heat exchangers/coolers and heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions. Documents reviewed are listed in the Attachment to this report.

These inspection activities constituted two heat sink inspection samples as defined in IP 71111.07-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On March 26, 2009, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator simulator training to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- clarity and formality of communications;

- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and training program objectives. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

.1 Unit 1 CCW Pumps

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the Unit 1, 1P-11B CCW pump.

The inspectors reviewed and independently verified the licensee's actions to address problems with system performance or condition in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

b. Findings

(1) January 1, 2009, 1P-11B CCW Pump Inboard Oil Leak

Introduction: The inspectors identified a finding of very low safety significance and associated NCV of TS 3.7.7, "Component Cooling Water System," for the failure to recognize that the Unit 1 CCW 1P-11B pump was inoperable because of an oil leak.

Description: On January 3, an auxiliary operator added a full bubbler of oil to the inboard bearing during rounds to address a low level condition. The oil addition was documented in station logs and the oil addition log, PC 94.1; however, a condition report was not written and the trend was not recognized by operations personnel. On January 5, an auxiliary operator added another bubbler of oil to the inboard bearing, updated the station logs and PC 94.1, and wrote a condition report documenting the fact that oil was required to be added twice in a two-day period. The immediate operability determination concluded the pump was operable and a POD was requested to be performed by engineering. Approximately four hours later, engineering personnel informed the shift manager that the pump was not able to support the 30-day mission time due to an oil leak of one drop every 40 minutes. Due to the location of the CCW pumps, oil could not be added to the inboard bearing following certain accidents due to the estimated high dose rates in the area post-accident; therefore, a bubbler of oil was required to last the entire 30 days to ensure pump operability.

Licensed operators entered TS action condition 3.7.7.a, which required, in part, that the pump be returned to operable status within 72 hours. The licensee initiated repairs to address leaking pipe connections on the inboard bearing bubbler and sight glass piping. The licensee took apart the inboard bearing piping and reassembled it, in addition to replacing the inboard oil drain plug. Following a two-hour post-maintenance test, the pump was declared operable. On January 7, the Assistant Operations Manager reinforced guidance that condition reports should be generated for safety-related oil additions.

On February 3, following additional issues associated with the inboard bearing oil leaks on the pump, the inspectors reviewed the maintenance history of the pump and identified that the licensee failed to initiate condition reports and assess pump operability on December 30, 2008, and January 1, 2009. The maintenance history revealed that the 1P-11B CCW pump was last worked in July 2007. Since that time, no oil additions were made to either the inboard or outboard pump bearings, which each had a bubbler that held 2.5 ounces of oil. The inspectors noted that the control room logs on December 30, 2008, documented that an auxiliary operator added a full bubbler of oil to the inboard bearing during rounds to address a low level condition. While the oil addition was documented in station logs and the oil addition log, PC 94.1; a condition report was not written. The inspectors noted that on January 1, an auxiliary operator again added a full bubbler of oil to the inboard bearing during rounds to address a low level condition. The oil addition was documented in station logs and the oil addition log, PC 94.1; however, a condition report was not written and the trend was not recognized by operations personnel.

Specifically, in February 2009, the inspectors questioned why the 1P-11B CCW pump had not been declared inoperable on January 1, due to the second oil addition, and why the licensee had not been pursuing a past operability and reportability assessment with

respect to those events. The licensee reviewed the inspectors' questions (in Technical Assessment for Reportability TAR 01145008) and concluded that the 1P-11B pump should have been declared inoperable on January 1, due to the oil leaks on the inboard bearing piping.

Analysis: The inspectors determined that the failure to recognize that the 1P-11B CCW pump was inoperable on January 1, was a performance deficiency. The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the CCW pump was degraded with an inboard bearing oil leak and may not have been able to fulfill the 30-day mission time of the pump.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The exposure time for this finding was the period January 1-5, 2009.

The Region III senior reactor analyst (SRA) assisted in evaluating the risk significance of this finding. Core damage frequency would be only impacted during events which require sump recirculation, since operators would not be able to add oil due to radiological conditions at the pump. The finding required a Phase 2 analysis since the finding potentially represented an actual loss of a single train for greater than its TS allowed outage time.

The SRA evaluated the Phase 2 loss of cooling accident worksheets impacted by this finding (small, medium, and large loss of coolant accidents, and stuck open pressurizer power operated relief valve worksheets). The small loss of coolant accident worksheet was the only worksheet showing this to be a potentially risk significant finding. The SRA continued with a more detailed Phase 3 analysis for the small loss of coolant accident.

The SRA used the Point Beach SPAR Model, Revision 3-Plus, Change 3.45. The SRA modeled CCW Pump 1P-11B as a failure to run event. Using an exposure time of four days, the delta core damage frequency was computed at  $1.5E-7$ . The dominant scenarios involved failures of the residual heat removal system and low pressure recirculation. External event and large early release frequency scenarios were determined to be of negligible risk. Therefore, the SRA concluded that the risk of this finding to be of very low significance.

The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution, CAP component, because personnel did not use a low threshold for identifying issues. Specifically, licensee personnel failed on December 30, 2008, January 1, 2009, and January 3, 2009, to enter the oil additions into the corrective action program which would have required a Senior Reactor Operator to screen the condition for operability. [P.1(a)]

Enforcement: Technical Specification 3.7.7, action condition A, requires, in part, that when one CCW pump is inoperable, the pump is restored to operable status within

72 hours. In addition, TS 3.7.7 action condition C, requires, in part, that if Condition A is not met, then the reactor is placed in Mode 3 in 6 hours and Mode 5 in 36 hours.

Contrary to the above, on January 1, 2009, the 1P-11B CCW pump should have been declared inoperable until January 5, following two additional oil additions, a period in excess of the 72-hour TS 3.7.7 action condition A. Because this violation was of very low safety significance and it was entered into the licensee's CAP as AR 01145008, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000266/2009002-02).

In response to this issue, the licensee performed an apparent cause evaluation in AR 01143313 that concluded that the establishment of standards, expectations, and risk awareness regarding oil additions to safety-related pumps was not adequately implemented and reinforced in the operations department. The licensee took prompt corrective actions to fix the equipment condition and developed several long-term corrective actions to address the apparent cause and extent of condition.

(2) January 27, 2009, 1P-11B CCW Pump Inboard Oil Leak

Introduction: The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion XVI for the failure to promptly correct a condition adverse to quality associated with an inboard oil leak on the 1P-11B CCW pump identified on January 27.

Description: The Unit 1 1P-11B CCW pump was last worked to address an inboard bearing leak on January 5. Following completion of the work, licensee personnel refilled the oil bubbler on January 5. At that time, engineering staff had established with operations personnel that the CCW pump had a 30-day mission time and therefore oil leak rates must not exceed the capacity of the 2.5 ounce oil bubbler.

On January 31, at 9:30 a.m., an auxiliary operator added a bubbler of oil to the 1P-11B CCW pump inboard bearing. The operator documented the oil addition in the station logs, updated the PC 94.1 oil addition log, and initiated a condition report. However, the subsequent POD failed to recognize the significance of the leakrate and the amount of oil that had been added. In addition, the POD incorrectly utilized a 2007 analysis, which implied that operations personnel could enter the area post-accident and also that credit could be taken for the manual addition of oil to the pump. Operations personnel took the pump out of service at approximately 3:40 p.m. and requested that maintenance repair the leaks on the inboard bearing bubbler piping, estimated as 1 drop/45-60 minutes, because of a concern that the leakrate may increase over time. Maintenance personnel took apart the inboard bearing piping and reassembled the piping with a new piping tee and drain plug. Following a five-minute post-maintenance test as documented in WO 361526, the licensee declared the pump operable. The licensee documented that at about 12:30 a.m. on February 1, the oil bubbler remained full, approximately 6 hours after CCW pump 1P-11B was returned to service.

On February 1, at 8:15 a.m., an auxiliary operator identified that the oil bubbler was again low, a station log entry was made, a condition report was written, and the 1P-11B CCW pump was declared inoperable. Maintenance was performed on the pump which included replacement of the inboard bearing and oil seals. The removed inboard pump seal was found hardened and brittle; in addition, cracks on the oil seal lip were identified.

On February 2, during the post-maintenance testing, engineering personnel identified a defect on the inboard pump bearing through vibration analysis and operations personnel identified an inboard seal leak rate of 1 drop every 40 seconds.

On February 2, pump disassembly was started with the assistance of a vendor. The as-found conditions identified included the following: 1) the oil seal was cocked both vertically and horizontally, and off-center; 2) discontinuities were noted in the bearing housing bore surrounding the lip seal; 3) a small abrasion was noted on the oil seal; 4) the bearing housing had excessive wear; and 5) there was insufficient clearance in the bearing housing bolt holes due to metal deformation. Following successful post-maintenance testing, the CCW pump was returned to service on February 4 at approximately 12:45 a.m.

On February 3, the inspectors reviewed the pump's maintenance history. The inspectors noted that one week earlier on January 27, a bubbler of oil was added to the pump, 22 days after being filled. While an entry was made in the station logs, the PC94.1 oil addition log was not updated and a condition report was not initially written. The inspectors noted, however, that the next oncoming operations shift recognized a condition report was not written and subsequently documented the condition. However, the condition report was written noting that it was for trending only. In addition, the POD documented the following:

"This AR is generated for the documentation and tracking of oil additions to safety-related pumps. Operability of this component is not in question. Last oil addition was recorded prior to repairs 1/5/09."

On January 29, the CAP had been screened by the Initial Screen Team as not a condition adverse to quality, severity level D (lowest level), and closed to trend. On January 30, the Management Review Committee changed the classification to a condition adverse to quality, severity level C, with a condition evaluation to engineering to review the trend within 30 days.

On February 3, the inspectors questioned why the condition report had not been properly evaluated for operability and prompt corrective actions to address the condition. Specifically, the pump had not been declared inoperable on January 27, due to a second oil addition within 22 days, 8 days under the 30-day mission time of the pump. The licensee had previously established clear expectations for allowable oil leak rates previously, as a result of the January 5<sup>th</sup> oil leaks. The licensee reviewed the inspectors' questions in TAR 01143325, and concluded that the 1P-11B pump was required to be declared inoperable on January 27, due to the oil leak present on the inboard pump bearing.

Analysis: The inspectors determined that the failure to recognize that the 1P-11B CCW pump was inoperable on January 27 was a performance deficiency. The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated December 4, 2008, because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the CCW pump was degraded with an inboard bearing oil leak and may not have been able to fulfill its 30-day mission time.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone, dated January 10, 2008. The exposure time for this finding was the period January 27 – February 4, 2009.

The Region III SRA assisted in evaluating the risk significance of this finding. Core damage frequency would be only impacted during events which require sump recirculation, since operators would not be able to add oil due to radiological conditions at the pump. The finding required a Phase 2 analysis since the finding potentially represented an actual loss of a single train for greater than its TS allowed outage time.

The SRA evaluated the Phase 2 loss of cooling accident worksheets impacted by this finding (small, medium, and large loss of coolant accidents, and stuck open pressurizer power operated relief valve worksheets). The small loss of coolant accident worksheet was the only worksheet showing this to be a potentially risk significant finding. The SRA continued with a more detailed Phase 3 analysis for the small loss of coolant accident.

The SRA used the Point Beach SPAR Model, Revision 3-Plus, Change 3.45. The SRA modeled CCW Pump 1P-11B as a failure to run event. Using an exposure time of 8 days, the delta core damage frequency was computed at  $3.0E-7$ . The dominant scenarios involved failures of the residual heat removal system and low pressure recirculation. External event and large early release frequency scenarios were determined to be of negligible risk. Therefore, the SRA concluded that the risk of this finding to be of very low significance.

The inspectors also determined that this finding has a cross-cutting aspect in the area of problem identification and resolution, CAP component, because personnel did not thoroughly evaluate the identified problem while classifying, prioritizing and evaluating for operability and reportability this condition adverse to quality. Specifically, licensee personnel did not thoroughly evaluate the condition adverse to quality associated with the 1P-11B CCW pump on January 27, such that the prompt corrective actions were appropriately prioritized and evaluated. [P.1(a)]

Enforcement: 10 CFR Part 50, Appendix B, Criterion XVI, requires, in part, that measures be established to assure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and non-conformances are promptly identified and corrected.

Contrary to the above, on January 27, 2009, licensee personnel had identified an oil leak on the Unit 1 1P-11B CCW pump inboard bearing, a condition adverse to quality, but failed to promptly correct the condition adverse to quality. Specifically, based on the leakrate identified in the condition report, the pump operability was in question; however, the pump was not taken out of service until four days later following another oil addition to the inboard bearing. Because this violation was of very low safety significance and it was entered into the licensee's CAP as AR 01143325, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000266/2009002-03).

In response to this issue, the licensee performed an apparent cause evaluation in AR 01143313 which concluded that the establishment of standards, expectation and risk

awareness regarding oil additions to safety-related pumps was not adequately implemented and reinforced in the operations department. The licensee took prompt corrective actions to fix the equipment condition and developed several long-term corrective actions to address the apparent cause and extent of condition. In addition, the licensee performed root cause evaluation 01143325 to evaluate the cause of the extended unavailability of the pump due to inboard oil leaks.

## .2 Routine Quarterly Evaluations

### a. Inspection Scope

The inspectors evaluated degraded performance issues involving the G-03 EDG, including preventive maintenance performed on the component.

The inspectors reviewed and independently verified the licensee's actions to address problems with system performance or condition in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

### b. Findings

No findings of significance were identified.

## 1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

### .1 Routine Quarterly Review

#### a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the planned maintenance and emergent work activities affecting risk-significant and safety-related equipment to verify that the appropriate risk assessments were performed prior to removing equipment for work during the weeks of:



- January 26;
- February 9;
- March 9;
- March 16; and
- March 23.

These work week activities were selected based on their potential risk-significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked-down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Documents reviewed are listed in the Attachment to this report.

These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- AR 01145238 – service water pump P-32E, inservice test failure;
- AR 01142986 – CCW pump 1P-11B oil addition;
- AR 01142976 – EDG building fuel oil system vents;
- AR 01132085 – EDG fuel oil storage tank level;
- AR 01143313 – CCW pump 1P-11B oil addition; and
- AR 01141653 – functionality assessment for control building temperatures

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and FSAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the

evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

These reviews constituted six samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the removal of the K-4B air compressor for the G-02 EDG temporary modification. The inspectors compared the temporary configuration changes and vendor system design documents against the design basis, the FSAR, and the TSs, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors performed field verifications to ensure that the modification was installed as directed; the modification operated as expected; that process monitoring adequately demonstrated that no degradation to system materials occurred; and that operation of the modification did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with vendor and operations personnel to ensure that the individuals were aware of expected actions in the event of a system failure or malfunction.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following Unit 1 post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- north service water header isolation work;
- 1P-11B inboard bearing housing work on January 31;
- 1P-11B inboard bearing housing work on February 4;
- 1P-11B work on March 9;
- K-4B repairs; and
- G-02 breaker to bus 2A05 repairs.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing; and test documentation was properly evaluated. The inspectors evaluated the activities against the TSs, the FSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing and design bases. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted six post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- IT 07B – service water pump P-32B test; (Inservice Testing—IST)
- Unit 2 containment tendon 5-year surveillance testing; (routine)
- TS-6 – Unit 2 Control Rod Exercise Test; (routine)
- CAMP-241 – EDGs G-03 and G-04 jacket water chemistry testing; (routine)
- OI-55 reactor coolant system leakrate calculation; (reactor coolant system leakage)
- IT 07E – service water pump P-32E test; (IST) and
- IT 07D – service water pump P-32D test. (IST)

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequencies were in accordance with TSs, procedures, the FSAR, and other applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of American Society of Mechanical Engineers Code Section XI, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted three routine surveillance testing samples, three inservice testing samples, and one reactor coolant system leakage sample, as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings of significance were identified.

## **Cornerstone: Emergency Preparedness**

### 1EP6 Drill Evaluation (71114.06)

#### .1 Drill and Exercise Performance Indicator

##### a. Inspection Scope

The inspectors observed two evolutions for licensed operators on March 12 and March 19, which required simulated emergency plan implementation by a licensee operations crew. These evolutions were included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also reviewed the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the CAP. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes two samples as defined in IP 71114.06-05.

##### b. Findings

No findings of significance were identified.

## **2. RADIATION SAFETY**

### **Cornerstone: Occupational Radiation Safety**

### 2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

#### .1 Inspection Planning and Identification of Instrumentation

##### a. Inspection Scope

The inspectors reviewed the licensee's FSAR to identify applicable radiation monitors associated with measuring transient high and very high radiation areas, including those intended for remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation that were used for job coverage of high radiation area work, including instruments for underwater surveys, portable and fixed area radiation monitors that were used to provide radiological information in various plant areas, and continuous air monitors that were used to assess airborne radiological conditions and work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent (CEDE). Whole body counters that were used to monitor for internal exposure and those radiation detection instruments that were used to conduct surveys for the release of personnel and equipment from the radiologically controlled area (RCA), including contamination monitors and portal monitors, were also identified.

This inspection constituted two samples as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.2 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed radiological instrumentation to determine if it had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm setpoints for selected instruments to determine whether they were established consistent with the FSAR or TSs, as applicable, and with industry practices and regulatory guidance. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records for the following radiation monitoring instrumentation and calibration equipment:

- Units 1 and 2 seal table area monitors;
- Units 1 and 2 post-accident sample line area monitors;
- C-59 panel area monitor;
- chemical volume and control system area monitor;
- spent fuel pool high range area monitor;
- Units 1 and 2 containment high-range radiation monitors;
- portal monitors at the RCA and protected area egresses;
- personnel contamination monitors at the RCA egress;
- instrument calibrators (and the associated instruments used to measure calibrator output);
- several portable survey instruments; and
- whole body counter.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors determined whether the licensee's actions would include a determination of the instruments' previous uses and the possible consequences of that use since the prior successful calibration. The inspectors also reviewed the results of the licensee's most recent 10 CFR Part 61 source term (radionuclide mix) evaluation to determine if the radiation sources that were used for instrument calibration and for instrument checks were representative of the plant source term.

The inspectors observed the licensee's use of the portable survey instrument calibration units, discussed calibrator output validation methods, and compared calibrator exposed readings with calculated/expected values. The inspectors evaluated compliance with licensee procedures while radiation protection (RP) personnel demonstrated the methods for performing source checks of portable survey instruments and source checks of personnel contamination and portal monitors.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

### .3 Problem Identification and Resolution

#### a. Inspection Scope

The inspectors reviewed licensee CAP documents and any Licensee Event Reports or special reports that involved personnel contamination monitor alarms due to personnel internal exposures to determine whether identified problems were entered into the CAP for resolution.

While no internal exposure with a CEDE greater than 50 millirem occurred since the last inspection in this area, the inspectors reviewed the licensee's methods for internal dose assessment to determine if affected personnel would be properly monitored using calibrated equipment and if the data would be analyzed and exposures properly assessed.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed CAP reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area, as applicable. Members of the RP staff were interviewed and corrective action documents were reviewed to determine whether follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;
- resolution of NCVs tracked in the corrective action system; and
- identification and implementation of effective corrective actions.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors determined if the licensee's self-assessment and audit activities completed for the approximate two-year period that preceded the inspection were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution, as applicable.

This inspection constituted one sample as defined in IP 71121.03-5.

#### b. Findings

No findings of significance were identified.

### .4 Radiation Protection Technician Instrument Use

#### a. Inspection Scope

The inspectors verified that calibrations for those survey instruments used to perform job coverage surveys and for those instruments currently designated for use had not lapsed.

The inspectors determined if response checks of portable survey instruments and checks of instruments used for unconditional release of materials and workers from the RCA were completed prior to instrument use, as required by the licensee's procedure. The inspectors also discussed instrument calibration methods and source response check practices with RP staff and observed staff demonstrate instrument source checks.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.5 Self-Contained Breathing Apparatus (SCBA) Maintenance/Inspection and Emergency Response Staff Qualifications

a. Inspection Scope

The inspectors reviewed the status and surveillance records of self-contained breathing apparatus (SCBAs) that were staged in the plant and ready-for-use and evaluated the licensee's capabilities for refilling and transporting SCBA air bottles to-and-from the control room and operations support center during emergency conditions. The inspectors determined if control room staff and other emergency response and RP personnel were trained, respirator fit tested, and medically certified to use SCBAs, including personal bottle change-out. Additionally, the inspectors reviewed SCBA qualification records for numerous members of the licensee's radiological emergency teams to determine if a sufficient number of staff were qualified to fulfill emergency response positions, consistent with the licensee's emergency plan and the requirements of 10 CFR 50.47.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed the qualification documentation for onsite, or as applicable, offsite contract personnel that performed maintenance on manufacturer designated vital SCBA components. The inspectors also reviewed vital component maintenance records for several SCBA units that were designated as ready-for-use, if applicable since the last inspection. The inspectors also evaluated, through record review and observations, if the required air cylinder hydrostatic testing was documented and current and if the Department of Transportation required retest air cylinder markings were in place for several randomly selected SCBA units and spare air bottles. The inspectors reviewed the onsite maintenance procedures governing vital component work, as applicable, including those for the low-pressure alarm and pressure-demand air regulator. The inspectors reviewed the licensee's maintenance procedures and the SCBA manufacturer's recommended practices to determine if there were any inconsistencies between them.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.



#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator (PI) Verification (71151)

###### .1 Data Submission Validation

###### a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the fourth quarter 2008 PIs for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

###### b. Findings

No findings of significance were identified.

###### .2 Unplanned Scrams per 7000 Critical Hours

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours PI for Units 1 and 2 for the first quarter 2008 through the fourth quarter 2008. To determine the accuracy of the PI data reported during those periods, the inspectors used PI definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline." The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for this period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two samples of the Unplanned Scrams per 7000 Critical Hours PI.

###### b. Findings

No findings of significance were identified.

###### .3 Unplanned Power Changes per 7000 Critical Hours

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Power Changes per 7000 Critical Hours PI for Units 1 and 2 for first quarter 2008 through the fourth quarter 2008. To determine the accuracy of the PI data reported during those periods, the inspectors used PI definitions and guidance contained in Revision 5 of NEI 99-02. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for this period to validate the

accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two samples of the Unplanned Power Changes per 7000 Critical Hours PI.

b. Findings

No findings of significance were identified.

.4 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for Units 1 and 2 for the first quarter 2008 through the fourth quarter 2008. To determine the accuracy of the PI data reported during those periods, the inspectors used PI definitions and guidance contained in Revision 5 of NEI 99-02. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports, and NRC integrated inspection reports for this period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two samples of the Unplanned Scrams with Complications.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Items Entered Into the CAP

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews and previous occurrence reviews were proper and adequate; and the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor

issues entered into the licensee's CAP as a result of the inspectors' observations are listed in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily CAP Reviews

a. Inspection Scope

To assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of July 1, 2008, through December 31, 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

The inspectors did note an apparent negative trend in the characterization of ARs characterized as either a condition adverse to quality or non-condition adverse to quality since the institution of the new fleet procedure in the second quarter of 2008. The licensee initiated AR 01141302 to assess the inspectors' observations.

This review constituted one semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-up Inspection: Review of Maintenance Performed on the Wrong Unit

Introduction

The inspectors reviewed root cause evaluation 01132408 and selected several corrective and follow-up actions resulting from a non-consequential wrong unit event that occurred during maintenance of the residual heat removal system, for a more in-depth review in accordance with inspection procedure requirements.

This review constituted one inspection sample.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the condition reports that documented the incident to verify that the licensee's identification of issues was accurate and timely, and that the consideration of extent-of-condition review, generic implications, common cause, and previous occurrences was adequate.

(2) Findings and Issues

No findings of significance were identified. No issues were identified.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed the root cause evaluation for condition report AR 01132408. Additionally, the inspectors assessed the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Findings and Issues

No findings of significance were identified. No issues were identified.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the licensee's implementation of corrective actions to determine if the licensee's corrective actions were effective. Additionally, the inspectors verified that established corrective actions by the licensee were appropriately focused to correct the problem.

(2) Findings and Issues

No findings of significance were identified. The inspectors noted that the corrective actions to prevent recurrence did not address the fact that maintenance personnel chose not to utilize human performance tools for the job of cleaning boric acid off a residual heat removal system second isolation valve. The inspectors also identified that the corrective action to prevent recurrence was to create and implement, on January 1, 2009, a signoff sticker to be placed on the front of a work package to be signed off upon verification of the proper unit and component prior to touching equipment. The actual sticker only required verification of the proper unit. In addition, a review of in-progress work activities the weeks of March 9 and 16 in the field by the inspectors identified that the sticker was not being used. A review of completed WOs revealed that less than 10 percent of the stickers were used for work that had been completed. The inspectors concluded that the corrective actions to prevent occurrence were not effective and were not implemented; however, no new instances of wrong unit or wrong equipment work had occurred since January 1. Condition Report 01145953 was written to document the inspectors' observations and develop corrective actions.

.5 Selected Issue Follow-up Inspection: Review of Service Water Pump Instrumentation Deficiencies

Introduction

The inspectors reviewed apparent cause evaluation 01140211 and selected several corrective and follow-up actions resulting from service water system testing inaccuracies for a more in-depth review in accordance with inspection procedure requirements.

This review constituted one inspection sample.

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the condition reports which documented the incident to verify that the licensee's identification of issues was accurate and timely, and that the consideration of extent-of-condition review, generic implications, common cause, and previous occurrences was adequate.

(2) Findings and Issues

No findings of significance were identified. No issues were identified.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed apparent cause evaluation 01140211. Additionally, the inspectors assessed the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

(2) Findings and Issues

No findings of significance were identified. No issues were identified.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the licensee's implementation of corrective actions to determine if the licensee's corrective actions were effective. Additionally, the inspectors verified that established corrective actions by the licensee were appropriately focused to correct the problem.

(2) Findings and Issues

No findings of significance were identified. The inspectors noted that a corrective action to clarify procedure steps for the installation of a pitot tube in the service water header was not effective. Specifically, observations of actual service water testing activities in the field between two different operations crews resulted in different orientations of the pitot tube and consequently different flow measurements. The licensee initiated AR 01145490 and corrected the procedure guidance to assure a more accurate, repeatable flow measurement.

4OA5 Other Activities

.1 (Open) Unresolved Item (URI) 05000266/2009002-04: Detection of Large Gas Voids in Residual Heat Removal System Common Shutdown Cooling Suction Line.

In response to Generic Letter 2008-01 the licensee performed inspections of the emergency core cooling system and shutdown cooling systems to verify that gas accumulations in those systems were appropriately managed. By letter dated February 11, 2009, the licensee informed the NRC of the discovery of a large gas void in the common shutdown cooling suction line for both trains of residual heat removal. This unresolved item is being opened for the inspectors to evaluate the significance and circumstances surrounding the discovery of this large void at the licensee identified locations IC-1-RH-S01 and IC-1-RH-S04.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On April 8, 2009, the inspectors presented the inspection results to Mr. J. Bjorseth and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

##### .2 Interim Exit Meetings

- On January 16, the Occupational Radiation Safety radiation monitoring instrumentation program inspection results were presented to Mr. L. Meyer and other members of the licensee staff; and
- On February 27, the Triennial Review of Heat Sink Performance inspection results were presented to Mr. L. Meyer, and other members of the licensee staff.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

R. Amundson, General Supervisor Operations Training  
R. Bardo, ISI Program Engineer  
J. Bjorseth, Plant Manager  
D. Craine, Radiation Protection General Supervisor  
D. Farrell, Radiation Protection Manager  
F. Flentje, Regulatory Affairs Supervisor  
R. Freeman, Emergency Preparedness Manager  
D. Frey, Chemistry Manager  
S. Forsha, Reactor Vessel Program Engineer  
D. Frey, Chemistry Manager  
J. Hofstra, Boric Acid Program Engineer  
P. Holzman, GL 89-13 Program Manager  
B. Jensen, NDE Level III  
C. Jilek, Site Maintenance Rule Coordinator  
K. Johansen, Environmental Specialist  
J. Keltner, Steam Generator Program Engineer  
K. Locke, Regulatory Assurance Representative  
L. Meyer, Site Vice-President

#### Nuclear Regulatory Commission

J. Poole, Point Beach Project Manager, Office of Nuclear Reactor Regulations  
M. Kunowski, Chief, Division of Reactor Projects, Branch 5



## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened and Closed

05000266/2009002-01; 05000301/2009002-01	NCV	Inadequate Design of Diesel Fuel Oil Tank Vent for Tornado Protection (Section 1R04.1)
05000266/2009002-02	NCV	Failure to Recognize Unit 1 Component Cooling Water Pump Was Inoperable on January 1, 2009 (Section 1R12.1.b.(1))
05000266/2009002-03	NCV	Failure to Promptly Correct Component Cooling Water Pump Oil Leak on January 27, 2009 (Section 1R12.1.b.(2))

### Opened

05000266/2009002-04	URI	Generic Letter 2008-01 Discovery of Gas Void in Residual Heat Removal Common Suction Line for Shutdown Cooling (Section 4OA5.1)
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## LIST OF DOCUMENTS REVIEWED

The following is a partial 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 or 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.

### 1R01 Adverse Weather Protection

- AR 01129702; Rainwater Flood in Unit 1 Façade Building
- Flooding Design Basis Documents
- NP 1.9.6, Plant Cleanliness and Storage, Revision 26
- PC 99, Tornado Hazards Inspection Checklist, Revisions 3 and 4

### 1R04 Equipment Alignment

- AR 01146097; Usage of Glass Bulb Thermometers in Station Batteries
- AR 01142976; Tornado Missile Impact on Diesel Generator Building
- PBNP Diesel Project Design Submittal; dated September 21, 1993
- Wisconsin Electric Power Company Diesel Generator Addition Project – Regulatory Guides Compliance Summary; dated June 11, 1993
- 0-SOP-SW-106; North Service Water Pump Header Isolation
- 0-SOP-DC-005; 125VDC System, Swing Buses & Components; Revision 12
- AOP-13C; Severe Weather Conditions; Revision 21
- P&ID; BECH 6118 M-219 Sheets 2 and 3; Fuel Oil System Diesel Generator Building
- CL 6C; Radwaste Component Cooling Water; Revision 9
- 2-CL-CC-001; Component Cooling Unit 2; Revision 11
- P&ID; WE PBM-230; Radwaste Comp. Cooling Wtr.
- AOP-9B Unit 2; Component Cooling System Malfunction; Revision 21

### 1R05 Fire Protection

- Fire Hazards Analysis Report; Revision 6
- NP 1.9.9; Transient Combustible Control
- NP 1.9.13; Ignition Control Procedure; Revision 13

### 1R07 Heat Sink Performance

- WO 357369; Service Water System Strainer and Flushing; dated February 9, 2009
- WO 356734; Service Water System Strainer and Flushing; dated February 14, 2009
- WO 355972; Service Water System Strainer and Flushing; dated January 21, 2009
- WO 356934; Service Water to Auxiliary Feedwater Pump Line Flush Monthly; dated February 18, 2009
- WO 303028; Chemical Treatment of Service Water for Zebra Mussels; dated September 7, 2007
- WO 217211; 2SW-2880, Unit 2 Turbine Bldg Service Water Inlet; dated October 26, 2006

-WO 317538; 2SW-2880, Unit 2 Turbine Bldg Service Water Inlet; dated April 6, 2008

-WO 279088; 1SW-2880, Unit 1 Turbine Bldg Service Water Inlet; dated April 24, 2007

-WO 339098; 1SW-2880, Unit 1 Turbine Bldg Service Water Inlet; dated October 7, 2008

-WO 357040; Containment Accident Recirculation Fan-Cooler Units (Monthly) Unit 2; dated February 17, 2009

-WO 356035; Containment Accident Recirculation Fan-Cooler Units (Monthly) Unit 2; dated January 22, 2009

-WO 356410; Containment Accident Recirculation Fan-Cooler Units (Monthly) Unit 1; dated February 4, 2009

-WO 355516; Containment Accident Recirculation Fan-Cooler Units (Monthly) Unit 1; dated January 6, 2009

-WO 356337; Monthly Ventilation Checks PAB, Containment, SSB; dated January 30, 2009

-WO 355165; Monthly Ventilation Checks PAB, Containment, SSB; dated December 30, 2008

-WO 363904; Service Water Pump (Quarterly); dated January 9, 2009

-WO 365305; Service Water Pump (Quarterly); dated January 12, 2009

-WO 363905; Service Water Pump (Quarterly); dated January 13, 2009

-WO 353470; Service Water Pump (Quarterly); dated November 21, 2008

-WO 351073; Service Water Valves (Quarterly); dated August 25, 2008

-WO 346865; Zebra Mussel Report; dated May 7, 2008

-WO 274609; Zebra Mussel Report; dated June 17, 2007

-WO 350372; Lake Water Intake Surge Chamber Level Channels; dated July 4, 2008

-WO 294300; Lake Water Intake Surge Chamber Level Channels; dated January 30, 2007

-WO 334533; HX105B Inspection; dated January 30, 2009

-WO 347348; HX105D1-D8 Inspection; dated October 24, 2008

-WO 310742; HX105D1-D8 Inspection; dated April 10, 2007

-ROV Inspection of the Raw Water Intake Pipeline Servicing Unit 2; dated May 27, 2008

-ROV Inspection of the Raw Water Intake Pipeline Servicing Unit 1; dated November 6, 2008

-N-94-064; VNBI [HX-105A/B] Service Water Flow vs. Temperature Requirement; dated July 28, 2008

-2002-0003; Service Water System Design Basis (Calculation); dated December 14, 2007

-98-0172; Containment Fan Cooler Service Water Acceptance Criteria; dated July 24, 2007

-FAI/97-60; Containment Fan Cooler Analysis in Response to NRC GL-96-06; dated February 8, 2002

-AR 01141803; HX-105B Fouled Beyond Design & Mussel Issues; dated January 5, 2009

-AR 01117935; SW System Unable to Support VNBI Under Worst Case Conditions; dated December 10, 2007

-AR 01144170; Configuration Control of SR HX Tube Plugging; dated February 12, 2009

- AR 01058442; Condition of 2A CFC Indicates Expansion in CFC Cleaning Need dated October 29, 2006
- AR 01145083; 2009 UHS – Missed Opportunity; dated February 26, 2009

#### 1R11 Licensed Operator Requalification Program

- PBN LOC 09B 001E; As-found licensed operator requalification

#### 1R12 Maintenance Rule Implementation

- AR 01143325; Unit 1 1P-11B Component Cooling Water Pump Oil Leak Extends Unavailability
- AR 01145008; Questions Regarding Past Operability of 1P-11B CCW Pump
- AR 01142903; Component Cooling Water Pump High Unavailability
- AR 01143313; Evaluate Organizational Issues Associated With Component Cooling Water Pump Failures
- AR 01142986; 1P-11B Oil Addition
- PBF-2031; Revision 89; operator logs
- WO 361526; 1P-11B component cooling water pump
- RMP 9006-5; component cooling water pump overhaul; revision 16
- Maintenance Rule Performance Criteria; Component Cooling Water Pump
- Maintenance Rule Performance Criteria; Emergency Diesel Generator
- RMP 9043-33; Emergency Diesel Generator G-03 Mechanical Inspection; Revision 14
- AR 00783581; Three G-03 Emergency Diesel Temperature Switches Found Failed
- AR 01143871; During the calibration of TS-3312A, we found it broken
- AR 01143869; During the calibration of TS-3342A, we found it broken
- AR 01143866; During the calibration of TS-3348B, the switch broke
- AR 01143824; Kline [sic] Valve Packing Nut Over Torqued
- EMD Turbocharged Engine Maintenance Manual; 645E4C/F4B; Third Edition
- WO 00313395; G-03 Cylinder Test Cocks Leak Oil; dated February 10, 2009

#### 1R13 Maintenance Risk Assessments and Emergent Work Control

- NP 10.3.6; Shutdown Safety Review and Safety Assessment; Revisions 25, 26, 27, and 28
- Safety Monitor Calculation Reports for Units 1 and 2 for Applicable Work Weeks
- Work Week Execution Schedules for the Applicable Work Weeks
- Operator Logs for the Applicable Work Weeks
- NP 10.3.7; Online Safety Assessment; Revision 19

#### 1R15 Operability Evaluations

- AR 01141653; Calculation Predicts Post-Accident Vital Area Room Temperature
- Calculation 2005-0054; Control Building GOTHIC Temperature Calculation
- AR 01143325; Addition of Oil to 1P-11B
- AR 01141771; Increased Component Cooling Water Pump Oil Leakage
- AR 01145238; Service Water Pump P-32E, Inservice Test Failure
- AR 01142986; Component Cooling Water Pump 1P-11B Oil Addition
- AR 01142976; Emergency Diesel Generator Building Fuel Oil System Vents
- AR 01132085; Emergency Diesel Generator Fuel Oil Storage Tank Level
- AR 01143313; Component Cooling Water Pump 1P-11B Oil Addition
- AR 01141653; Functionality Assessment For Control Building Temperatures

- AR 01144179; TS Bases 3.8.3 CLB Discrepancy
- Tank Level Book-58; Diesel Fuel Oil Storage Tank T-175A/B; Revision 0

#### 1R18 Plant Modifications

- Temporary Alteration No. 9187; K4B Pressure Switch (Control Air to Lister Diesel)

#### 1R19 Post-Maintenance Testing

- TS 82; Emergency Diesel Generator G-02 Monthly Test; Revision 77
- NP 10.2.7; Post-Maintenance/Return to Service Testing
- PBF-9809; Post-Maintenance Test Matrix; Revision 5
- IT-12; Component Cooling Water Pumps and Valves; Revision 35
- WO 361526; 1P-11B Component Cooling Water Pump
- 0-SOP-SW-102; North Service Water Header Isolation and Restoration; Revision 3
- 0-SOP-SW-102; North Service Water Header Isolation and Restoration; Revision 3
- 0-SOP-IA-001; Operation of Instrument Air Compressors

#### 1R22 Surveillance Testing

- SCR 2009-006; Analysis of P-32F Service Water Pump Performance
- OI-70; Service Water System Operation; Revisions 56 and 57
- AR 01145238; P-32E Service Water Pump Failure
- CIM 05130000; Delta-Tap Installation and Maintenance; dated January 25, 1990
- IT-07B; Service Water Pump P-32B Quarterly IST
- IT-07E; Service Water Pump P-32E Quarterly IST
- AR 01140211; Three Service Water Pumps Enter Alert on Flow
- AR 01140867; South Service Water Pumps Show Decline in Flow
- PCR 01141800; Revision to OI-70
- SCR 2009-003; Analysis of P-32E Service Water Pump
- SCR 2009-005; Analysis of P-32D Service Water Pump
- SCR 2009-0035; Incorporation of EC 13337 Into IST Acceptance Criteria Associated with P-32E Service Water Pump
- AR 01141078; Water Pooling at Base of P-32C Service Water Pump
- EC 13337; Expanded Service Water Sensitivity Study
- IT-07D; Service Water Pump P-32D Quarterly IST; Revision 22
- IT-07F; Service Water Pump P-32F Quarterly IST; Revision 23
- IT-07B; Service Water Pump P-32B Quarterly IST; Revision 25
- AR 01145475; Service Water Pump Operational Restrictions Not Incorporated
- NDE-761; Visual Examination of Concrete Containment Components; Revision 6
- CAMP 241; Analysis and Control of Diesel and Chilled Water Cooling Systems Corrosion Inhibitor; Revisions 13 and 14
- Chemistry Database Sample Results for G-03 and G-04 Ethylene Glycol Expansion Tanks; Date Range 2007-2009
- TS 6; Rod Exercise Test Unit 2; Performed February 20, 2009

#### 1EP6 Drill Evaluation

- PBN LOC 09B 001E; As-Found Licensed Operator Requalification
- Drill and performance indicator paperwork for March 12 and 19, 2009.

## 2OS3 Radiation Monitoring Instrumentation and Protective Equipment

- HPCAL 1.1; Radiation Protection Instrument Calibration, Repair and Response Checks; Revision 21
- HPIP 7.52.4; PM-7 Personnel Monitor Checks; Revision 2
- HPIP 7.54; Source Check of the GEM-5 Whole Body Contamination Monitor; Revision 2
- HPIP 7.53; Personnel Contamination Monitor (ARGOS-5WBAB) Source Response Check; Revision 1
- HPIP 2.40; Portable Countrate Instrument Operation; Revision 1
- HPIP 2.1.1; Response Checks of Portable Survey Instruments; Revision 10 Program; Revision 5
- Instrument Calibration Data Sheet for PM-7, Serial No. A112, dated May 9, 2008 & November 24, 2008; Serial No. A113, dated May 9, 2008; Serial No. A114, dated August 20, 2008
- Instrument Calibration Data Sheet for PCM-2, Serial No. A045, dated August 19, 2008
- Instrument Calibration Worksheet for ARGOS 5AB, Serial No. 0712-048, dated February 5, 2008; Serial No. 0712-047, dated February 2, 2008; Serial No. 0712-049, dated February 2, 2008
- Instrument Calibration Worksheet for GEM-5, Serial No. 0712-117, dated February 5, 2008; Serial No. 0712-118, dated February 22, 2008
- Calibration Data Sheet for MGP AMP-100, Serial No. 479289, dated November 7, 2008
- Calibration Data Sheet for Eberline AMS-4, Serial No. A020, dated October 19, 2008
- Calibration Data Sheet for Eberline SAC-4, Serial No. 7175, dated May 22, 2008
- HPCAL 1.38; Calibration of the Portable Neutron Survey Instrument ASP-1; dated March 6, 2008
- HPCAL 2.15; Small Articles Monitor Type SAM-9/11 Calibration; dated February 7, 2008
- HPCAL 3.11; Containment High Range Detector Response Check and IICP 13.017; Containment High Range Radiation Monitoring System Channels 1/2 RE-126, 1/2 RE-127, and 1/2 RE-128 Calibration; dated various periods in 2007 and 2008
- HPCAL 3.2; Area Monitor Calibration Procedure DA1-1 and DA1-6 Detector Assemblies; Channel Nos. 1/2 RE-107 and 1/2 RE-109; dated various periods in 2007 and 2008
- HPCAL 3.3; Area Monitor Calibration Procedure DA1-4 and DA1-5 Detector Assemblies; Channel Nos. RE-111, RE-114, and RE-135; dated various periods in 2007 and 2008
- Radcal Corporation Calibration Report for Model 2026 Radiation Monitor with Model 20X5-3, 20X5-60 and 20X5-1800 Ion Chambers; dated June 9, 2008
- J.L. Shepherd Instrument Calibrator Units HPTI-2 & HPTI-1 Verification and Validation Data; dated August 16-17, 2007 and January 6-7, 2009
- Calibration of the Canberra Fastscan Whole Body Count System at the Point Beach Nuclear Plant; Report date February 4, 2008
- HPIP 1.74; Operation of the Canberra Whole Body Counter; Revision 8
- Report of Evaluation of Isotopic Mixture and RP Programs Impact; dated January 9, 2009
- AR 01139212; Monthly Respirator Inspections; dated November 5, 2008

- AR 01133661; Plant PCMs Maintained Poorly; dated August 14, 2008
- AR 01118213; Audit SCBA Maintenance Vendor; dated December 17, 2007
- AR 01126665; Teletector Under Responding; dated April 25, 2008
- AR 01128910; GEM, PM-7 and Gamma-40 Discrepancies; dated May 30, 2008
- Report of Snap-Shot Self-Assessment for IP 71121.03; dated November 30, 2007
- AR 01142287; HPCL 3.11 Source Acceptance Criteria; dated January 14, 2009
- AR 01141245; Obsolete Electronic Dosimetry; dated December 17, 2008
- Respirator Qualification and Fit Testing Matrix for Emergency Response Organization Staff; dated January 15, 2009
- PC 68; Operation and Check of the Baron II High Pressure Breathing Air System; Air Quality Grade Surveillance Tests; dated August 18, 2008 and November 3, 2008
- BF-4077b; SCBA Mask Inspection & Maintenance Record; January 2008 – December 2008
- PBF-4077c; SCBA Inspection & Maintenance Record; January 2008 – December 2008
- HPIP 4.51.4; Scott Self-Contained Breathing Apparatus; Revision 10
- Lesson Plan No. PB-SHE-004-SCRL; Revision 1; Respiratory Protection - SCBA Operation
- PC 75 Part 1; Monthly and Turnaround Maintenance for the Scott 4.5 Self-Contained Breathing Apparatus; Surveillance Records for January 2008 – December 2008

#### 40A1 Performance Indicator Verification

- Licensee Performance Indicator Data for 2008, including data submitted to the NRC, operator logs and licensee performance indicators

#### 40A2 Problem Identification and Resolution

- AR 01132408; Wrong Unit Event – Boric Acid Cleaned Off Opposite Unit Valve, Packing Adjusted, and Valve Cycled
- AR 01145953; NRC Identifies Corrective Actions To Prevent Occurrence Not Effectively Implemented
- AR 01146575; Evaluate the completion of the Assignment
- AR 01141835; Service Water Pump Decreased Operating Life
- AR01145490; Service Water Pitot Tube use is not Optimized
- AR 01145238; Service Water Pump P-32E, IST Failure
- AR 01140867; South Service Water Header Pumps in Decline
- AR 01141302; CAP Screen Team Issues

#### 40A5 Other Activities

- License correspondence to the NRC dated October 14, 2008, entitled Nine-month Response to NRC Generic Letter 2008-01
- License correspondence to the NRC dated February 11, 2008, entitled Nine-month Supplemental Response to NRC Generic Letter 2008-01

## LIST OF ACRONYMS USED

AC	Alternating Current
AR	Action Request
CAP	Corrective Action Program
CCW	Component Cooling Water
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
FOST	Fuel Oil Storage Tank
FSAR	Final Safety Analysis Report
GDC	General Design Criteria
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISI	Inservice Inspection
IST	Inservice Testing
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PAB	Primary Auxiliary Building
PI	Performance Indicator
POD	Prompt Operability Determination
RCA	Radiologically Controlled Area
RP	Radiation Protection
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SRP	Standard Review Plan
TAR	Technical Assessment for Reportability
TS	Technical Specification
UHS	Ultimate Heat Sink
URI	Unresolved Item
WO	Work Order