



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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LISLE, IL 60532-4352

August 1, 2016

Mr. Robert Coffey  
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 05000266/2016002; 05000301/2016002**

Dear Mr. Coffey:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Point Beach Nuclear Plant, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on July 12, 2016, with Mr. D. DeBoer and other members of your staff.

Based on the results of this inspection, one self-revealed finding and four NRC-identified findings were evaluated under the risk significance determination process as having very low safety significance (green). The NRC has also determined that four violations are associated with these issues. These violations are being treated as Non-Cited Violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy. These NCVs are described in the subject inspection report.

If you contest the violations or significance of these NCVs, 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 copies to: (1) the Regional Administrator, Region III; (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector at the Point Beach Nuclear Plant.

In addition, if you disagree with the cross-cutting aspect assigned to 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 the Point Beach Nuclear Plant.

R. Coffey

- 2 -

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records System (PARS) component of the NRC's Agencywide Documents Access and Management 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/**

Jamnes Cameron, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure:  
IR 05000266/2016002; 05000301/2016002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000266; 05000301  
License Nos: DPR-24; DPR-27

Report No: 05000266/2016002; 05000301/2016002

Licensee: NextEra Energy Point Beach, LLC

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: Two Rivers, WI

Dates: April 1, 2016 through June 30, 2016

Inspectors: D. Oliver, Senior Resident Inspector  
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Approved by: J. Cameron, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

|   |    |
|---|----|
| SUMMARY .....   | 2  |
| REPORT DETAILS .....  | 6  |
| Summary of Plant Status.....  | 6  |
| 1. REACTOR SAFETY .....   | 6  |
| 1R01 Adverse Weather Protection (71111.01) .....                            | 6  |
| 1R04 Equipment Alignment (71111.04).....                                    | 7  |
| 1R05 Fire Protection (71111.05).....  | 8  |
| 1R06 Flooding (71111.06) .....  | 12 |
| 1R07 Heat Sink Performance (71111.07T).....                                 | 15 |
| 1R11 Licensed Operator Requalification Program (71111.11) .....             | 16 |
| 1R12 Maintenance Effectiveness (71111.12) .....                             | 17 |
| 1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)..... | 19 |
| 1R15 Operability Determinations and Functional Assessments (71111.15).....  | 20 |
| 1R19 Post-Maintenance Testing (71111.19) .....                              | 20 |
| 1R20 Outage Activities (71111.20) .....                                     | 21 |
| 1R22 Surveillance Testing (71111.22).....                                   | 28 |
| 4. OTHER ACTIVITIES .....   | 30 |
| 4OA1 Performance Indicator Verification (71151).....                        | 30 |
| 4OA2 Identification and Resolution of Problems (71152).....                 | 30 |
| 4OA6 Management Meetings .....  | 35 |
| SUPPLEMENTAL INFORMATION .....  | 1  |
| Key Points of Contact.....  | 1  |
| List of Items Opened, Closed, and Discussed.....                            | 2  |
| List of Documents Reviewed .....  | 3  |
| List of Acronyms Used .....   | 19 |

## SUMMARY

Inspection Report 05000266/2016002, 05000301/2016002; 04/01/2016 – 06/30/2016; Point Beach Nuclear Plant, Units 1 & 2; Fire Protection, Flooding, and Outage Activities.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Five Green findings were identified by the inspectors. Four of these findings involved Non-Cited Violations (NCVs) of the U.S. Nuclear Regulatory Commission (NRC) requirements. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated February 2014.

### Cornerstone: Initiating Events

Green. A finding of very low safety significance and associated NCV of license condition 4.F was identified by the inspectors for the licensee's failure to conduct required fire watch inspections in accordance with the licensee's Fire Protection Program requirements. Specifically, while conducting fire protection walkdowns of both unit's residual heat removal (RHR) pipeway and heat exchanger rooms, the inspectors discovered numerous transient combustible items in areas that the licensee had controlled using tamper seals on the entrances in lieu of physical entry. The licensee's corrective actions included documenting and quantifying the removal of the items from the zones and additional actions to perform additional evaluation of the fire zones.

The finding was determined to be more than minor because the failure to conduct the required fire watch inspections was associated with the Initiating Events cornerstone attribute of Protection Against External Events (Fire) and affected the cornerstone objective of preventing undesirable consequences (i.e., core damage). Specifically, the failure to conduct the required fire watch inspections or meet the alternate measures specified by the licensee's engineers, allowed unanalyzed transient combustibles and ignition sources to be present in fire zones that contained both trains of both unit's RHR pumps, heat exchangers and associated equipment. The inspectors determined the finding could be evaluated in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Table 2, the inspectors determined the finding affected the Mitigating Systems cornerstone. The finding degraded fire protection defense-in-depth strategies, and the inspectors determined, using Table 3, that it could be evaluated using Appendix F, "Fire Protection Significance Determination Process." The inspectors screened the issue under the Phase 1 Screening Question 1.3.1-A, and determined that the finding was of very low safety-significance (Green), because the inspectors determined that the impact of a fire would not prevent either reactor from reaching and maintaining safe shutdown (hot). This finding has a cross-cutting aspect of Bases for Decisions (H.10), in the area of human performance, because the licensee's leadership did not ensure that the bases for operational and organizational decisions are communicated in a timely manner. Specifically, the licensee did not periodically verify the understanding of the individuals assigned to fire watches, in particular, that the relief from physical entry and

application of a tamper seal required a thorough tour of the zones following any entry into those fire zones. (Section 1R05)

Green. A finding of very low safety significance and associated NCV's of TS 3.8.1, "AC Sources-Operating" and TS 3.8.2, "AC Sources-Shutdown," were self-revealed for the licensee's failure to follow procedure RMP 9056-9B, "1X-03, Protective Relay Calibration and Testing." Specifically, a wiring error in the 1X-03 connection box, which occurred in 2013, caused the 1X-03 transformer's differential protection circuitry to lockout the transformer at current levels below the design protection values. The licensee's corrective actions included correcting the improper wiring in the 1X-03 connection box and evaluating other work performed by the same vendor during that timeframe.

The inspectors determined that the finding was more than minor because it was associated with the Initiating Events cornerstone attribute of Equipment Performance and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the lockout of 1X-03 caused a loss of one of the licensee's offsite power lines and also caused a loss of power to multiple station battery chargers placing Unit 2 into limiting condition for operation (LCO) 3.0.3. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 1, Initiating Events Screening Questions, dated June 19, 2012. The inspectors answered "Yes" to the Support System Initiators question; therefore, a Detailed Risk Evaluation was required. Based on the conclusions in the Detailed Risk Evaluation, the SRA determined that the finding was of very low safety significance (Green). This finding has a cross-cutting aspect of Avoid Complacency (H.12), in the area of Human Performance, for failing to implement appropriate error reduction tools. Specifically, the incorrectly performed procedure step, in RMP 9056-9B, clearly specified which terminal point to land the wires on, the terminal points were clearly labeled, and the step required a concurrent verification; however, even with those barriers in place, the task performers still landed the wires on the wrong location. (Section 1R20.b(3))

### **Cornerstone: Mitigating Systems**

Green. 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 maintain emergency diesel generator (EDG) fuel oil transfer pump safety-related cables in an environment for which they were designed. Specifically, the licensee allowed the safety-related cables to be submerged in water, which was outside of their design, in manhole Z-066B. The licensee's corrective actions included pumping the water out of the manholes, repairing the failed sump pump, level switch, and alarm circuit; and performing an engineering evaluation to quantify the level of degradation as a result of the submergence.

The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent

undesirable consequences. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," issued on June 19, 2012. Specifically, the inspectors used IMC 0609 Appendix A "SDP for Findings At-Power," issued June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions" to screen the finding. The finding screened as of very low safety significance (Green) because the inspectors answered "Yes" to the question "does the SSC maintain its operability or functionality." Specifically, the submergence of the G-01 and G-02 EDG fuel oil transfer pump cables did not render the transfer pumps inoperable. This finding has a cross-cutting aspect Evaluation (P.2) in the area of problem identification and resolution, because the licensee did not thoroughly evaluate problems to ensure that resolutions address causes and extent of conditions, commensurate with their safety significance. Specifically the licensee failed to thoroughly investigate and prioritize the failure of the manhole alarm and pumping system according to the safety significance of the cables contained within the manholes which led to prolonged and unevaluated submergence of the cables. (Section 1R06)

### **Cornerstone: Barrier Integrity**

Green. A finding of very low safety significance and associated NCV of Technical Specification 3.0.4 was identified by the inspectors for the licensee's failure to follow procedure OP 1A, "Cold Shutdown to Hot Standby Unit 1" and checklist CL 2C, "Mode 5 to Mode 4 Checklist." Specifically, the licensee entered Mode 4 from Mode 5 without meeting the requirements of LCO 3.0.4 for entering a Mode when an applicable LCO is not met. The licensee had not met LCO 3.6.6 because the control switches for two out of the required four containment accident recirculation fans were in their pullout position instead of the required automatic position. Corrective actions for this event included restoration of accident cooler fan control switches to automatic. Additional corrective actions included: performance of an apparent cause evaluation; changes to the licensee's ORT 3 test procedures to restore accident fan cooler switches after completion of testing; updating OP 1A to include performance of a control room shift turnover checklist prior to changing modes; and planned enhancements to CL 2 series procedures to strengthen a note on the responsibility of the SRO when ensuring operability of LCOs.

The inspectors determined that the finding was more than minor because it was associated with the Barrier Integrity cornerstone attribute of Human Performance and affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to follow procedures OP 1A and CL 2C caused the licensee to unknowingly operate with multiple containment accident recirculation fans inoperable, which were required in Mode 4. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," Exhibit 4, Barrier Integrity Screening Questions, dated May 9, 2014. The inspectors answered "no" to the Containment Barrier Screening Questions and determined the finding had very low safety significance (Green). This finding has a cross-cutting aspect of Challenge the Unknown (H.11), in the area of Human Performance, for failing to stop when faced with uncertain conditions.

Specifically, when the licensee assessed the illuminated Safeguards Equipment Locked Off alarm, during their control board walk down, they confirmed that the safety injection pump control switch was in pullout and was a reason for the alarm to actuate; however, they failed to confirm that other inputs to the alarm were also not valid. (Section 1R20.(1))

Green. A finding of very low safety significance was identified by the inspectors, for the licensee's failure to follow procedure REI 26.0, "Fuel/Insert/Component Movement Planning." Specifically, the licensee failed to follow procedure REI 26.0, Step 5.5.7.b, which verified that the licensee would not place fuel assemblies with cooling times less than 295 days into spent fuel pool rack foot locations. The licensee's corrective actions included completing additional spent fuel moves, which placed the spent fuel pool into an appropriate configuration.

The inspectors determined that the finding was more than minor, because, if left uncorrected, it had the potential to become a more significant safety concern. Specifically, if the inspectors had not questioned the licensee about spent fuel pool rack foot locations, the spent fuel pool would have remained in an incorrect configuration. The inspectors concluded this finding was associated with the Barrier Integrity cornerstone. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix L, "B.5.b Significance Determination Process", "Table 2 – Significance Characterization," The inspectors determined that the finding did not meet the criteria in Table 2 for a Greater-Than-Green significance; therefore, the finding was of very low safety significance (Green). This finding has a cross-cutting aspect of Avoid Complacency (H.12), in the area of Human Performance, for failing to implement appropriate error reduction tools. Specifically, the licensee became desensitized to overriding fuel placement constraints and failed to implement effective human performance tools to prevent the error. (Section 1R20.(2))



## REPORT DETAILS

### Summary of Plant Status

#### **Unit 1**

The unit began the inspection period shutdown for the planned refueling outage (RFO) U1R36 which began during the previous quarter on March 12, 2106. The unit was started up on April 4, 2016. The unit achieved full power on April 11, 2016, and remained at full power until the end of the inspection period.

#### **Unit 2**

The unit operated at or near full power for the entire inspection period, except for brief power reductions to conduct planned maintenance and surveillance activities.

### **1. REACTOR SAFETY**

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

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

##### .1 Readiness of Offsite and Alternate AC Power Systems

##### a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- coordination between the TSO and the plant during off-normal or emergency events;
- explanations for the events;
- estimates of when the offsite power system would be returned to a normal state; and
- notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;

- compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- RHR system during heatup following U1R36;
- G-01 EDG following the monthly TS surveillance run; and
- Unit 2 Train A safety injection system following testing.

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, Final Safety Analysis Report (FSAR), Technical Specification (TS) requirements, outstanding work orders (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 equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers 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 were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the G–05 gas turbine generator to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee’s probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 187: central tank area;
- Fire Zone 104 & 105: 1A/B RHR pump rooms;
- Fire Zone 106, 107, and 115: unit 1 RHR pipeway and heat exchanger room;
- Fire Zone 108 & 109: 2A/B RHR pump rooms; and
- Fire Zone 110, 111, and 119: unit 2 RHR pipeway and heat exchanger room.

The inspectors reviewed 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 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 as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, 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 minor 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 five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

1) Failure to Perform Required Fire Watches in Areas Containing Transient Combustibles

Introduction. A finding of very low safety significance (Green) and associated NCV of license condition 4.F was identified by the inspectors for the licensee's failure to conduct required fire watch inspections in accordance with the licensee's Fire Protection Program requirements. Specifically, while conducting fire protection walkdowns of both units RHR pipeway and heat exchanger rooms, the inspectors discovered numerous transient combustible items in areas that the licensee had controlled using tamper seals on the entrances to control combustible accumulation in lieu of room physical entry for inspection.

Description. On May 2, 2016, while performing fire protection walkdowns in fire zones 106, 107, 110, 111, 115, and 119 the inspectors discovered that the gates controlling access to these areas had tamper seals installed by the licensee. The inspectors determined that in an effort to limit accumulated radiological dose when performing fire watch tours in these areas, the licensee began using tamper seals as a measure to provide positive controls for limiting entry into the areas.

The licensee's procedure, OM 3.27; "Control of Fire Protection & Appendix R Safe Shutdown Equipment," Revision 59 section 4.3 stated, in part, that physical entry into fire zones was required to adequately complete a fire watch. Furthermore, section 4.3 stated that, "Should physical entry be restricted for some reason, then the condition should be evaluated by the Appendix R or Fire Protection Engineer for alternate measures." The inspectors determined that on July 14, 2014, the licensee's fire protection engineers provided station management guidance concerning acceptable practices for the conduct of fire watches. The guidance included engineering's assessment of the objectives of a fire watch, which were a paraphrased restatement of section 9.3 of the licensee's Fire Protection Evaluation Report: 1) remove unnecessary combustible material; 2) monitor work activities that will introduce an ignition source; and 3) monitor other abnormal activities that could raise the likelihood of a fire. The guidance also stated that if a fire zone was inspected for fire hazards and subsequent introduction of fire hazards was prevented, these objectives were being met. Fire protection engineers concluded that if positive control for entry into the RHR system fire

areas could be maintained, and that the fire zones were initially inspected for fire hazards, the objective of the fire watch was met and was acceptable.

On July 15, 2014, Operations department shift management accepted this guidance, and began using tamper seals with unique identification numbers as positive means to control the RHR heat exchanger and pipeway areas for both units.

During the May 2, 2016, walkdown of the fire zones described above, the inspectors coordinated with the licensee to break the tamper seals and enter the fire areas. The inspectors discovered numerous transient combustibles in the areas, including an energized portable light fixture. The inspectors determined that the licensee's procedure, NP 1.9.9; "Transient Combustible Control," Revision 26 provided a transient combustible load buffer for these areas which allowed for materials that would have been used for normal plant operations, such as radiation protection materials, reference materials, and garbage cans as examples. The inspectors determined that the items discovered were not necessary for normal plant operation, did not have a permit, and were not otherwise included in the fire loading evaluation for the areas.

The inspectors concluded that the licensee failed to meet the objectives described by the licensee's fire protection engineers which provided for the allowance to not physically enter the fire zones, since unnecessary combustible materials were present and those materials were not otherwise documented and evaluated as acceptable. This constituted a failure to meet the requirements for Compensatory Measures Fire Watches as described by section 9.3 of the licensee's FPER, which then required the licensee to physically enter the fire zones, as implemented by OM 3.27, and transient combustibles were required to be quantified and documented in accordance with NP 1.9.9.

Analysis. The inspectors determined that failure to inspect the fire zones was contrary to FPER Section 9.3 and was a performance deficiency. The finding was determined to be more than minor because the failure to conduct the required fire watch inspections was associated with the Initiating Events cornerstone attribute of Protection Against External Events (Fire) and affected the cornerstone objective of preventing undesirable consequences (i.e., core damage). Specifically, the failure to conduct the required fire watch inspections or meet the alternate measures specified by the licensee's engineers, allowed unanalyzed transient combustibles and ignition sources to be present in fire zones that contained both trains of both unit's RHR pumps, heat exchangers and associated equipment.

In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Table 2, the inspectors determined the finding affected the Mitigating Systems cornerstone. The finding degraded fire protection defense-in-depth strategies, and the inspectors determined, using Table 3, that it could be evaluated using Appendix F, "Fire Protection Significance Determination Process." The inspectors screened the issue under the Phase 1 Screening Question 1.3.1-A, and determined that the finding was of very low safety-significance (Green), because the inspectors determined that the impact of a fire would not prevent either reactor from reaching and maintaining safe shutdown (hot).

This finding has a cross-cutting aspect of Bases for Decisions (H.10), in the area of human performance, because the licensee's leadership did not ensure that the bases for operational and organizational decisions are communicated in a timely manner.

Specifically, the licensee did not periodically verify the understanding of the individuals assigned to fire watches, in particular, that the relief from physical entry and application of a tamper seal required a thorough tour of the zones following any entry into those fire zones.

Enforcement. License condition 4.F for both Unit 1 and Unit 2 required the licensee to implement and maintain in effect all provisions of the approved fire protection program as described in the FSAR and Safety Evaluation Report dated August 2, 1979, (and Supplements dated October 21, 1980, January 22, 1981, and July 27, 1988) and the Safety Evaluation Report issued January 8, 1997, for TS Amendment No. 170 and No. 174. Section 9.10 of the FSAR stated that the FPER was incorporated into the FSAR by reference. Section 9.3 of the FPER states, in part, that Compensatory Measures Fire Watches (CMFW) shall be responsible for inspecting fire zones for the following:

1. Combustible materials that are not normally located in the fire zone that may present a fire exposure to cables or equipment in the room if they were to become ignited.
2. Work activities in the fire zone that will introduce a potential ignition source presenting a fire exposure to cables or equipment in the area.
3. Any other abnormal activities in the fire zone that could introduce an increased likelihood of a fire starting in the fire zone.

Contrary to the above, from July 15, 2014, until May 10, 2016, the licensee failed to inspect multiple fire zones for: work activities that could introduce potential ignition sources; combustible materials; and other abnormal activities that could introduce an increased likelihood of a fire starting in the fire zone. Because this violation was of very low safety significance and it was entered into the licensee's CAP as AR 02129244, and AR 02129347, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. The licensee's corrective actions included documenting and quantifying the removal of the items from the zones and additional actions to perform additional evaluation of the fire zones (**NCV 05000266/2016002-01; 05000301/2016002-01, "Failure to Perform Required Fire Watches in Areas Containing Transient Combustibles"**).

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On June 30, 2016, the inspectors observed a fire brigade activation for a fire in the Unit 2 vacuum priming pump. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff openly discussed identified deficiencies in a self-critical manner at the drill debrief and took appropriate corrective actions. Specific attributes evaluated were:

- proper wearing of turnout gear and self-contained breathing apparatus;
- proper use and layout of fire hoses;
- employment of appropriate firefighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- search for victims and propagation of the fire into other plant areas;

- utilization of pre-planned strategies;
- adherence to the pre-planned drill scenario; and
- drill objectives.

Documents reviewed are listed in the Attachment to this report.

These activities constituted one partial annual fire protection inspection sample as defined in IP 71111.05–05. This sample will be completed during future drill observations which allow for an evaluation of main control room response and smoke removal operations.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Underground Vaults

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined that the cables were not submerged, that splices were intact, and that appropriate cable support structures were in place. In those areas where dewatering devices were used, such as a sump pump, the device was operable and level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submergence conditions. The inspectors also reviewed the licensee’s corrective action documents with respect to past submerged cable issues identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- manhole Z–066B;
- manhole Z–066C; and
- manhole Z–066D.

Specific documents reviewed during this inspection are listed in the Attachment to this report. This inspection constituted one underground vaults sample as defined in IP 71111.06–05.

b. Findings

1) Submerged Safety-Related EDG Fuel Oil Transfer Pump Cables

Introduction. The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the failure to maintain EDG fuel oil transfer pump safety-related cables in an environment for which they were designed. Specifically, the licensee allowed the safety-related cables to be submerged in water, which was outside of their design, in manhole Z–066B.

Description. On April 24, 2015, the licensee discovered approximately five-feet of standing water in manhole Z-066B during their routine six-month maintenance inspection of all site manholes. The quantity of standing water was sufficient to submerge a portion of the cabling associated with the G-01 and G-02 EDG fuel oil transfer pumps (P-206A, and P-207A, respectively). Manhole Z-066B, along with other manholes on site containing safety-related cables, was upgraded in 2011 to be equipped with a sump pump and a water level alarm with strobe and audible horn in the event that the sump pump were incapable of pumping down accumulated water in the manhole. Subsequently the licensee determined that the sump pump had failed for Z-066B, and the audible alarm strobe light which is common for manholes Z-066B, Z-066C, Z-067B, and Z-067C, all containing safety-related cables, had failed. The licensee pumped the water out of Z-066B, repaired the failed sump pump, but did not repair the strobe and horn.

On September 29, 2015, AR 02077518 noted a condition where the above manhole alarm was discovered to be alarming, and unable to be reset.

On October 1, 2015, the licensee completed the six-month manhole inspection with no adverse issues noted; however, at this time the strobe and horn for the above noted manholes remained non-functional.

On December 10, 2015, AR 02096635 described that during the troubleshooting efforts of the September 29, 2015 condition, the licensee determined that the float level switch for Z-066B was grounded, and would require opening the manhole for further troubleshooting; however, no inspection into the manhole was performed at that time.

On April 28, 2016, the licensee conducted its six-month inspection of manholes while inspectors were present and discovered approximately five-feet of standing water in Z-066B. The inspectors observed that the lower cable tray was completely submerged and a portion of the cables in that tray were also submerged. The inspectors noted that the water depth of approximately five-feet was limited by the conduit openings in the manhole. Once water level reached this depth, the water was then able to flow down the conduit, due to the site topography, to manhole Z-066A, which had a working sump pump. The inspectors determined from site drawings that the total run of cabling exposed to protracted submergence was over 160 feet. The licensee pumped Z-066B using a temporary pump and closed the manhole.

On May 3, 2016, manhole Z-066B was re-opened to conduct repairs on the failed sump pump and associated components. Upon opening Z-066B the licensee discovered that the manhole had again filled with water to a depth of five-feet, submerging the above discussed cables. The licensee pumped the water from Z-066B; and made repairs to the sump pump, level switch, and the electrical outlet that provides power to the sump pump.

The inspectors determined that the submerged safety-related cables were control cables for the G-01 and G-02 EDG fuel oil transfer pumps, and were not designed for continuous submergence or prolonged contact with water. The inspectors also determined that these cables were considered in-scope for the licensee's Cable Condition Monitoring Program, which required periodic testing of these cables but testing of these cables had not been implemented. The licensee's license renewal commitments and condition monitoring procedures also required that an engineering evaluation was to be performed to evaluate discovered adverse conditions as a result of



cable monitoring and assess the degradation to cables, but that no evaluation was made after the April 2015 discovery of water in Z-066B.

The licensee initiated ARs 02128792, 02130000, 02130020, 02130022, 02130023, 02130130, and 02130180 to address the inspectors concerns.

Analysis. The inspectors determined the licensee's failure to maintain safety-related cables for the EDG fuel oil transfer system in an environment for which they were designed was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency. Specifically, the licensee failed to maintain safety-related control cables for the G-01 and G-02 EDG fuel oil transfer pumps in an environment for which they were designed when the cables were allowed to be submerged inside manhole Z-066B. The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," issued on June 19, 2012. Specifically, the inspectors used IMC 0609 Appendix A "SDP for Findings At-Power," issued June 19, 2012, Exhibit 2, "Mitigating Systems Screening Questions" to screen the finding. The finding screened as of very low safety significance (Green) because the inspectors answered "Yes" to the question "does the SSC maintain its operability or functionality." Specifically, the submergence of the G-01 and G-02 EDG fuel oil transfer pump cables did not render the transfer pumps inoperable.

This finding has a cross-cutting aspect Evaluation (P.2) in the area of problem identification and resolution, because the licensee did not thoroughly evaluate problems to ensure that resolutions address causes and extent of conditions, commensurate with their safety significance. Specifically the licensee failed to thoroughly investigate and prioritize the failure of the manhole alarm and pumping system according to the safety significance of the cables contained within the manholes which led to prolonged and unevaluated submergence of the cables.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. It further requires, in part, that these measures include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled.

Contrary to the above, on April 24, 2015, April 28, 2016, and on May 3, 2016, the licensee failed to assure that deviations from a specified standard were controlled. Specifically, the licensee failed to maintain the safety-related cables for the G-01 and G-02 EDG fuel oil transfer pumps in an environment for which they were designed, as specified by the design qualification document, when the cables were allowed to be submerged inside manhole Z-066B and in the conduit running between manholes Z-066A and B. Furthermore, upon the discovery of the deviation, the licensee failed to evaluate the resultant degradation. Because this violation was of very low safety significance and was entered into the licensee's CAP as AR 02128792 this violation is

being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. The licensee's corrective actions included pumping the water out of the manholes, repairing the failed sump pump, level switch, and alarm circuit; and performing an engineering evaluation to quantify the level of degradation as a result of the submergence, which included the creation of requirements for measurement of insulation resistance (**NCV 05000266/2016002-02; 05000301/2016002-02, "Submerged Safety-Related EDG Fuel Oil Transfer Pump Cables"**).

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 inspection results associated with the 1HX-012A Component Cooling Water Heat Exchanger and the 2B Containment Fan Motor Cooler. These heat exchangers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions, and their operating history.

For the component cooling water heat exchanger, the inspectors reviewed the testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling programs to assess the heat transfer capability of the heat exchanger. This was accomplished by reviewing whether: (1) the test method used was consistent with accepted industry practices; (2) the test conditions were consistent with the selected methodology; (3) the test acceptance criteria were consistent with the design basis values; and (4) the results of the heat exchanger performance test met established acceptance criteria. The inspectors also reviewed whether: (1) the test results considered differences between testing conditions and design conditions; (2) the frequency for testing considered previous test result trends; and (3) test results considered test instrument inaccuracies and differences.

For the Containment Fan Motor Cooler, the inspectors reviewed the inspection, maintenance, and monitoring of biotic fouling and macrofouling programs to assess the heat transfer capability of the cooler. The inspectors reviewed whether: (1) the methods used to inspect and clean the cooler were consistent with as-found conditions identified, expected degradation trends, and industry standards; (2) the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards; and (3) the as-found results were recorded, evaluated, and dispositioned such that the as-left condition was consistent with the established criteria.

In addition, the inspectors reviewed the condition and operation of the heat exchangers to determine consistency with design assumptions in heat transfer calculations and as described in the final safety analysis report. This included an assessment of the number of plugged tubes compared to pre-established limits based on capacity and heat transfer assumptions. The inspectors reviewed whether the licensee established controls and operational limits to prevent heat exchanger degradation due to excessive flow-induced vibration during operation. In addition, visual inspection records were reviewed to determine the structural integrity of the heat exchangers.

The inspectors reviewed the licensee's operation of the service water system and Ultimate Heat Sink. This included a review of procedures for a loss of the service water system or Ultimate Heat Sink. In addition, the inspectors assessed whether macrofouling was adequately monitored, trended, and controlled by the licensee to prevent clogging. The inspectors reviewed whether the licensee's biocide treatments for biotic control were adequately conducted and the results monitored, trended, and evaluated. In addition, the inspectors reviewed design changes to the service water system to verify that it was not adversely impacted by the changes.

The inspectors performed a system walkdown of the service water intake structure to assess its structural integrity and component functionality. This included observations of the structural integrity of component mounts and an assessment of the functionality of the traveling screens and strainers. The inspectors reviewed licensee activities which monitor, trend, and maintain service water pump bay silt accumulation at acceptable levels, and those which monitor and ensure proper function of pump bay water level instruments. The inspectors also reviewed the licensee's ability to ensure functionality of the intake structure during adverse weather conditions.

In addition, the inspectors reviewed corrective action documents related to the service water system, ultimate heat sink, 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 their corrective actions. The documents that were reviewed are included in the Attachment to this report.

These inspection activities constituted three heat sink inspection samples as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

On May 18, 2016, the inspectors observed crew A licensed operators in the plant's simulator during licensed operator regualification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's 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 successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11-05

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation During Periods of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On April 5, 2016, the inspectors observed the Unit 1 Startup following U1R36. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms (if applicable);
- correct use and implementation of procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions.

The performance in these areas was compared to pre-established operator action expectations, procedural compliance and task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- multiple failures of the relay room air conditioner; and
- reactor protection system.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted or could have resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems 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 (SSCs)/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 complete and one partial quarterly maintenance effectiveness sample as defined in IP 71111.12-05. At the conclusion of the inspection period, the inspectors needed additional information from the licensee to complete the inspection attributes for the reactor protection sample.

b. Findings

1) Suitability of Reactor Protection System and Engineered Safeguards System Components

Introduction. During the review of the Reactor Protection System (RPS), the inspectors identified an Unresolved Item (URI) associated with components in both unit's RPS and engineered safeguards (ESF) system which contained components known to degrade with age, including electrolytic capacitors. In some cases, these components may have been installed as original plant equipment.

Description. During the inspector's review of system health reports associated with both Units 1 and 2 RPS, and ESF system as an extent of condition review, the inspectors identified a URI associated with components in hundreds of safety-related RPS and ESF printed circuit boards, power supplies, amplifiers, transmitters, and other related components that potentially exceeded their design criteria for the time period that the components were installed for which no evaluations existed.

The inspectors determined that this was an issue of concern in which more information was needed to determine if the issue constituted one or more violations of NRC requirements. Specifically, the inspectors determined that subcomponents, including but not limited to electrolytic capacitors, were installed in both safety trains of both unit's RPS and ESF components, in some cases for over 40 years without any documented evaluation of age-related degradation mechanisms. The inspectors needed to evaluate the licensee's operability determinations that resulted from this inspection activity, any

engineering evaluations to provide justification for suitability with respect to design control, recovery plans, a review of the proposed preventative maintenance activities, current failure rates and drift trending, and any other information provided by the licensee that may provide a technically defensible basis for the continued operation. The issue is unresolved pending further NRC review of the licensee's evaluation (**URI 05000266/2016002-03; 05000301/2016002-03, "Suitability of Reactor Protection System and Engineered Safeguards System Components"**).

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

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

- G-02 EDG, P-35B Fire Pump, and K-3A air compressor out-of-service (OOS) with switchyard maintenance in-progress;
- G-05 gas turbine generator OOS with Unit 2 A RHR heat exchanger OOS;
- G-04 EDG maintenance and testing with turbine-drive auxiliary feedwater pump (TDAFWP) motor operated valve (MOV) testing, 2X-01 transformer work, Unit 2 main turbine trip testing, and safety injection(SI)system surveillances; and
- 1P-15A safety injection pump and 1DY-01 inverter OOS combined with switchyard maintenance.

These 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 during this inspection are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted four samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Functional Assessment (FA) 02110870: Spent Fuel Handling Bridge Crane Control of Heavy Loads;
- Prompt Operability Determination (POD) 02085305: Limits on Operability for A06 Busses;
- AR 02124656: Cable Spreading Room AC Unit Found Tripped Off;
- AR 02122521: Evaluation of ECCS Voids;
- AR 02126063: 2P–53 Motor-Driven Auxiliary Feedwater Pump Seal Leakage; and
- POD 02131629: Analysis Application Error – Revise POD 01887365–05.

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 TS 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 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.

This operability inspection constituted six samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- 1P–2A charging pump following variable frequency drive modification;
- K–502; atomizing air compressor for the G–05 gas turbine generator following discharge check valve repairs;

- G-04 EDG following planned mini-outage for electric governor replacement;
- G-04-WM wattmeter following modification/upgrade;
- 2A52-93; G-04 EDG normal output breaker following breaker swap;
- 1P-15A; Unit 1 A Train safety injection pump following motor condition evaluations; and
- P-32C service water pump testing after pump replacement.

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 (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against 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 basis and design requirements. 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 seven post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors reviewed the Outage Safety Plan (OSP) and contingency plans for the Unit 1 refueling outage (RFO), which began March 12, 2016, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors monitored licensee controls over the outage activities listed below:

- licensee configuration management, including maintenance of defense-in-depth commensurate with the OSP for key safety functions and compliance with the applicable TS when taking equipment out of service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;



- installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TS;
- licensee fatigue management, as required by 10 CFR 26, Subpart I;
- refueling activities, including fuel handling and sipping to detect fuel assembly leakage;
- startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the containment to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RFO sample as defined in IP 71111.20–05, and completed the partial sample which was documented in the NRC’s previous quarterly integrated inspection report, 05000266/2016001; 05000301/2016001.

b. Findings

(1) Violation of Technical Specifications During Mode 4 Entry with LCO 3.6.6 Not Met

Introduction. A finding of very low safety significance (Green) and associated NCV of Technical Specification 3.0.4 was identified by the inspectors for the licensee’s failure to follow procedure OP 1A, “Cold Shutdown to Hot Standby Unit 1” and checklist CL 2C, “Mode 5 to Mode 4 Checklist.” Specifically, the licensee entered Mode 4 from Mode 5 without meeting the requirements of limiting condition for operation (LCO) 3.0.4 for entering a Mode when an applicable LCO is not met. The licensee had not met LCO 3.6.6 because the control switches for two out of the required four containment accident recirculation fans were in their pullout position instead of the required automatic position.

Description. On April 2, 2016, at 2:29 a.m., at the end of the planned refueling outage, Unit 1 entered Mode 4 from Mode 5. Thirty eight minutes after transitioning to Mode 4, the licensee entered TS 3.6.6.C after discovering that the 1W–1C1 and 1W–1D1 containment accident recirculation fan control switches were in their pullout position instead of the required automatic position. The licensee placed the control switches for 1W–1C1 and 1W–1D1 into their automatic position and exited TS 3.6.6.C at 3:08 a.m. The licensee violated LCO 3.0.4 when they transitioned from Mode 5 to Mode 4 with LCO 3.6.6 not met because the licensee had not met any of the three options listed in LCO 3.0.4 for transitioning to a mode with an applicable LCO not met.

The inspectors independently reviewed the licensee’s procedures, applicable control room logs, and corrective action documents related to the violation to understand the

circumstances surrounding the event. The review found that licensee test procedure ORT 3B, "Safety Injection Actuation With Loss of Engineered Safeguards AC (Train B) Unit 1," which the licensee had completed on March 31, placed the control switches in pullout but failed to restore them to their automatic position. The inspectors found this fact to be a weakness, but not a violation, because the ORT 3B test can only be performed in modes that don't require containment accident recirculation fans to be operable.

The inspectors reviewed checklist CL 2C, which is used by the licensee to track requirement completion prior to entering Mode 4 from Mode 5. Step 1.14 of Attachment A, which states "LCO 3.6.6, Two containment spray trains and four accident fan cooler units SHALL be OPERABLE," was signed off as complete. A review of corrective action documents and a discussion with the licensee found that the senior reactor operator that signed the step as complete had an incorrect perspective on requirements for that step and signed it after only validating that all of the required surveillance tests were complete.

The inspectors reviewed procedure OP 1A, which is the procedure that controls the transition from Mode 5 to Mode 4. OP 1A, Step 5.28.2 directs the licensee to ensure operational readiness to exit Mode 5 and enter Mode 4 by having the Control Operator and Senior Reactor Operator perform a control board walkdown to ensure appropriate equipment and alignment availability. Licensee interviews found that the SRO and CO had performed the required walkdown, but they missed the incorrectly positioned switches. Additionally, the SRO and CO, both observed the illuminated Safeguards Equipment Locked Off alarm, which illuminates when safeguards equipment is out of its normal configuration, but attributed it to a safety injection pump control switch that was in pullout for a valid reason. They did not validate that the alarm was in from any other equipment being in an abnormal alignment.

The inspectors did not give the licensee credit for identification of the finding because the inspector's added value, when they identified inadequacies in the licensee's evaluation of the issue of concern. Specifically, after not finding an assignment to assess reportability of the Technical Specification violation, they prompted the licensee that an assignment to assess the issue was never created. After the assessing the issue, the licensee concluded that it was reportable and submitted a licensee event report before the sixty-day requirement had expired.

Analysis. The inspectors determined that failing to follow procedures OP 1A and CL 2C was a performance deficiency. The inspectors determined that the finding was more than minor, because, it was associated with the Barrier Integrity cornerstone attribute of Human Performance and affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to follow procedures OP 1A and CL 2C caused the licensee to unknowingly operate with multiple containment accident recirculation fans inoperable, which were required in Mode 4.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," dated June 19, 2012, and Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening

and Characterization of Findings,” Exhibit 4, Barrier Integrity Screening Questions, dated May 9, 2014. The inspectors answered “no” to the Containment Barrier Screening Questions and determined the finding had very low safety significance (Green).

This finding has a cross-cutting aspect of Challenge the Unknown (H.11), in the area of Human Performance, for failing to stop when faced with uncertain conditions. Specifically, when the licensee assessed the illuminated Safeguards Equipment Locked Off alarm, during their control board walk down, they confirmed that the safety injection pump control switch was in pullout and was a reason for the alarm to actuate; however, they failed to confirm that other inputs to the alarm were also not valid.

Enforcement. Limiting Condition for Operation 3.6.6 specified that four accident fan cooler units are required to be operable in MODE 4. If one or two accident fan cooler units are not operable, the TS required that the fan cooler units be restored to operable within 72 hours AND 144 hours from discovery of failure to meet the LCO.

Limiting Condition for Operation 3.0.4 specified the requirements that must be satisfied prior to making a MODE change if an LCO is not met. LCO 3.0.4 stated, in part, “When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE, or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications; or
- c. When an allowance is stated in the individual value, parameter or other Specification.”

Contrary to the above, on April 2, 2016, at 2:29 a.m., the provisions of LCO 3.0.4 were not met when operators transitioned from MODE 5 to MODE 4 and, therefore, the MODE change was a violation of the Technical Specifications requirement.

- The associated ACTIONS for Technical Specification 3.6.6 Condition C do not permit continued operation for an unlimited period of time; therefore, condition ‘a’ of LCO 3.0.4 was not met.
- No risk assessment was performed to address the risk associated with two accident fan cooler units being unavailable prior to the MODE change. Therefore, condition ‘b’ of LCO 3.0.4 was not met.
- Condition ‘c’ of LCO 3.0.4 does not apply since there was no specific MODE change allowance stated in Technical Specifications 3.6.6 if the LCO was not met.

Because this violation is of very low safety significance, and because the issue was entered into the corrective action program as AR 2122346, this issue is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV**

**05000266/2016002-04; “Violation of Technical Specifications During Mode 4 Entry with LCO 3.6.6 Not Met”).**

Corrective actions for this event included restoration of accident cooler fan control switches to automatic. Additional corrective actions included: performance of an apparent cause evaluation; changes to the licensee’s ORT 3 test procedures to restore accident fan cooler switches after completion of testing; updating OP 1A to include performance of a control room shift turnover checklist prior to changing modes; and planned enhancements to CL 2 series procedures to strengthen a note on the responsibility of the SRO when ensuring operability of LCOs.

(2) Fuel Assembly Move Sequence Planned Incorrectly

Introduction. The inspectors identified a finding of very low safety significance (Green) for the licensee’s failure to follow procedure REI 26.0, “Fuel/Insert/Component Movement Planning.” Specifically, the licensee failed to follow procedure REI 26.0, Step 5.5.7.b, which verified that the licensee would not be placing fuel assemblies with cooling times less than 295 days into spent fuel pool rack foot locations.

Description. While completing the outage verification that the licensee placed spent fuel assemblies into correct locations within the spent fuel pool, the inspectors identified that the licensee had moved a fuel assembly with a cooling time of less than 295 days into a spent fuel pool rack foot location. The inspectors’ review of the previously completed fuel movement authorization form found that the move sequence was planned incorrectly prior to the fuel moves. Procedure REI 26.0, Step 5.5.7.b, which verifies for the fuel move sequence being planned that fuel assemblies with cooling times less than 295 days will not be placed into spent fuel pool rack foot locations, was incorrectly signed off. Specifically, fuel assembly PP53 had a cooling time less than 295 days and was placed in spent fuel pool location SN-22, a storage location over a spent fuel pool rack foot location. The licensee planned and completed additional spent fuel moves to place the spent fuel pool into an appropriate configuration and entered the issue into their CAP. The licensee’s Apparent Cause Evaluation(ACE) found that because of multiple changes to planned spent fuel configurations leading up to the refueling outage, the reactor engineers had to frequently override invalid software constraints that check for fuel placement errors. When the licensee created the fuel move sequence that placed the fuel assembly in the incorrect location, they had become desensitized to overriding software constraints and erroneously overrode a valid fuel placement constraint.

Analysis. The inspectors determined that failing to follow procedure REI 26.0 was a performance deficiency. The inspectors determined that the finding was more than minor, because, if left uncorrected, it had the potential to become a more significant safety concern. Specifically, if the inspectors had not questioned the licensee about spent fuel pool rack foot locations, the spent fuel pool would have remained in an incorrect configuration. The inspectors concluded this finding was associated with the Barrier Integrity cornerstone.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Initial Characterization of Findings,” dated June 19, 2012, and Appendix L, “B.5.b Significance Determination Process”, “Table 2 – Significance Characterization,” The inspectors

determined that the finding did not meet the criteria in Table 2 for a Greater-Than-Green significance; therefore, the finding was of very low safety significance (Green).

This finding has a cross-cutting aspect of Avoid Complacency (H.12), in the area of Human Performance, for failing to implement appropriate error reduction tools. Specifically, the licensee became desensitized to overriding fuel placement constraints and failed to implement effective human performance tools to prevent the error.

Enforcement. This finding does not involve enforcement action because no violation of a regulatory requirement was identified. The licensee's corrective actions included completing additional spent fuel moves, which placed the spent fuel pool into an appropriate configuration (**NCV 05000266/2016002-5; 05000301/2016002-05: "Fuel Assembly Move Sequence Planned Incorrectly"**).

(3) Incorrect Wiring Causes Transformer Lockout

Introduction. A finding of very low safety significance (Green) and associated NCV's of TS 3.8.1, "AC Sources-Operating" and TS 3.8.2, AC Sources-Shutdown, was self-revealed for the licensee's failure to follow procedure RMP 9056-9B, "1X-03, Protective Relay Calibration and Testing." Specifically, a wiring error in the 1X-03 connection box, which occurred in 2013, caused the 1X-03 transformer's differential protection circuitry to lockout the transformer at current levels below the design protection values.

Description. On April 1, 2016, at 11:32 a.m., with Unit 1 in a refueling outage, a lockout occurred on the 1X-03 transformer when the licensee started the Unit 1 'A' reactor coolant pump. This lockout resulted in the loss of an offsite power line and the resulting electrical transient caused contactors for two of the licensee's battery chargers to open and de-energize, which caused the licensee to enter TS LCO 3.0.3 on Unit 2, the operating unit. The licensee was able to restore the battery chargers shortly after they were lost and exited LCO 3.0.3. The offsite power line was restored at 1:53 p.m. the same day.

The licensee's investigation found that a wiring error in the 1X-03 connection box, which occurred in 2013, caused the 1X-03 transformer's differential protection circuitry to lockout the transformer at current levels below the design protection values. Step 5.5.11 of RMP 9056-9B lifted leads from terminal point W-2 as part of the relay testing and step 5.5.98 should have landed or restored those leads after the testing was completed. The licensee found that when step 5.5.98 was performed in April 2013, the wires were erroneously landed on the W-4 terminal point instead of the W-2.

Analysis. The inspectors determined that the failure to follow procedure RMP 9056-9B was a performance deficiency. The inspectors determined that the finding was more than minor, because, it was associated with the Initiating Events cornerstone attribute of Equipment Performance and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the lockout of 1X-03 caused a loss of one of the licensee's offsite power lines and also caused a loss of power to multiple station battery chargers placing Unit 2 into LCO 3.0.3.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial

Characterization of Findings,” dated June 19, 2012, and Appendix A, “The Significance Determination Process for Findings At-Power,” Exhibit 1, Initiating Events Screening Questions, dated June 19, 2012. The inspectors answered “Yes” to the Support System Initiators question; therefore, a Detailed Risk Evaluation was required.

Since the time periods of inoperability of the 1X–03 transformer include both times at Mode 4 and above, and times while the Unit was in Mode 5, the delta risk was evaluated for each of these two time periods. Although the inoperability of transformer 1X–03 would affect the risk for both Units 1 and 2, the delta risk for Unit 1 would bound the risk significance for Unit 2. Thus, only the risk significance for Unit 1 was calculated.

#### Case 1: Unit 1 in Mode 4 or Above

To evaluate the risk significance of the finding in Mode 4 and above, a Senior Reactor Analyst (SRA) used the Point Beach Standardized Plant Analysis Risk (SPAR) model version 8.26 and the Systems Analysis Programs for Hands-on Integrated Reliability Evaluations (SAPHIRE) version 8.1.3 software. Information provided by the licensee in AR 02122199, AR Assignment # 03, gave the maximum exposure time during a one-year period (over the last three years) of 31.18 hours (on 08/19/13 and 08/20/13) that transformer 1X-03 was inoperable. If 1X03 was unavailable for an entire year, the delta risk for internal events was 1.36E-7/yr. For an Exposure Time of only 31.18 hours, the delta core damage frequency ( $\Delta$ CDF) was 4.8E-10/yr.

#### Case 2: Unit 1 in Mode 5

Information provided by the licensee in AR 02122199, AR Assignment # 03, gave the maximum exposure time during a one-year period (over the last three years) of 11.62 hours (on 10/27/14) that transformer 1X–03 was inoperable while Unit 1 was in Mode 5. The SRA evaluated the finding in accordance with IMC 0609, “Significance Determination Process,” Appendix G, Attachment 1, “Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings.” Under Exhibit 3 – Mitigating Systems Screening Questions, the inspectors answered “Yes” to screening question 3, “Does the finding represent an actual loss of safety function of at least a single Train for greater than its allowed outage time ...” and thus the evaluation proceeded to Appendix G, Phase 2. In Phase 2, the shutdown risk was evaluated using Worksheet 3, “SDP for a PWR [pressurized water reactor] Plant – Loss of Offsite Power in POS 1 (RCS Closed).” The result was one value of “8”, which represented a  $\Delta$ CDF of 3.3E–8/yr.

The Exposure Time periods for Case 1 and Case 2 did not overlap within a one-year period, so the maximum of these two cases (i.e., 3.3E–8/yr) was used to represent the delta risk for the finding.

Based on the Detailed Risk Evaluation, the SRA determined that the finding was of very low safety significance (Green).

This finding has a cross-cutting aspect of Avoid Complacency (H.12), in the area of Human Performance, for failing to implement appropriate error reduction tools. Specifically, the incorrectly performed procedure step, in RMP 9056–9B, clearly specified which terminal point to land the wires on, the terminal points were clearly labeled, and the step required a concurrent verification; however, even with those barriers in place, the task performers still landed the wires on the wrong location.

Enforcement. Technical Specification 3.8.2, required, in part, that when a required offsite circuit is inoperable in MODES 5 and 6, the licensee shall initiate actions to restore required offsite power circuit to operable status. The completion time of the required action is immediately.

Contrary to the above, on October 27, 2014, and March 12, 2016, when a required offsite circuit was inoperable, on Unit 1 in Mode 5, the licensee failed to immediately restore the required offsite power circuit to operable status. Specifically, the incorrect relay wiring configuration in combination with the switchyard alignment for those timeframes resulted in 1X-03 transformer being inoperable, which resulted in a required offsite power source being inoperable. The licensee did not take immediate actions to restore the required offsite power circuit to operable status.

Technical Specification 3.8.1, required, in part, that when an associated unit's X-03 transformer is inoperable in MODES 1, 2, 3, and 4, the licensee shall verify that the gas turbine is in operation. The completion time of the required action is 24 hours.

Contrary to the above, on August 20, 2013, with Unit 1 in Mode 1, the 1X-03 transformer had been inoperable for greater than 24 hours without verifying the gas turbine was in operation. Specifically, the incorrect relay wiring configuration in combination with the switchyard alignment resulted in 1X-03 transformer being inoperable. At 3:14 a.m., on August 20, the 1X-03 inoperability time period exceeded 24 hours and the licensee had not verified that the gas turbine was in operation.

Because these violations were of very low safety significance and the licensee entered them into their CAP as AR 02122199, they are being treated as NCVs, consistent with Section 2.3.2 of the NRC Enforcement Policy. The licensee's corrective actions included correcting the improper wiring in the 1X-03 connection box and evaluating other work performed by the same vendor during that timeframe (**NCV 05000266/2016002-06; 05000301/2016002-06; "Incorrect Wiring Causes Transformer Lockout"**).

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:

- 1-TS-ECCS-002, Emergency Core Cooling System (ECCS) Train A/B and OI 135E following U1R36 RFO (Routine);
- 1ICP 02.001RD; Reactor Protection and Engineered Safety Features Red Channel Analog 92 Day Surveillance Test (Routine);
- ORT 3B, Safety Injection Actuation With Loss Of Engineered Safeguards AC (Routine); and
- IT 40 Train B; Safety Injection Valves Train B Unit 1 (Inservice Test);

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

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were 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 frequency was in accordance with TSs, the FSAR, procedures, and 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 Section XI, American Society of Mechanical Engineers code, 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, and one in-service test sample as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.



#### 4. OTHER ACTIVITIES

##### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Security**

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

##### .1 Reactor Coolant System Leakage

##### a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system (RCS) leakage performance indicator (PI) (BI02) for Point Beach Nuclear Plant, Units 1 and 2 for the period beginning second quarter 2015 through the first quarter 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, CAP documents, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two reactor coolant system leakage samples as defined in IP 71151-05.

##### b. Findings

No findings were identified.

#### 4OA2 Identification and Resolution of Problems (71152)

##### .1 Routine Review of Items Entered into the Corrective Action Program

##### 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 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: identification of the problem was complete and accurate; 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 occurrences reviews were proper and adequate; and that 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 included 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 were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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 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 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of October 2015 through March 2016, 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.

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

b. Findings

No findings were identified.

c. Observations:

Reactor Engineering

The inspectors, after recalling multiple outage human performance errors in the area of nuclear fuel assembly documentation and tracking, determined an in-depth review to identify any trends was appropriate. The inspectors had previously identified the following issues:

- In the 2014 Unit 2 Spring outage, the inspectors identified that the final Unit 2 Cycle 34 loading pattern documented in the Reactor Operating Data Book 11, Core Layout Information Unit 2 Cycle 34, had one fuel assembly location mislabeled. The licensee found this to be a typographical error and the correct fuel had been loaded in the core.
- In the 2015 Unit 2 Fall outage, the inspectors identified an error in the licensee's core map. After the core is refueled, the licensee uses a submerged video camera to create a final map of the core. The map is then verified against the approved core design for that cycle to confirm that the fuel was loaded into the correct location. The inspectors found that one of the fuel assemblies recorded on the map did not agree with the approved core design and that the licensee had missed the mistake during their review and validation. The licensee reassessed the video recording and confirmed that the correct fuel assembly was in the core.
- In the 2016 Unit 1 Spring outage, the inspectors found that the licensee failed to follow their procedure for planning fuel moves and placed a spent fuel assembly that had a cooling time of less than 295 days into a spent fuel rack foot location. This issue was determined to be a finding and is discussed in detail in Section 1R20.1.

During the inspectors' historical review of human performance issues in the reactor engineering discipline, they found that the licensee had completed a self-assessment in 2016 specifically looking at reactor engineering human performance errors across the NextEra Fleet. The inspectors' review of the self-assessment found that Point Beach led the NextEra Fleet over the last three years in reactor engineering human performance errors. The assessment also concluded that human performance errors in the areas of "Attention to Detail" and "Inadequate Verification" were most prominent. The inspectors identified that human performance errors were decreasing; however, there appeared to be a correlation of error frequency with the refueling outage frequency, and this area will continue to receive inspector attention in future outage inspections.

Plant Equipment Obsolescence and Aging

During the inspectors' review of various information sources for the semi-annual trend, which included a sampling of system health reports, they observed a repetitive theme across the systems reviewed of challenges associated with the obsolescence of equipment and availability of parts for aging equipment.

.4 Follow-Up Sample for In-Depth Review: Review of Enforcement Discretion Non-Cited Violation Identified During the Point Beach 2014 Cyber-Security Inspection 2014403 and Associated Corrective Action Documents

a. Inspection Scope

The inspectors performed a review of the licensee's Corrective Action Program (CAP) and associated documents, specifically Action Request (AR) 01935623, "PSL Cyber Security Inspection OE Milestone 4 Use of PMDS." The inspectors interviewed personnel, performed walkdowns, verified the completion of and assessed the adequacy of the corrective actions taken in response to one licensee identified Non-Cited Violation (NCV) given enforcement discretion.

The inspector's review and evaluation was focused on the licensee identified cyber-security NCV to ensure corrective actions were: complete, accurate, and timely; considered extent of condition; provided appropriate classification and prioritization; provided identification of root and contributing causes; appropriately focused; action taken resulted in the correction of the identified problem; identified negative trends; operating experience was adequately evaluated for applicability; and applicable lessons learned were communicated to appropriate organizations.

b. Background

In accordance with Title 10, *Code of Federal Regulations* (CFR), Part 73, Section 54, "Protection of Digital Computer and Communication Systems and Networks" (i.e., the Cyber-Security Rule), each nuclear power plant licensee was required to submit to the NRC for review and approval a cyber-security plan and an associated implementation schedule by November 23, 2009. A Temporary Instruction (TI) 2201/004, "Inspection of Implementation of Interim Cyber Security Milestones 1 – 7" was developed to evaluate and verify each NPP licensee's ability to meet the interim milestone requirements of the Cyber-Security Rule. On October 6, 2014, the NRC completed an inspection at the Point Beach Nuclear Plant, Units 1 and 2, which evaluated the interim Cyber-Security Milestones 1 – 7. During performance of the Temporary Instruction, one licensee identified NCV was reviewed and incorporated into the licensee's CAP. The NCV was subsequently given enforcement discretion following the Security Issues Forum (SIF) Meeting conducted on October 1, 2014. During the week of May 16, 2016, the inspector reviewed the Cyber-Security Milestones 1 – 7 Inspection NCV as a problem identification and resolution sample. The CAP documents were evaluated to determine the effectiveness of the licensee's corrective actions.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152–05.

c. Findings

No findings were identified.

.5 Annual Follow-up of Selected Issues: Delayed Indication of Fire Alarm in Containment

a. Inspection Scope

During a review of items entered into the licensee's CAP, the inspectors selected a condition report involving the delay of control room indication for a fire alarm in the Unit 1 containment. The inspectors' in-depth historical review found additional condition reports that described previous fire alarm system failures and attempts by the licensee to repair the system. Reviewed condition reports included:

- AR 02122527 FACP-7 Communication Loop Causes Delayed Indication of Fire;
- AR 02110084 FACP Not Alarming in the Control Room;
- AR 02118705 1-PT-FP-001 Containment Fire Detector Test Discrepancies; and
- AR 02091359 Fireworks System Failure.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above condition reports and other related condition reports:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- evaluation and disposition of operability/functionality/reportability issues;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue;

The inspectors discussed the corrective actions and associated evaluations with licensee personnel.

This review constituted one in-depth problem identification and resolution inspection sample as defined in IP 71152.

b. Findings

No findings were identified

c. Observations

The inspectors' review found that the delay was caused by the failure of the fire detection system's network communications link, which was first identified by the licensee in November 2015. The fire detectors in containment functioned properly; however, the alarm was only received at a local panel in the primary auxiliary building (PAB) and not communicated to the control room alarms. The licensee's compensatory measure was to implement a one hour fire watch that checked the local alarm panels and subsequently communicate any alarms to the control room. The Resident Inspectors, in consultation with Regional Emergency Preparedness Inspectors, found that the licensee's compensatory measures for the failed fire detection network equipment, while potentially introducing a one hour delay from the time the fire is detected in containment to time that the control room was notified, did not violate

regulatory requirements. Additionally, after questions from the inspectors about the compensatory measures, the licensee enhanced their ability to monitor containment fire alarms by installing temporary video cameras at the local fire alarm panels in the PAB, which, when combined with appropriate computer software, provided a prompt alarm in the control room when the local alarm panel indicator illuminated.

The inspectors' review of corrective action timeliness found that the licensee made multiple attempts to troubleshoot and repair the failed fire detection system since the November failure; however, because of ongoing system obsolescence, the needed parts were no longer available and the licensee was forced to pursue a plant modification and system replacement, which is still in progress. Ultimately, the inspectors found that the licensee tolerated obsolete equipment until no other option remained but to replace the outdated system, which resulted in extended out-of-service time for the containment fire detection system.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On July 12, 2016, the inspectors presented the inspection results to Mr. D. DeBoer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

##### .2 Interim Exit Meetings

Interim exit was conducted for:

- On June 10, 2016, the inspection results for the triennial review of heat sink performance were discussed with Mr. R. Harrsch, Engineering Director and acting Site Vice President;

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during these inspections were returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

R. Coffey, Site Vice President  
D. DeBoer, Plant General Manager  
S. Aerts, Performance Improvement Manager  
J. Gerondale, Security Supervisor  
B. Griffin, Communications Specialist  
A. Gustafson, Operations Training General Supervisor  
R. Hastings Operations Assistant Manager  
R. Higgins, Operations Assistant Manager  
M. Millen, Senior Project Manager  
C. Neuser, Site Engineering Manager  
E. Schmidt, Site Engineering Manager  
T. Schneider, Senior Engineer  
R. Seizert, Emergency Preparedness Manager  
G. Strharsky, Site Quality Manager  
R. Webber, Site Operations Director  
R. Welty, Radiation Protection Manager  
P. Wild, Site Engineering Manager  
J. Wilson, Site Maintenance Director  
J. Ramski, Outage Manager  
A. Bussiere, Information Technology Project Manager  
B. Gierach, Information Technology Manager  
J. Golding, Inspection Lean and System Engineering Supervisor  
D. Halverson, Information Technology Specialist  
R. Harrsch, Engineering Director and acting Site Vice President  
K. Locke, Licensing Engineer  
S. Manthei, Licensing Engineer  
B. Woyak, Licensing Manager

#### U.S. Nuclear Regulatory Commission

J. Cameron, Chief, Reactor Projects Branch 4  
R. Daley, Chief, Division of Reactor Safety, Engineering Branch 3  
M. Jeffers, Chief, Division of Reactor Safety, Engineering Branch 2

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

|  |     |  |
|--|-----|--|
| 05000266/2016002-01<br>05000301/2016002-01 | NCV | Failure to Perform Required Fire Watches in Areas Containing Transient Combustibles (Section 1R05.1)   |
| 05000266/2016002-02<br>05000301/2016002-02 | NCV | Submerged Safety-Related EDG Fuel Oil Transfer Pump Cables (Section 1R06.1)                            |
| 05000266/2016002-03<br>05000301/2016002-03 | URI | Suitability of Reactor Protection System and Engineered Safeguards System Components (Section 1R12.1)  |
| 05000266/2016002-04                        | NCV | Violation of Technical Specifications During Mode 4 Entry with LCO 3.6.6 Not Met (Section 1R20.1.b(1)) |
| 05000266/2016002-05<br>05000301/2016002-05 | FIN | Fuel Assembly Move Sequence Planned Incorrectly (Section 1R20.1.b(2))                                  |
| 05000266/2016002-06<br>05000301/2016002-06 | NCV | Incorrect Wiring Causes Transformer Lockout (Section 1R20.1.b(3))                                      |

### Closed

|  |     |  |
|--|-----|--|
| 05000266/2016002-01<br>05000301/2016002-01 | NCV | Failure to Perform Required Fire Watches in Areas Containing Transient Combustibles (Section 1R05.1)   |
| 05000266/2016002-02<br>05000301/2016002-02 | NCV | Submerged Safety-Related EDG Fuel Oil Transfer Pump Cables (Section 1R06.1)                            |
| 05000266/2016002-04                        | NCV | Violation of Technical Specifications During Mode 4 Entry with LCO 3.6.6 Not Met (Section 1R20.1.b(1)) |
| 05000266/2016002-05<br>05000301/2016002-05 | FIN | Fuel Assembly Move Sequence Planned Incorrectly (Section 1R20.1.b(2))                                  |
| 05000266/2016002-06<br>05000301/2016002-06 | NCV | Incorrect Wiring Causes Transformer Lockout (Section 1R20.1.b(3))                                      |



## 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 inspector 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

- AOP 31; Solar Magnetic Disturbance Alert Response; Revision 2
- OP-AA-102-1002; Seasonal Readiness; Revision 13
- AOP 13C; Severe Weather Conditions; Revision 41
- AOP 0.1; Declining Frequency on 345KV Distribution System; Revision 17
- PBNP-MISO-NUC-001; Nuclear Plant Operating Agreement for Point Beach Nuclear Plant; October 24, 2013
- AOP 18; Electrical System Malfunction; Revision 7
- NP 5.2.19; NERC Standard NUC-001 Nuclear Plant Interface Coordination Agreement Control; Revision 2
- OP 2B; 345 KV Transmission System Impacts Upon PBNP Station Operations; Revision 10
- PBNP-ATC-NUC-001; First Revised Amended and Restated NextEra Energy Point Beach, LLC Interface Coordination Agreement with American Transmission Company LLC; Revision 8
- NP 2.1.5; Electrical Communications, Switchyard Access and Work Planning; Revision 25

### 1R04 Equipment Alignment

- AR 02015358; G-05 Numerous Degraded Instruments Leads To Trip
- AR 02085282; Human Performance Error During ORT 3A U2 Safeguards Testing
- AR 02088171; Unit 2 VCT Pressure Lower Than Expected
- AR 02100756; Unexpected Alarms Received During DY-0B Restoration
- AR 02121958; 1SI-843A 1T34A Accumulator Isolation Valve Found Open
- AR 02122199; 4-1-16 Unit 1 'A' RCP Starting Event Timeline
- AR 02126434; U1 Mixed Bed Isolated While Online
- AR 02131450; Unexpected Alarm During 2DY-01 Work
- Checklist CL 16A; Gas Turbine G05; Revision 27
- CL 11A G-01; G-01 Diesel Generator Checklist; Revision 26
- CL 7A Unit 1; Safety Injection System Checklist Unit 1; Revision 36
- CL 7A Unit 2; Safety Injection System Checklist Unit 2; Revision 33
- Control Room Logs for May 19, 2016
- Drawing 110E017 Sheet 2; Safety Injection System Unit 1; Revision 66
- Drawing 110E017 Sheet 3; Safety Injection System Unit 1; Revision 48
- Drawing M-209 Sheet 12; Emergency Diesel Air Starting System; Revision 22
- Drawing M-219 Sheet 22; Fuel Oil System; Revision 15
- Procedure OI 110; Gas Turbine Operation; Revision 24
- Procedure OI 21; Mixed Bed (HOH) Demineralizer Resin Flush and Recharge, 1U1A(B) and 2U1A(B); Revision 23
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- Drawing PBC–218 Sheet 2; Fire Protection for Turbine Building, Aux Building & Containment Elev. 8'-0'; Revision 32
- Drawing PBC–219 Sheet 1; Fire Emergency Procedure 4.1 Aux Building & Containment Elev. 8'-0'; Revision 8
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- OM 3.27; Control of Fire Protection & Appendix R Safe Shutdown Equipment; Revision 59
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- Drawing E-5 Sheet 3; Single Line Diagram 480V MCCs 1B30; Revision 23
- Drawing 499B466 Sheet 1511; Elementary Wiring Diagram Diesel GEN Day Tank Lev. Control; Revision 12
- Drawing E-92 Sheet 38; Wiring Diagram 480V MCC 1B-30, 2B30; Revision 6
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- AR 01849758; Zebra Mussels in the Blowdown Line
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- AR 02122355; Flushing of SW MOV
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- AR 02135689; Revise 50.59 Documentation
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- M-207, Sheet 4; P&ID Service Water System; Revision 30
- M-212, Sheet 2; Circulating Water Screen Wash Diagram; Revision 22
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- RMP 9155-2; Control of Diver Activities in Surge Chamber, Seal Well, and Lake Intake Piping to Crib; Revision 15
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- Drawing M-207; Sheet 1A; PI&D Service Water; Revision 42
- Drawing M-214; Sheet 4; PI&D Auxiliary Steam, Heating Steam, Chilled & Hot Water Systems & Details; Revision 38
- Maintenance Rule Function Scoping and Criteria; June 1, 2016
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- Drawing 10668 CD-1; Wiring Diagram – Interconnect Reactor Protection System Rack 1R1 (1C111) Top; Sheet 1; Revision 14
- Drawing 402944; PC Board Assy-Model 2860 V5; Revision V
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- Drawing Bechtel 6118 E-94; Connection Diagram Local Control Boards and Racks, Rack No. 1C111; Sheet 28; Revision 14

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- AR 01907289; Fire Protection Engineering Request To Remove Cabling
- AR 02111044; Small Cracks In Outer Surface of Fire Barrier Near C-59
- AR 02118551; Use of Assigned Operator Without Written Instructions
- AR 02128513; Phoenix CDF and LERF Values For Y-15 & Y-16 OOS
- Control Room Logs; Dated June 8, 2016
- Drawing PBC-218; Sheet 3; Fire Protection For Turbine Building, Auxiliary Building & Containment Elevation 26'; Revision 16
- Fire Hazards Analysis Report; Fire Zone 187; September 2015
- Master Data Book 3.2.4, Panel 2B03; Revision 12
- Master Data Book 3.2.4, Panel 2B04; Revision 13
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- Point Beach Unit 1 Phoenix Risk Summary Report For June 20, 2016
- Point Beach Unit 1 Phoenix Risk Summary Report For May 11, 2016
- Point Beach Unit 1 Safety Monitor Summary Report For February 16, 2016
- Point Beach Unit 2 Phoenix Plant Configuration Reports For May 11, 2016
- Point Beach Unit 2 Phoenix Risk Summary Report For June 20, 2016
- Point Beach Unit 2 Phoenix Risk Summary Report For May 11, 2016
- Point Beach Unit 2 Safety Monitor Summary Report For February 16, 2016
- Procedure NP 10.3.7; Online Safety Assessment; Revision 35
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- Procedure OM 3.26 Use of Dedicated / Assigned Operators; Revision 16
- Procedure OP-AA-102-1003; Guarded Equipment; Revision 10
- Procedure RMP 9057; Fire Barrier Penetration Fire Seal; Revision 25
- Procedure WM-AA-201; Work Order Identification, Screening and Validation Process; Revision 21
- Station Logs Search; February 12-17, 2016
- Station Logs; February 16, 2016
- Station Logs; June 20-21, 2016
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- Unit 1 Current Risk Summary Report for June 8, 2016
- Unit 1 Phoenix Plant State Report for June 8, 2016
- Unit 2 Current Risk Summary Report for June 8, 2016
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- FSAR Appendix A.1; Station Blackout; September 2015
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- Point Beach Nuclear Plant License Amendment 238 and 241; March 25, 2011
- AR 02126063; Excessive Seal Leakage
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- Technical Assessment for Reportability (AR 01718806); Void Found During U1 Sentinel Point Monitoring; January 20, 2012
- AR 02122593; UT Exam Finds Small Void Inside Unit 1 Containment (GAMP)
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- OI 91; Spent Fuel Bridge Hoists; Revision 30
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- AR 02126297; Documentation of Two NRC Concerns
- NPC-28508; Technical Specification Change Request No. 88 Heavy Load Restrictions, Safety-Related Snubbers, and Miscellaneous Administrative Changes Point Beach Nuclear Plant, Units 1 and 2; March 16, 1984
- Control Room Log Entries; March 17, 2016
- Control Room Log Entries; March 21, 2016
- Control Room Log Entries; April 19, 2016
- Letter from C.W. Fay, Wisconsin Electric Power Company to H.R. Denton, NRC; Submittal of Additional Information in Response to Draft Technical Evaluation Report NUREG-0612, "Control of Heavy Loads" Point Beach Nuclear Plant, Units 1 And 2; September 18, 1983
- SLP 4; Safe Load Path and Rigging Manual, Auxiliary Building Main Crane; Revision 13
- AD-AA-100-1004; Preparation, Revision, Review and Approval of Site-Specific Procedures; Revision 17
- CE 02110870; Condition Evaluation for Spent Fuel Handling Bridge Crane Control of Heavy Loads Requirement; Revision 0
- NP 8.4.7; Control of Safe Load Path and Rigging Manual; Revision 14
- SLP 10; Safe Load Path and Rigging Manual, Load Weight Listings and Rigging Figures; Revision 28
- OI 4A; Offset Spent Fuel Handling Tool; Revision 4
- OI 4A; Offset Spent Fuel Handling Tool; Revision 5
- OI 4A; Offset Spent Fuel Handling Tool; Revision 6
- 10 CFR 50.59 Screening; OI 4A (PCR1955171), Offset Spent Fuel Handling Tool; April 24, 2015
- NPC-28580; Modification to Technical Specification Change Request No. 88 Heavy Load Restrictions, Safety-Related Snubbers, and Miscellaneous Administrative Changes Point Beach Nuclear Plant, Units 1 and 2; September 25, 1984
- NPC-36314; Letter from J.R. Miller, NRC to C.W. Fay, Wisconsin Electric Power Company regarding License Amendments 91 and 95 to Facility Operating Licenses DPR-24 and DPR-27, Point Beach Nuclear Plant, Units 1 and 2; April 8, 1985
- NPC-36025; Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendments 91 and 95 to Facility Operating License Nos. DPR-24 and DPR-27 Wisconsin Electric Power Company Point Beach Nuclear Plant, Units Nos. 1 and 2 Docket Nos. 50-266 and 50-301; April 8, 1985
- POD 02085305; Limits on Operability for A06 Busses; November 12, 2015
- SOMS Graph Plot of 1/2A-06 Room Temperatures from May 25, 2015 to May 26, 2016
- AR 02125424; OI 168 Has Non Conservative Limit for G03/G04 Operability
- AR 02127269; CR2125424 Requires Additional Resolution
- AR 02132072; Summer readiness – AOP-30 50.59 Eval Rejected
- SCR 2015-0118; 10 CFR 50.59 Screening for Procedure Changes due to Revised Operability Constraints on the Train B Switchgear Rooms; November 2, 2015
- AR 02085305; Limits on Operability for A06 Busses
- POR 02124656; Cable Spreading Room AC Unit Found Tripped Off; April 18, 2016
- AR 02124656; Cable Spreading Room AC Unit Found Tripped Off
- Calculation 2005-0054; Control Building GOTHIC Temperature Calculation; Revision 7
- Control Room Log Entries for April 11, 2016
- WO 40418829; OSW-02818-O – Valve stem clean & lube; April 11, 2016

- Calculation 2005–0055; DGB GOTHIC Model and Temperature Calculation; Revision 2
- Calculation 2005–0055; DGB GOTHIC Model and Temperature Calculation; Revision 1
- Calculation 2005–0055; DGB GOTHIC Model and Temperature Calculation; Revision 0
- POR 2052030; POR Request for W–185A & B A–06 Switchgear Room Fans; July 20, 2015
- SCR 2016–0058; 10 CFR 50.59 Screening for [Changing] Outside Air Operability Temperature at 97.5°F for G–01/G–02 and 95°F for G–03/G–04; May 24, 2016
- POD 02131629; Analysis Application Error – Revise POD 01887365–05; June 3, 2016
- POR 02131629; Analysis Application Error; June 14, 2016
- POR 02135482; NRC Identified Issue on Past Operability for A06 SWGR Rooms; June 23, 2016

### 1R19 Post-Maintenance Testing

- AR 02111420; 2RE–212 Detector Randomly Alarming During PMT
- AR 02114794; WO PMT Review Assignment Not Standard Across Fleet
- AR 02115951; Odor During 2P–2B Capacity Check For IT–22 PMT
- AR 02116299; Requirements Of NP 7.4.3 Not Strictly Adhered To IN 2013 WO
- AR 02118526; Air Leak On 1MS–2053–O CSD Preventing Operation
- AR 02120979; SW Pump P–032C–M Motor Vibes Exceed WO Criterion
- AR 02128560; W–183A G–03 EDG RM Standby Exhaust Fan PMT Unsat
- AR 02129941; Quality Record Trail for PMT/RTS Impacted by EWP
- AR 02134941; Discharge Check Valve Does Not Seat Properly
- AR 02134955; K–502, Air Leak on Evacuator Downstream of the Compressor
- AR 02136309; GT–107 Foreign Material Found in Check Valve Seat
- AR 02136923; G–04 Wattmeter Indications not Consistent with Other EDG's
- AR 02139709; Both W–14 CR Charcoal Fans During PMT
- AR 02141348; Pump Discharge Pressure Recorded As Differential Pressure
- Calculation N–92–086; ECCS Pump Protection; Revision 5
- Control Room Log Entries for June 1, 2016
- DBD 11; Safety Injection and Containment Spray System; Revision 23
- MA–AA–101–1000–F03; FME Multiple Initial and Closeout Inspection Signature Form; Revision 1
- MA–AA–101–1000–F04; Foreign Material Exclusion Checklist (FMEC); Revision 4
- MA–AA–101–1000–F05; Loss of Integrity Notification and Recovery Plan; Revision 3
- OI 163; SI, RHR, and CS Pump Runs and Venting SI Pump Casings; Revision 16
- Procedure RMP 9216–3A; Service Water Pump Vibration Testing and Balancing For Post Maintenance Testing; Revision 1; Completed on March 28, 2016 Under WO 40103519–24
- SCR 2015–007; Establishing New Inservice Testing Program Acceptance Criteria For P–32A, Service Water Pump, After Motor Replacement; February 11, 2015
- TS 84; Emergency Diesel Generator G-04 Monthly; Revision 35
- WO 40103519 01; P–032C Replace Pump Per EC272153
- WO 40103519 02; P–032C–M Remove SWP Motor Per RMP 9216–1 EC272153
- WO 40103519 03; P–032C–M Reinstall Motor Per RMP 9216–1A
- WO 40103519 28; P–032C Performance of IT 07C
- WO 40103519 31; Operability Testing and Supplemental Data Collection For P–32C
- WO 40217878; G–04 Operations RTS/PMT; June 9, 2016
- WO 40260572; A52–HK–1200–18; Overhaul ABB 5HK350 Breaker, June 9, 2016
- WO 40370958; 1P–015A–M, MCE ANALYZE MOTOR (1A52–59/1A–05) W/RIC; June 20, 2016
- WO 40395018; G–04 EDG Kilo Watt Meter; June 9, 2016
- WO 40406778; G–04 Perform Annual EDG Air Cleaner Inspection; June 8, 2016

- WO 40436079-01; Installation of Ground Fault Remedy in VFD for 1P-2A; May 19, 2016
- WO 40436079-02, 1P-2A Energized Testing & 5 Minute Run; May 19, 2016
- WO 40469139; Discharge Check Valve Does Not Seat Properly; June 1, 2016

#### 1R20 Outage Activities

- AR 02122199; 4-1-16 Unit 1 'A' RCP Starting Event Timeline
- AR 02122346; Unplanned TSAC 3.6.6.C on Unit 1
- CL 2A; Completed Defueled to Mode 6 Checklist; March 26, 2016
- CL 2B; Completed Mode 6 to Mode 5 Checklist; March 27, 2016
- CL 2C; Mode 5 To Mode 4 Checklist; Revision 25
- CL 2D; Completed Mode 4 to Mode 3 Checklist; April 2, 2016
- Control Room Shift Turnover Checklist Unit 2; Revision 44
- Drawing E-98; Sheet 11; Connection Diagram Local Devices Transformers 1X-01 – 1X-04, 1X06, 1X13 & 1X14; Revision 18
- Drawing MGR-10104; Sheet 1; Internal Control Wiring Diagram High Voltage Station Auxiliary Transformer 1X03; Revision 01
- Fire Brigade Member Individual Shift Staffing Report from February 28, 2016 to March 10, 2016
- LER 05000266/2013-002; Condition Prohibited By Technical Specifications
- PBF-9244; Evaluation of Mode Change Acceptability; Containment Spray Train OOS; April 2, 2016
- Procedure OP 1A; Cold Shutdown To Hot Standby Unit 1; Revision 10
- Procedure OP 1A; Cold Shutdown To Hot Standby Unit 1; Revision 11
- Procedure REI 26.0; Fuel/Insert/Component/ Movement Planning; Revision 21
- Spent Fuel Pool Map of Fuel Assemblies With Cooling Times Less Than 295 days; May 2, 2016
- Spent Fuel Pool Map of Rack Foot Locations; May 2, 2016
- Station Log Search; 1X03; April 2013 to April 2016
- Station Logs; April 1-2, 2016
- U1R36 Mechanical and Electrical Maintenance Represented Employees Work Schedules; March 8, 2016
- U1R36 Operations Shift Represented Employees Work Schedules; March 1, 2016
- U1R36 Operations Shift Supervisory Employees Work Schedules; March 1, 2016
- U1R36 Outage Safety Review Supporting Documentation
- U1R36 SDS Risk Profile Printed on February 2, 2016
- U1R36 Shutdown JITT Roster and Schedules; February 2, 2016
- Unit 1 Operating Supervisor Individual Shift Staffing Report from February 28, 2016 to March 10, 2016
- Unit 2 Operating Supervisor Individual Shift Staffing Report from February 28, 2016 to March 10, 2016
- Core Operating Limits Report (COLR) Unit 1 Cycle 37 (U1C37)
- PBF-5101; Fuel/Insert/Component Movement; U1R36 Cleaning; March 18, 2016
- PBF-5101; Fuel/Insert/Component Movement; U1R36 Offload; March 16, 2016
- PBF-5101; Fuel/Insert/Component Movement; U1R36 Reload; March 24, 2016
- PBF-5101; Fuel/Insert/Component Movement; U1R36 NFV Moves; March 18, 2016
- PBF-5101; Fuel/Insert/Component Movement; U1R36 New Fuel Receipt; November 23, 2015
- PBF-5101; Fuel/Insert/Component Movement; April 11, 2016
- WO 40343307 01; Initial Criticality and ARO Physics Tests
- Procedure 1ICP 05.064; Reactor Vessel Level Outage Calibration

- Procedure 0–SOP–FH–001; Fuel/Insert/Component Movement in the Spent Fuel Pool or New Fuel Vault; Revision 27
- Clearance Coversheet; 1 RH SOP–RH–002
- Clearance Tag List; 1 RH SOP–RH–002
- Drawing M–201; Sheet 3; S.G. Blowdown System; Revision 33
- Drawing M–201; Sheet 1; Main & Reheat Steam System; Revision 62
- Procedure PI–AA–104–1000; Corrective Action Nuclear; Revision 8
- Procedure OP 13A Unit 1; Secondary System Startup Unit 1; Revision 9
- Procedure OP 13B Unit 1; Secondary System Shutdown Unit 1; Revision 7
- AR 02121209; CL–1E Unit 1 Att. BR & BS Potential For Untracked Openings
- Clearance Coversheet; 1R34 Refuel Outage; 1 MS MS Admin Holding 01
- Clearance Tag List; 1R34 Refuel Outage; 1 MS MS Admin Holding 01
- Clearance Coversheet; 1R34 Refuel Outage; 1 MS MS Admin with MSIV 01
- Clearance Tag List; 1R34 Refuel Outage; 1 MS MS Admin with MSIV 01
- Clearance Coversheet; 1R34 Refuel Outage; 1 MS MS Admin with MSIV 02
- Clearance Tag List; 1R34 Refuel Outage; 1 MS MS Admin with MSIV 02
- Clearance Coversheet; 1R34 Refuel Outage; 1 MS MS Admin No MSIV 01
- Clearance Tag List; 1R34 Refuel Outage; 1 MS MS Admin No MSIV 01
- Spent Fuel Pool Map with Fuel Enrichment Indicators; April 20, 2016
- Point Beach Unit 1, Cycle 37 Reference Core Loading Pattern

#### 1R22 Surveillance Testing (71111.22)

- 1ICP 02.001RD; Reactor Protection and Engineered Safety Features Red Channel Analog 92 Day Surveillance Test; Revision 19
- AR 02099997; 1SI–850 Open Stroke Time Outside of Acceptance Criteria
- AR 02122961; Missed Technical Specifications Surveillances/Invoked SR 3.0.3
- AR 02126871; Application Of CFR 50.59 To IST Acceptance Criteria Changes
- AR 02134597; 2016 CAP FSA: Operability Determination 1SI-850B Stroke Time
- AR 02138564; Perform Section 5.4.3 of TS 76
- Calculation 2001–0001; Hydraulic Pressures Associated with SI–850 Valves; Revision 1
- Control Room Log Entries; April 2, 2016
- ICI 12; Selection of M&TE for Field Calibrations; Revision 10
- IT 40 Train B; Safety Injection Valves Train B Unit 1; Revision 5
- OI–135E; LHSI Core Deluge Venting Train A Inside Containment Unit 1; Revision 6
- SCR 2007–0215; 10 CFR 50.59 Screening of Revisions for IT 40, IT 40B and IT 531 Following 1SI–850B Solenoid Replacement; December 13, 2007
- WO 40390974; 1–TS–ECCS–002 Train B; April 1, 2016
- WO 40390978; 1–TS–ECCS–002 Train A; April 2, 2016
- WO 40394557; Unit 1 Safety Injection Valves; April 6, 2016
- WO 40406990; 1ICP 2.1RD – RP/SG Analog – Red; June 6, 2016
- WO 40416223; 1SI850B–O/Stroke Time Near the Upper Limit & Had to; March 29, 2016
- WO 40457943–02; Perform UT of Unit 1 Train A Sentinel Points (in CTMT); April 3, 2016
- WO 40457943–03; OPS Perform OI–135E for Unit 1 SI Train A (CTMT); April 5, 2016
- WO 40457943–05; OPS Perform OI–135E for Unit 1 SI Train A (CTMT); April 5, 2016
- NEI 04–10; Risk-Informed Technical Specification Initiative 5b; Risk-Informed Method For Control of Surveillance Frequencies; April 2007
- Procedure OP–AA–200–1001; Evaluation of Proposed Changes To Surveillance Test Intervals; Revision 0
- Procedure OP–AA–200–1000; Selection and Screening of Changes To Surveillance Test Intervals; Revision 0

- Procedure OP-AA-200; Surveillance Frequency Change Process; Revision 0
- Procedure OP-AA-200-1003; Independent Decision Making Panel; Revision 0
- Procedure NP 7.7.37; Surveillance Frequency Control Program Manual; Revision 2
- NEE Report No. PBN-BFJR-15-013; Units 1 and 2 ESFAS Testing STI Change Risk Assessment; Revision 0
- WO 40343315; ORT 3B, SI/Los of AC (Train B) Unit 1
- AR 02126871; Application of CFR 50.59 To IST Acceptance Criteria Changes
- Drawing 6090F11507; Sheet 8; Connection Diagram Exciter Cubicle Subpanel (Rear) TBC & TBC (Shorting); Revision E
- AR 01224780; Potential Missed/Unsatisfied NRC Commitment
- Letter From Wisconsin Electric To U.S. NRC; Status Update Electrical Distribution System Functional Inspection Point Beach Nuclear Plant, Units 1 and 2; March 28, 1991
- NEI 99-04 Guidelines For Managing NRC Commitment changes, July 1999
- Surveillance Test Interval Change Evaluation Form; Point Beach Unit 1; SIAS with Loss of Engineered Safeguards AC Test Extension From 18 to 36 Months; Revision 0\
- Onsite Review Group Meeting Minutes; December 10, 2015
- Independent Decision Making Panel Meeting Minutes; November 5, 2015
- Independent Decision Making Panel Meeting Minutes; December 3, 2015

#### 40A1 Performance Indicator Verification

- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 7
- NP 5.2.16; NRC Performance Indicators; Revision 19
- PB Unit 1; Reactor Coolant System Leakage; 1Q2015 through 4Q2015
- PB Unit 2; Reactor Coolant System Leakage; 1Q2015 through 4Q2015
- Performance Indicators; Reactor Coolant System Leakage, Units 1 and 2; 1Q2015 through 4Q2015
- Performance Indicator Data; Units 1 and 2 Various Parameters; January 2015 through January 2016
- SOMS Operator Rounds Module Data for Units 1 and 2; January 2015 through January 2016

#### 40A2 Identification and Resolution of Problems

- AR 01791776; Charging Pump Significantly Louder Than Normal
- AR 01935623; PSL Cyber Security Inspection of Milestone 4 Use of PMDS
- AR 01978746; Reconciliation of Some PAB Masonry Walls
- AR 02018831; WCC Notified of Transient Combustibles in PAB Without Permit
- AR 02036766; TRM 2.1 / OPDT Constant Calibration Discrepancy
- AR 02082407; Inspect/Replace Discharge Check Valves For Broken Spring
- AR 02082817; 2P-002C, Center Check Valve Spring Degraded
- AR 02086994; U2R34 Hot Rod Drop Data Review
- AR 02091231; Off-Line RTO Calculation
- AR 02100801; Develop Plan To Address Prevention Of HU Errors
- AR 02103191; Storage Without Proper Transient Combustible Permits – U2 66'
- AR 02110870; Spent Fuel Handling Bridge Crane Control of Heavy Loads Requirement
- AR 02117663; SFP Moves Required Prior To May 11, 2016
- AR 02124019; RCS B Hot Leg Temperatures Did Not Meet Acceptance Criteria
- AR 02124299; 2RESP 6.2 Used Vs 1RESP 6.2 During Startup – No Adverse Effect
- AR 02126297; Documentation of Two NRC Concerns
- AR 02126894; WL-1850A P-40A Discharge Check Leaks By
- AR 02128480; 1CC-779A Vacuum Breaker Failed 'As Found' Test

- AR 02131127; Cyber Data Transfer Process Not Followed
- AR 02131245; Review Reactor Engineering CAPs To Identify Any Trends
- CNO Action 897; Fleet RE Error Adverse Trend Improvement Plan
- Condition Report Search – Reactor Engineering – Jan 1, 2014 through May 10, 2016
- Condition Report Search; Operations Human Performance; October 1, 2015 – April 20, 2016
- Condition Report Search; Rework; October 10, 2016 – May 10, 2016
- DBD-02; Component Cooling Water System Design Basis Document; Revision 14
- Drawing 684J971 Sheet 1; Waste Disposal – Liquid; Revision 59
- Drawing 684J971 Sheet 1A; Waste Disposal System; Revision 74
- Fleet Reactor Engineering Human Performance Excellence Plan
- IM-AA-102-1007; Cyber Security Controls for Portable and Mobile Devices; Revision 7
- IM-AA-102-1007; Cyber Security Controls for Portable and Mobile Devices; Revision 11
- IM-AA-102-1007-10002; Fleet Cyber Security File Integrity Validation Check; Revision 1
- IM-AA-102-1007-10005; Fleet Cyber Security Tresys XD Air Guideline; Revision 1
- IM-AA-102-1007-10007; Fleet Cyber Security Sophos On an Island (SOI) Update Process Guideline; Revision 0
- IM-AA-102-1007-F01; Portable and Mobile Device Data Transfer Log; Revision 5
- IM-AA-102-1007-F02; Laptop / Test Equipment Request Form; Revision 7
- NPC 99-04447; DBD-02 Component Cooling Water Validation Report; June 22, 1999
- PB-AT-004 AR Attributes Report; Trend A; Oct 10, 2015 – May 10, 2016
- PB-AT-004 AR Attributes Report; Trend C; Oct 10, 2015 – May 10, 2016
- PB-AT-004 AR Attributes Report; Trend D; Oct 10, 2015 – May 10, 2016
- PB-AT-004 AR Attributes Report; Trend M; Oct 10, 2015 – May 10, 2016
- PB-AT-004 AR Attributes Report; Trend P; Oct 10, 2015 – May 10, 2016
- Point Beach Margin Management Summary Open Issues List; May 31, 2016
- Point Beach Open Prompt Operability Determination List
- Point Beach Operator Work Around Open Item List; May 2016
- Point Beach Unit 1 Top 10 Equipment Reliability Issues List; May 17, 2016
- Point Beach Unit 2 Top 10 Equipment Reliability Issues List; May 17, 2016
- Procedure LI-AA-102-1002; Part 21 Reporting; Revision 6
- Procedure OI 15; Charging Pump Local Control Station Operation; Revision 20
- Procedure PI-AA-207; Trend Coding and Analysis; Revision 10
- Procedure PI-AA-207-1000; Station Self-Evaluation and Trending Analysis; Revision 4
- Procedure PI-AA-207-1003; Control and Application of Trend Codes and Keywords; Revision 4
- Procedure REI 52.0; Core Map / Gap Check Instructions
- Procedure RMP 9003-9; Charging Pump Suction and Discharge Valve Overhaul; Revision 10
- Procurement Engineering Evaluation Record; 469618
- RE Human Performance Errors Spreadsheet (2013-2015)
- WO 40454767; SFP Moves Required Prior To May 11, 2016
- AR 02102489; FBD Assignment 02085043-01 Requires Reassignment
- AR 02129276; Needed FACP-7/8 Temporary Remote Alarm Capability
- AR 02091359; Fireworks System Failure
- AR 02110084; FACP Not Alarming in the Control Room
- AR 02118705; 1-PT-FP-001 Containment Fire Detector Test Discrepancies
- AR 02122527; FACP-1 Communication Loop Causes Delayed Indication of Fire
- Condition Report Search; FACP-007; April 20, 2005 – April 20, 2016
- Procedure EPIP 1.2.1; Emergency Action Level Technical Basis; Revision 15
- NRC EPFAQ 2015-002; April 20, 2015
- AR 02110914; Work Instructions In EWP Do Not Match NAMS
- Documentation of Maintenance Rule Performance Criteria; Fire Protection; January 15, 2016

- Maintenance Rule Function List; Fire Protection; March 12, 2013
- Fire Protection Evaluation Report, Section 4.8 Corrective Action; Revision 17
- Procedure EPMP 9.0; Equipment Important To Emergency Response; Revision 7
- Point Beach Operator Challenges List; 2<sup>nd</sup> Quarter 2016

#### 4OA3 Follow-Up of Events and Notices of Enforcement Discretion

- ACE 02117325; Thru-wall Leak on 1CV-200B, Letdown Orifice B Outlet Control; May 5, 2016
- Maintenance Rule Functional Failure Evaluation for Boric Acid Found on 1CV-200B; April 8, 2016
- AR 02117325; Boric Acid Found on 1CV-200B
- LER [Licensee Event Report] 05000266/2016-001-00; Unit 1 Degraded Condition; May 12, 2016



## LIST OF ACRONYMS USED

|       |  |
|-------|--|
| AC    | Alternating Current                          |
| ADAMS | Agencywide Document Access Management System |
| AOP   | Abnormal Operating Procedure                 |
| AR    | Action Request                               |
| CAP   | Corrective Action Program                    |
| CCW   | Component Cooling Water                      |
| CDF   | Core Damage Frequency                        |
| CFR   | <i>Code of Federal Regulations</i>           |
| DBD   | Design Basis Document                        |
| DRP   | Division of Reactor Projects                 |
| EC    | Engineering Change                           |
| ECCS  | Emergency Core Cooling System                |
| EDG   | Emergency Diesel Generator                   |
| FA    | Functional Assessment                        |
| FPER  | Fire Protection Evaluation Report            |
| FSAR  | Final Safety Analysis Report                 |
| IMC   | Inspection Manual Chapter                    |
| IP    | Inspection Procedure                         |
| KV    | Kilovolt                                     |
| LCO   | Limiting Condition for Operation             |
| LLC   | Limited Liability Corporation                |
| LOC   | Licensed Operator Continuing Training        |
| NCV   | Non-Cited Violation                          |
| NRC   | Nuclear Regulatory Commission                |
| OA    | Other Activities                             |
| OOS   | Out of Service                               |
| OSP   | Outage Safety Plan                           |
| PAB   | Primary Auxiliary Building                   |
| PM    | Planned or Preventative Maintenance          |
| PMDS  | Portable Mobile Devices                      |
| PMT   | Post-Maintenance Testing                     |
| RFO   | Refueling Outage                             |
| RHR   | Residual Heat Removal                        |
| RPS   | Reactor Protection System                    |
| SDP   | Significance Determination Process           |
| SRA   | Senior Risk Analyst                          |
| SSC   | Structures, Systems, and Components          |
| SW    | Service Water                                |
| TS    | Technical Specification                      |
| TSO   | Transmission System Operator                 |
| URI   | Unresolved Item                              |
| WO    | Work Order                                   |
| WR    | Work Request                                 |

R. Coffey

- 2 -

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Sincerely,

*/RA/*

Jamnes Cameron, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure:  
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