



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

October 29, 2015

Mr. Eric McCartney  
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 05000266/2015003; 05000301/2015003**

Dear Mr. McCartney:

On September 30, 2015, 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 October 14, 2015, with you and other members of your staff.

Based on the results of this inspection, three NRC-identified findings of very low safety significance were identified. Two of the findings involved violations of NRC requirements. Additionally, one licensee-identified violation is listed in Section 40A7. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity 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 the Regional Administrator, U.S. Nuclear Regulatory Commission, Region III; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and 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.

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

E. McCartney

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inspection in the NRC's Public Document Room or from the Publicly Available Records (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 John Rutkowski Acting for/***

Jamnes Cameron, Chief  
Branch 4  
Division of Reactor Projects

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

Enclosure:  
IR 05000266/2015003; 05000301/2015003  
w/Attachment: Supplemental Information

cc w/encl: Distribution via LISTSERV®

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000266/2015003; 05000301/2015003

Licensee: NextEra Energy Point Beach, LLC

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: Two Rivers, WI

Dates: July 1, 2015 through September 30, 2015

Inspectors: D. Oliver, Senior Resident Inspector  
K. Barclay, Resident Inspector  
E. Coffman, Acting Senior Resident Inspector  
J. Mancuso, Acting Resident Inspector  
R. Baker, Operations Engineer  
B. Bartlett, Project Engineer  
V. Myers, Senior Health Physicist  
B. Palagi, Senior Operations Engineer  
J. Rutkowski, Project Engineer

Approved by: J. Cameron, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000266/2015003, 05000301/2015003; 07/01/2015–09/30/2015; Point Beach Nuclear Plant, Units 1 & 2; Operability Determinations and Functionality Assessments and Follow-Up of Events and Notices of Enforcement Discretion.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Three Green findings were identified by the inspectors. Two of the findings were considered NCVs of NRC regulations. 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 June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas" effective date 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" Revision 5, dated February 2014.

### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance for the licensee's failure to follow procedure EN-AA-203-1001, "Operability Determinations/Functionality Assessments," Revision 19. Specifically, when the licensee identified that internal flood sources in the diesel generator building (DGB) were larger than the drain capacity, they failed to identify all affected structures, systems, and components (SSCs). The DGB contains predominately Train B emergency power systems; however, the fuel oil transfer pumps for the Train A emergency diesel generators are located in the southeast corner of the building. The licensee failed to assess the effects of flooding on the Train A fuel oil transfer pumps. The licensee's corrective actions included the creation of an adverse condition monitoring plan, which implemented an hourly flood watch in the DGB when the fire pump was manually started.

The inspectors determined that the finding was more than minor, because if left uncorrected, it would potentially result in a more safety significant issue. Specifically, the failure to evaluate the effects of flooding on all SSCs resulted in inadequate compensatory measures. The inspectors determined the finding could be evaluated using the significance determination process (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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. For the time period in question, May 17, 2015 to September 17, 2015, the inspectors reviewed the security door card reader reports and starting sump levels for the DGB and found that during times when the fire pumps were running, station personnel had toured the DGB at a frequency that would have identified flooding conditions before a loss of system function. The inspectors concluded that the finding was of very low safety significance (Green), because the inspectors answered "No" to the Mitigating Systems screening questions. This finding has a cross-cutting aspect of Evaluation (P.2), in the area of Problem Identification and Resolution (PI&R), for failing to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. (Section 1R15.1)

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure that a non-Category I (seismic) component failure, that results in flooding, would not adversely affect safety-related equipment needed to get the plant to safe shutdown (SSD) or to limit the consequences of an accident. Specifically, the design of Point Beach did not ensure that the Residual Heat Removal (RHR) pumps would be protected from all credible non-Category I (seismic) system failures. The licensee's corrective actions included an extensive internal flooding design review, which will result in an updated Final Safety Analysis Report (FSAR) with a more detailed description of the station's flooding licensing basis; modifications to multiple flood barriers to bring them into compliance with the licensee's flooding licensing basis; installation of additional flood level alarms where necessary, and evaluation or modification of service water (SW) piping to properly qualify it as seismic.

The inspectors determined that the finding was more than minor because it was associated with the Design Control attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inadequate design resulted in an unanalyzed condition and loss of safety function of the RHR system while the plants were in Modes 4, 5, and 6, when relying on the RHR system for decay heat removal. 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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. The inspectors answered "yes" to question 2 of the screening questions because the finding represented a loss of safety function. Thus the inspectors consulted the Region III Senior Risk Analysts (SRAs) who performed a detailed risk evaluation and determined that the finding was of very low safety significance (Green). The inspectors determined that the associated finding did not have a cross-cutting aspect because the finding was not reflective of current performance. (Section 40A3.1)

- Green/SLIV. The inspectors identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance for the licensee's failure to perform a safety evaluation to demonstrate that the removal of statements from the FSAR did not require a license amendment. Specifically, the licensee failed to perform a safety evaluation to determine whether removing an FSAR statement, which defined the RHR pump cubicle design flood height as seven feet, could be performed without a license amendment. The licensee entered the deficiency in their CAP as Action Request (AR) 02069425 by which the licensee intends on re-evaluating the 1996 FSAR change.

The inspectors determined that the finding was more than minor because the finding, if left uncorrected, would become a more significant safety concern. Specifically, inappropriately removing the information from the FSAR allowed the licensee to decrease the design basis flood protection height of the RHR compartments and significantly reduced the available time to isolate the leaking RHR pump seal. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process instead of the SDP because they are considered to be violations that potentially impede or impact the regulatory process. In addition, the associated violation was determined to be more than minor because the inspectors could not reasonably determine that the changes



would not have ultimately required NRC prior approval. 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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. The inspectors concluded that the finding was of very low safety significance (Green), because the inspectors answered "No" to the Mitigating Systems screening questions. The inspectors determined that the associated finding did not have a cross-cutting aspect because the finding was not reflective of current performance. (Section 4OA3.1)

### **Licensee-Identified Violations**

#### **Cornerstone: Barrier Integrity**

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. This violation and associated CAP tracking number are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

#### Unit 1

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

#### Unit 2

The unit operated at or near full power for the inspection period, except for brief power reductions to conduct planned maintenance and surveillance activities with two exceptions. On September 8, 2015, reactor power was reduced to 97 percent in response to a momentary closure of a governor valve. The unit was subsequently restored to full power on the same day. On September 16, 2015 the unit entered coastdown in preparation for the upcoming scheduled refueling outage (RFO), U2R34. Unit 2 remained in coastdown through the end of the inspection period, finishing the period at 89 percent power.

### 1. REACTOR SAFETY

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

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

##### .1 External Flooding

##### a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis wave run-up flooding event. The evaluation included a review to verify that systems required to be protected from the wave run-up event, which included the SW pumps, Train A emergency diesel generators, 1A-05 and 2A-05 4160 volt safety-related distribution buses, and turbine driven auxiliary feed water pumps, were protected from the adverse effects of the wave event. As part of this evaluation, the inspectors reviewed the licensee's abnormal operating procedure (AOP) and other implementing procedures for mitigating the design basis wave run-up event to ensure that they could be implemented as written. The inspectors inspected portions of the pre-staged flood barrier inventory to confirm that the temporary flood barriers were stored in the correct location, contained the correct number of barriers, and that the barriers were in good material condition. The inspectors also confirmed that cabinet seal serial numbers on multiple sand bag storage cabinets matched the last recorded serial numbers from the previous inventory. The inspectors walked down portions of the protected area between the SW pump house and the turbine building to confirm that no structural gaps or leakage paths existed that could have bypassed flood barriers. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one external flooding sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

.2 Readiness For Impending Adverse Weather Condition—Heavy Rainfall/External Flooding Conditions

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the expected flooding conditions based on predicted rainfall. As part of this evaluation, the inspectors observed the licensee as they implemented their AOP attachment for potential flooding concerns. The observation included walking down the turbine building, primary auxiliary building, and circulating water pump house to confirm that no flooding conditions affecting safety-related equipment were in progress. Additionally, the inspectors checked for obstructions that could prevent draining, verified that the submersible pumps and associated hoses were properly staged, and confirmed that cabinet seal serial numbers on multiple sand bag storage cabinets matched the last recorded serial numbers from the previous inventory. The inspectors also walked down portions of the protected area and confirmed that no obstructions or gaps existed which would inhibit site drainage during the predicted flood conditions or allow water ingress past a barrier. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one readiness for impending adverse weather condition sample as defined in 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:

- 1P-35B diesel driven fire pump after testing;
- 2P-29 turbine-driven auxiliary feedwater pump after testing; and
- G-03 emergency diesel generator (EDG) following endurance run.

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, 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.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection (FP) 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 Zones 552 and 553: SW and circulating water (CW) pump rooms;
- Fire Zones 770 and 773: G-03 diesel and switchgear rooms;
- Fire Zone 771: 'A' EDG fuel oil pump room; and
- Fire Zones 775 and 777: G-04 diesel and switchgear rooms.

The inspectors reviewed areas to assess if the licensee had implemented a FP program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive FP features in good material condition, and implemented adequate compensatory measures for out-of-service (OOS), degraded or inoperable FP 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

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On September 22, 2015, the inspectors observed a fire brigade activation for a simulated fire in the T-32A and B fuel oil storage tanks. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them 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 annual fire protection inspection sample as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the FSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the CW systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area(s) to assess the adequacy of watertight doors and verify drains and

sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- CW pump house; and
- G-03/G-04 EDG building.

Documents reviewed during this inspection are listed in the Attachment to this report.

This inspection constituted two internal flooding samples as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee’s testing of the HX-13A; Train A spent fuel pool (SFP) heat exchanger to verify that potential deficiencies did not mask the licensee’s ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee’s observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this document.

This annual heat sink performance inspection constituted one sample as defined in IP 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 September 9, 2015, the inspectors observed the licensed operators annual operating examination for crew A in the plant’s simulator during licensed operator regualification training (LORT) to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;

- 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 July 17, 2015, the inspectors observed TS-6 with FLUX measurements and pre-outage control rod drive resistance checks. This was an activity that required heightened awareness and had an associated 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 (or equipment) manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications (if applicable).

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.

.3 Biennial Written and Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, as administered by the licensee from August 10, 2015 through September 18, 2015, and required by 10 CFR Part 55.59(a). The results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's LORT Program to meet the requirements of 10 CFR 55.59.

This inspection constituted one annual licensed operator requalification inspection sample as defined in IP 71111.11A.

b. Findings

No findings were identified.

.4 Biennial Review (71111.11B)

a. Inspection Scope

The following inspection activities were conducted during the week of August 31, 2015, to assess: (1) the effectiveness and adequacy of the facility licensee's implementation and maintenance of its Systems Approach to Training (SAT) based LORT Program implemented to satisfy the requirements of 10 CFR 55.59; (2) conformance with the requirements of 10 CFR 55.46 for use of a plant reference simulator to conduct operator licensing examinations and for satisfying experience requirements; and (3) conformance with the operator license conditions specified in 10 CFR 55.53. Documents reviewed are listed in the Attachment to this report.

- Problem Identification and Resolution (10 CFR 55.59(c); SAT Element 5 as Defined in 10 CFR 55.4): The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions to maintain its LORT Program up-to-date. The inspectors reviewed documents related to the plant's operating history and associated responses (e.g., Plant Issues Matrix and Plant Performance Review Reports; recent examination and IRs; and Licensee Event Reports (LERs). The inspectors reviewed the use of feedback from operators, instructors, and supervisors, as well as the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance (QA) oversight activities, including licensee training department self-assessment reports.
- Licensee Requalification Examinations (10 CFR 55.59(c); SAT Element 4 as Defined in 10 CFR 55.4): The inspectors reviewed the licensee's program for development and administration of the LORT biennial written examination and annual operating tests to assess the licensee's ability to develop and administer examinations that were acceptable for meeting the requirements of 10 CFR 55.59(a).



- The inspectors reviewed the methodology used to construct the examination including content, level of difficulty, and general quality of the examination/test materials. The inspectors also assessed the level of examination material duplication from week-to-week for both the operating tests conducted during 2014 and the current year, as well as the written examinations administered in 2014. The inspectors reviewed a sample of the written examinations and associated answer keys to check for consistency and accuracy.
  - The inspectors observed the administration of the annual operating test to assess the licensee's effectiveness in conducting the examinations, including the conduct of pre-examination briefings, evaluations of individual operator and crew performance, and post-examination analysis. The inspectors evaluated the performance of one crew, Team 1 and Team 2, in parallel with the facility evaluators during four dynamic simulator scenarios, and evaluated various licensed crew members concurrently with facility evaluators during the administration of several job performance measures.
  - The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examination and the training planned for the current examination cycle to ensure that the licensee addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans.
- Conformance with Examination Security Requirements (10 CFR 55.49): The inspectors conducted an assessment of the licensee's processes related to examination physical security and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors reviewed the facility licensee's examination security procedure, and observed the implementation of physical security controls (e.g., access restrictions and simulator input/output (I/O) controls) and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the inspection period.
  - Conformance with Simulator Requirements (10 CFR 55.46): The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements. The inspectors reviewed a sample of simulator performance test records (e.g., transient tests, malfunction tests, scenario based tests, post-event tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy corrective action process to ensure that simulator fidelity was being maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics.
  - Conformance with Operator License Conditions (10 CFR 55.53): The inspectors reviewed the facility licensee's program for maintaining active operator licenses to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the

procedural guidance and the process for tracking on-shift hours for licensed operators, and which control room positions were granted watch-standing credit for maintaining active operator licenses. Additionally, medical records for 10 licensed operators were reviewed for compliance with 10 CFR 55.53(l).

This inspection constitutes one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

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 system:

- Reactor protection system using a problem-oriented approach.

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 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 quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

b. Findings

No findings were identified.

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:

- July 6, 2015: K-2A instrument air compressor, W-86 battery room fan, 2DY-02 blue channel instrument bus inverter with bus B-04 relay calibrations;
- July 17, 2015: G-02 EDG endurance run during P-35B; diesel-driven fire pump (DDFP) replacement, TS-6 bus 2A-01 relay calibration, with switchyard factor and Unit 2 power range nuclear instrumentation calibrations;
- July 27, 2015: PBTP 258 acceptance testing of P-35B; DDFP with 1CV-110A boric acid blender flow control valve OOS, 18-month instrument and service air system calibrations, K-3A service air compressor OOS and 1A52-52 bus 1A-04 to bus 2A-04 cross-tie breaker unavailable;
- August 4, 2015: P-32A, P-32B, and P-32C SW pumps OOS with 2P-2C charging pump OOS; and
- August 6, 2015: P-35B DDFP, G-04 EDG, and 2P-2C charging pump OOS.

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 five 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:

- AR 02057684: incomplete surveillance – SR 3.8.9.1 distribution system [for 480VAC B03 and B04 cross-tie breakers];
- FA 02043804: SFP cooler degradation worse & replacement stalled;
- FA 02044783: Reduced available operator response time for DGB flood;
- FA 02063308: NFPA 805 manual action feasibility non-compliance; and
- POD 02052030: POR request for W-185A & B A-06 switchgear room fans.

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 five samples as defined in IP 71111.15–05.

b. Findings

1) Incomplete Functionality Assessment for Flooding in the Diesel Generator Building

Introduction: The inspectors identified a finding of very low safety significance (Green) for the licensee's failure to follow procedure EN-AA-203-1001, "Operability Determinations/Functionality Assessments," Revision 19. Specifically, when the licensee identified that internal flood sources in the diesel generator building (DGB) were larger than the drain capacity, they failed to identify all affected SSCs. The DGB contains predominately Train B emergency power systems; however, the fuel oil transfer pumps for the Train A emergency diesel generators are located in the southeast corner of the building. The licensee failed to assess the effects of flooding on the Train A fuel oil transfer pumps.

Description: During the inspectors' review of Prompt Operability Determination (POD) 02044783, "Reduced Available Operator Response Time For DGB Flood," Revision 1, they found that the licensee had previously identified an error in POD 02044783, Revision 0, which had failed to identify all affected SSCs for a postulated 8-inch fire water pipe leak. The DGB contains predominately Train B emergency power systems; however, the fuel oil transfer pumps for the Train A emergency diesel generators are located in the southeast corner of the building. The licensee had failed to assess the effects of flooding on the Train A fuel oil transfer pumps, which was documented in AR 02055129, and corrected in the revision to the POD. The inspectors' review of the revised POD identified that the updated compensatory measures did not address all circumstances. Specifically, the licensee had measures in place to send personnel to the DGB and check for flooding if a fire pump auto started; however, the licensee failed to address those times when a fire pump

was already running for various plant support or testing activities. The inspectors' review of station logs found that the licensee had previously run a fire pump to support system chlorination, to use the fire hoses to keep excess lake grass off the traveling water screens, and also for annual underground fire main flow testing. The licensee's initial identification of the issue would have qualified for licensee identified credit; however, the inspectors added value when they identified that the licensee's corrective actions in the revision to the POD were not comprehensive.

The licensee documented the inspectors concerns in AR 02074593, and created an adverse condition monitoring plan, which implemented an hourly flood watch in the DGB when a fire pump was manually started.

Analysis: The inspectors determined that the licensee's failure to adequately evaluate the effects of flooding on all SSCs in the DGB was not in accordance with procedure EN-AA-203-1001, Section 4.5.2, Step 2, and Functionality Assessment Form EN-AA-203-1001-F02, which was a performance deficiency warranting further review. EN-AA-203-1001-F02 required the licensee to describe the affected SSCs, which should have included the fuel oil transfer pumps from the Train A diesels. The finding was determined to be more than minor because, if left uncorrected, would potentially result in a more safety significant issue. Specifically, the failure to evaluate the effects of flooding on all SSCs resulted in inadequate compensatory measures.

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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. For the time period in question, May 17, 2015 to September 17, 2015, the inspectors reviewed the security door card reader reports and starting sump levels for the DGB and found that during times when the fire pumps were running, station personnel had toured the DGB at a frequency that would have identified flooding conditions before a loss of system function. The inspectors concluded that the finding was of very low safety significance (Green), because the inspectors answered "No" to the Mitigating Systems screening questions.

This finding has a cross-cutting aspect of Evaluation (P.2), in the area of PI&R for failing to thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the licensee failed to evaluate all SSCs affected by a fire water pipe leak.

Enforcement: This finding does not involve enforcement action because no violation of a regulatory requirement was identified. As corrective actions, the licensee created an adverse condition monitoring plan, which implemented an hourly flood watch in the DGB when the fire pump was manually started. The licensee also created an action item to revise POD 02044783 and formally document the compensatory measures. Because this finding does not involve a violation and is of very low safety significance, it is identified as a finding (**FIN 05000266/2015003-01; 05000301/2015003-01, Incomplete Functionality Assessment for Flooding in the Diesel Generator Building**).

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- 1P-11A component cooling water (CCW) pump following oil change;
- 2DY-02 blue channel instrument bus inverter following preventative maintenance;
- P-35B DDFP after complete replacement;
- P-35B DDFP after modifications;
- Red channel reactor coolant system (RCS) delta temperature instrument following repair;
- Safety-related battery D-106 cell 48 replacement; and
- W-86 primary auxiliary building (PAB) battery & inverter room vent fan.

These activities were selected based upon the SSC'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 (PMT) samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety

function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- 1ICP 02.001WH: white channel reactor protection and safeguards system logic testing (Routine);
- 2ICP 02.001YL: yellow channel reactor protection and safeguards system logic testing, with rod insertion limit verification (Routine);
- IT-03 Train B: low head safety injection (SI) pump and valve test (Routine);
- TS-6: control rod exercise test – Unit 2 (Routine); and
- IT-06 Train A: containment spray pump and valve IST (In-Service 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 in-service 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 four 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.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on August 4, 2015, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. Because the drill involved a simulated hostile action based event, the inspectors observed emergency response operations in the control room simulator and the alternate emergency response facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06–06.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstones: Public Radiation Safety and Occupational Radiation Safety**

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

This inspection constituted one complete sample as defined in IP 71124.08-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the FSAR, the process control program, and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of QA audits in this area since the last inspection to gain insights into the licensee’s performance and inform the “smart sampling” inspection planning.



b. Findings

No findings were identified.

.2 Radioactive Material Storage (02.02)

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste are stored, and evaluated whether the containers were labeled in accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements."

The inspectors assessed whether the radioactive material storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage."

The inspectors evaluated whether the licensee established a process for monitoring the impact of long term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors selected containers of stored radioactive material, and assessed for signs of swelling, leakage, and deformation.

b. Findings

No findings were identified.

.3 Radioactive Waste System Walkdown (02.03)

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in the FSAR, Offsite Dose Calculation Manual, and process control program.

The inspectors reviewed administrative and/or physical controls (i.e., drainage and isolation of the system from other systems) to assess whether the equipment which is not in service or abandoned in place would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the FSAR were reviewed and documented in

accordance with 10 CFR 50.59, as appropriate and to assess the impact on radiation doses to members of the public.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers and assessed whether the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the process control program, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors evaluated whether the tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's process control program correctly described the current methods and procedures for dewatering and waste stabilization (e.g., removal of freestanding liquid).

b. Findings

No findings were identified.

.4 Waste Characterization and Classification (02.04)

a. Inspection Scope

The inspectors selected the following radioactive waste streams for review:

- dry active waste; and
- primary resin.

For the waste streams listed above, the inspectors assessed whether the licensee's radiochemical sample analysis results (i.e., "10 CFR Part 61" analysis) were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analysis for the selected radioactive waste streams.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61 for the waste streams selected above.

The inspectors evaluated whether the licensee had established and maintained an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

b. Findings

No findings were identified.

.5 Shipment Preparation (02.05)

a. Inspection Scope

The inspectors reviewed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness. The inspectors assessed whether the requirements of applicable transport cask certificate of compliance had been met. The inspectors evaluated whether the receiving licensee was authorized to receive the shipment packages. The inspectors evaluated whether the licensee's procedures for cask loading and closure procedures were consistent with the vendor's current approved procedures.

Due to limited opportunities for direct observation, the inspectors reviewed the technical instructions presented to workers during routine training. The inspectors assessed whether the licensee's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

b. Findings

No findings were identified.

.6 Shipping Records (02.06)

a. Inspection Scope

The inspectors evaluated whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number for the following radioactive shipments:

- 14-024C: Unit 2 "A" steam generator (SG);
- 14-024E: four SGs on canal barge;
- 14-024F: four SGs on train;
- 14-042: dry active waste;
- 14-052: fuel cleaning equipment; and
- 15-008: primary resin.

Additionally, the inspectors assessed whether the shipment placarding was consistent with the information in the shipping documentation.

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee

at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the licensee's CAP. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed results of selected audits performed since the last inspection of this program and evaluated the adequacy of the licensee's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index—Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator (PI) for Units 1 and 2, for the period from the third quarter 2014 through the second quarter 2015. 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 narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI emergency AC power system samples as defined in IP 71151-05.

b. Findings

No findings were identified.

## .2 Mitigating Systems Performance Index—High Pressure Injection Systems

### a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems performance for Units 1 and 2, for the period from the third quarter 2014 through the second quarter 2015. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI high pressure injection system samples as defined in IP 71151-05.

### b. Findings

No findings were identified.

## .3 Mitigating Systems Performance Index—Heat Removal System

### a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for Units 1 and 2, for the period from the third quarter 2014 through the second quarter 2015. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI heat removal system 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 PIs 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 Annual Follow-up of Selected Issues: 2RC-431b bellows leak

#### a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item documenting an increase in activity levels in the Unit 2 containment sump A. Specifically, the licensee noted an increasing trend in Iodine-131,

133, and Xenon-133. The inspectors checked Unit 2 RCS leakrate trends, containment humidity, and radiation trends. Additionally, the inspectors entered the Unit 2 containment at power with the licensee to walkdown areas to determine if there were signs of a physical leak in the Unit 2 containment. During the containment entry, a significant accumulation of boric acid was observed by the inspectors and the licensee to have accumulated on the valve actuator of 2RC-431B, Pressurizer Spray Line Pressure Control Valve.

The inspectors performed a review of the licensee's corrective actions specifically for 2RC-431B, the surrounding target equipment, and all other related operational impacts to unit operation with an active RCS to atmosphere leak. Specifically, the inspectors verified the following attributes during their review of the licensee's corrective actions for the RCS leakage:

- complete accurate and timely documentation of the identified problem in the CAP;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- classification and prioritization of the resolution of the problem, commensurate with safety significance;
- action taken in the correction of the identified problem;
- identification of negative or worsening short-term trends associated with equipment performance either directly or indirectly caused by actively leaking component; and
- operating experience was adequately evaluated for applicability, and lessons learned were and are intended to be communicated to the appropriate organizations for implementation.

### Observations

Although a full inspection of 2RC-431B will not be possible until the unit's next RFO, the inspectors noted that the licensee's initial characterization of the leak in AR 02059583, was that it was a bellows leak and packing failure. The licensee made this determination based upon photos taken during the aforementioned containment entry. This and other associated ARs related to the leak did not make reference to the fact that there have been several previous occurrences for these valves on both unit's pressurizers. A brief summary of the history associated with these valves at Point Beach Nuclear Plant, Units 1 and 2, are as follows:

- February 18, 1974: modifications to Unit 1 are implemented to install bellows seal conversion kits to spray valves because packing leakage required shutdowns of the unit. At this time, Unit 2 had already been using this type of arrangement with satisfactory results.
- August 1987: 2RC-431B bellows is replaced due to stem binding preventing the valve from shutting.
- May 1991: 1RC-431A bellows replaced due to valve stem binding issues.
- April 23, 1992: the bellows leak detection line for 1RC-431A was broken off, presumed at the time due to fatigue failure.
- November 23, 2004: 2RC-431A shows indications of leakage from both the bellows and the bellows tell-tale line. No determination for the bellows failure is given.

- May 5, 2005 and July 7, 2005: small amounts of boric acid observed on the bellows tell-tale line for 2RC-431A, and bellows is determined to have failed.
- April 23, 2008: during the replacement of a connected pressure indicator, the bellows tell-tale line for 2RC-431B is discovered to be cracked. Forensic evaluation of the piping attributed the failure to chloride induced transgranular stress corrosion cracking. 2RC-431A is then removed for similar analysis, and revealed cracking on the interior surfaces. Chloride contamination was detected on the interior surfaces of the piping for both valves, with no conclusive determination as to the source of the chlorides.
- December 29, 2008: swabs and follow-up penetrant testing reveals chloride contamination on both 1RC-431A and B valve bellows tell-tale piping. Photographs for 1RC-431A show that failure of the piping was inevitable.
- May 22, 2011: 1RC-431B bellows and packing failed.

The inspectors reviewed the results of previous causal products and external operating experience, and determined that this history demonstrates an equipment reliability issue that appears to be unique to Point Beach specifically related to the tell-tale line failures. The above history illustrates a number of previous occurrences that do not specifically describe a deficiency of NRC requirements at this time. During the upcoming refueling outage the licensee will perform corrective valve maintenance and also perform a causal analysis in accordance with their CAP. The licensee plans on incorporating the inspectors' observations during their assessment. This review constituted one in-depth PI&R sample as defined in IP 71152-05.

b. Findings

No findings were identified.

40A3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000266/2015-001-00: Inadequately Sealed Pipe Penetration Results in an Unanalyzed Condition for Internal Flooding

On November 19, 2014, NRC inspectors, as part of their annual internal flooding inspection, identified potential gaps in sealant material for a pipe penetration through the Unit 2 RHR valve gallery wall that separated both trains of RHR. The licensee subsequently inspected both the Unit 1 and 2 valve gallery walls on November 21, 2014, and found that sealant was never applied to the Unit 1 penetration, which openly communicated between both trains of the Unit 1 RHR pump cubicles approximately three feet above the floor. The penetration gaps, when combined with previously identified flooding design deficiencies, such as new flood sources and unqualified barriers, resulted in the loss of safety function for the RHR system during the previous three year timeframe.

Documents reviewed are listed in the Attachment to this report. This LER is closed.

b. Findings

1) Potential Failure of Multiple Safety-Related Trains During Flooding Events

Introduction: The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the



licensee's failure to ensure that a non-Category I (seismic) component failure, that results in flooding, would not adversely affect safety-related equipment needed to get the plant to SSD or to limit the consequences of an accident. Specifically, the design of Point Beach did not ensure that the RHR pumps would be protected from all credible non-Category I (seismic) system failures.

Discussion: On November 19, 2014, NRC inspectors, as part of their annual internal flooding inspection, identified potential gaps in sealant material for a pipe penetration through the Unit 2 RHR valve gallery wall that separated both trains of RHR. The licensee subsequently inspected both the Unit 1 and 2 valve gallery walls on November 21, 2014, and found that sealant was never applied to the Unit 1 penetration, which openly communicated between both trains of the Unit 1 RHR pump cubicles approximately three feet above the floor. The licensee had previously identified additional flood barrier weakness, pipes that were not seismically qualified, and additional flooding sources, in response to NRC inspector questions, as well as, independent licensee efforts to validate that their internal flooding design was adequate to protect SSD equipment from design basis internal flooding sources. The previous deficiencies were evaluated in operability evaluations, which had concluded that the licensee had not deviated from their overall internal flood design basis of ensuring that a single internal flooding event did not cause the loss of a system needed to safely shutdown the plant. The previous operability conclusions had relied on the accumulation of flood waters to a height of seven feet in a single RHR compartment on each unit, which reduced the amount of flood water that cascaded into the remaining RHR compartments and maintained the operability of the opposite train and overall RHR system function for each unit. The existence of the unsealed or partially sealed penetrations between the RHR pump valve gallery walls invalidated the licensee's unstated assumption in previous operability evaluations that flood waters could not migrate from one RHR compartment to another below the seven foot level.

Significant flooding issues identified included:

- The licensee, while walking down the RHR heat exchanger rooms to answer NRC flood-related inspection questions, identified that unsealed and non-seismic penetrations existed between the #2 and #3 pipeways and the RHR heat exchanger rooms. These unsealed penetrations represented a new conveyance flood path to the RHR pumps. The licensee had previously assessed that flood sources would be directed to the central area outside of the RHR pump cubicles on the lowest level of the PAB. This central area could hold approximately 28,000 gallons of water before spilling over a seven-foot wall into the individual RHR pump cubicles. The newly identified conveyance path allowed water to bypass the central area and accumulate in the RHR valve gallery cubicles, which directly communicate with the RHR pump cubicles through four-inch openings in the walls.
- The licensee identified that the Refueling Water Storage Tank pipe penetration between the façade building and the PAB on each unit was not seismically qualified. Previous analyses by the licensee had credited the large volume of the facade floor and its ability to flood up to the PAB door thresholds before entering the PAB. The pipe penetration, which was below the height of the PAB door thresholds, would need to have met the requirements of a penetration flood barrier, which would include being seismically qualified. Those requirements

were prescribed in a letter from the AEC to the licensee, titled "Supplemental Request for Flooding Analysis of Non-Category I System Sources," dated December 10, 1974.

The licensee's corrective actions included an extensive internal flooding design review, which will result in an updated FSAR with a more detailed description of the station's flooding licensing basis; modifications to multiple flood barriers to bring them into compliance with the licensee's flooding licensing basis; installation of additional flood level alarms where necessary, and evaluation or modification of SW piping to properly qualify it as seismic.

Analysis: The inspectors determined that the licensee's failure to ensure that the RHR pumps would be protected from all credible non-Category I (seismic) system failures was a performance deficiency. The inspectors determined that the finding was more than minor because it was associated with the Design Control attribute of the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inadequate design resulted in an unanalyzed condition and loss of safety function of the RHR system while the plants were in Modes 4, 5, and 6, when relying on the RHR system for decay heat removal. 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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. The inspectors answered "yes" to question 2 of the screening questions because the finding represented a loss of safety function. Thus the inspectors consulted the regional SRA.

### **Detailed Risk Evaluation**

The detailed risk evaluation was performed by Region III SRAs. The increase in core damage frequency ( $\Delta$ CDF) was calculated assuming scenarios involving internal turbine building flooding events. The exposure time (ET) assumed was one year which is the maximum allowed by the SDP.

For the evaluation of the risk significance, the SRAs considered the following flooding events:

- Case 1: Random RHR or CCW leak into the RHR pump cubicles/RHR pipe and valve galleries
- Case 2: Seismic Event – with unit above RHR shutdown cooling (e.g., while in Mode 1 at power)
- Case 3: Seismic Event – with unit on RHR shutdown cooling
- Case 4: RHR pump seal leak
- Case 5: External leakage from outside plant into the Plant Auxiliary Building (PAB)
- Case 6: Random SW or FP system leak in the PAB

**1) Case 1: Random RHR or Component Cooling Water (CCW) Leak in the RHR Pump Cubicles/RHR Pipe and Valve Galleries**

To evaluate the delta risk due to a random RHR or CCW system pipe break in the RHR pump cubicles/RHR pipe and valve galleries (i.e., RHR cubicles), the SRAs first obtained information from the licensee on the lengths of various size piping in these RHR areas. The following information was obtained in Table 1 below: (Note: The two units are reasonably symmetric as far as piping lengths are concerned)

Table 1	Nominal Pipe Diameter (inches)	Approximate Aggregate Length (feet)		
		RHR A	RHR B	Total RHR A + B
CCW	≤ 6	36	137	173
	>6 and ≤10	0	70	70
	>10	0	0	0
RHR	≤ 6	36	146	182
	>6 and ≤10	59	148	207
	>10	0	0	0

The SRAs then determined the frequency of a pipe break using Electric Power Research Institute (EPRI) Report 302000079, "Pipe Rupture Frequencies for Internal Flooding Probabilistic Risk Assessments," Revision 3. The pipe breaks of interest were determined to be those between approximately 100 gpm and 2000 gpm (i.e., in the "Flood" mode range in the EPRI report). A leakage rate of less 100 gpm would allow extensive time to mitigate the flood and thus would not be risk significant, while a leakage rate of greater than 2000 gpm would not allow enough time for action to mitigate the leakage with or without the performance deficiency and thus would not represent a delta risk.

From Table ES-2 of the EPRI report, the following failure rates were obtained in Table 2 below for the CCW and RHR piping in the "Flood" mode" range of leakage:

Table 2	Nominal Pipe Diameter (inches)	Failure Rate (per year/ft)
CCW	≤ 6	3.57E-8
	>6 and ≤10	5.30E-9
RHR	≤ 6	8.09E-9
	>6 and ≤10	2.44E-9

The risk significant time period associated with random pipe leakage in the RHR cubicles is when the unit is on RHR shutdown cooling and with both 1) the SGs unavailable for decay heat removal, and 2) with the reactor cavity not flooded. To obtain a representative ET for when the unit is on RHR shutdown cooling and with both 1) the SGs unavailable for decay heat removal, and 2) with the reactor cavity not flooded, the associated time periods during the last RFOs on each unit were obtained. A time period of approximately seven days was obtained for Unit 1 and a time period of approximately 8.3 days was obtained for Unit 2. In this analysis, a probability of 3.0E-2 (approximately 11 days) was conservatively used that the unit was on RHR shutdown cooling with the SGs unavailable and with the reactor cavity not flooded during the one year ET.

Combining the above two tables and the probability of being on RHR shutdown cooling with the SGs unavailable and with the reactor cavity not flooded, the following information is obtained in Table 3 below:

<b>Table 3</b>	<b>Nominal Pipe Diameter (inches)</b>	<b>Failure Rate (per year/ft)</b>	<b>Total RHR Cubicle Piping Length (feet)</b>	<b>Probability on RHR cooling (with no SGs/reactor cavity not flooded)</b>	<b>Failure Rate/Year (while on RHR cooling (with no SGs/reactor cavity not flooded))</b>
<b>CCW</b>	$\leq 6$	3.57E-8	173	3.0E-2	1.85E-7
	>6 and $\leq 10$	5.30E-9	70	3.0E-2	1.11E-8
<b>RHR</b>	$\leq 6$	8.09E-9	182	3.0E-2	4.42E-8
	>6 and $\leq 10$	2.44E-9	207	3.0E-2	1.52E-8
<b>Total =</b>					<b>2.56E-7</b>

The following information was obtained from the licensee regarding flood volumes in the RHR cubicle areas:

<b>RHR Cubicle Volumes</b>		
<b>Water Level – Significance</b>	<b>Water Level in RHR Cubicle</b>	<b>Gallons</b>
<b>RHR Pump – Unavailable Due to Flooding</b>	<b>22 inches</b>	<b>3261</b>
<b>Degraded Case - Height of Opening Between A and B RHR Cubicles</b>	<b>3 feet</b>	<b>5336</b>
<b>Base Case - Height of Wall Between A and B RHR Cubicles</b>	<b>7 feet</b>	<b>12451</b>

For discussion purposes, assume a 300 gpm leak (i.e., approximately a one-inch pipe break in either CCW or RHR water) due to a random pipe break in an RHR cubicle.

**Base Case:** The 7 foot wall is intact between the RHR A and B Pipe and Valve Galleries.

For this case, it would take approximately 15,712 gallons of water (i.e., 12451 + 3261 = 15712 gallons) to enter the RHR cubicles before both RHR pumps would be unavailable. The time available to isolate a 300 gpm leak is:

**Time Available** <sub>Base Case</sub> = 15712 gallons/300 gpm = **52.4 minutes**

**Degraded Case:** The 7 foot wall has an opening at the 3 foot level between the RHR A and B Pipe and Valve Galleries.

For this case, it would take approximately 8,597 gallons of water (i.e., 5336 + 3261 = 8597 gallons) to enter the RHR cubicles before both RHR pumps would be unavailable. The time available to isolate a 300 gpm leak is:

**Time Available** <sub>Degraded Case</sub> = 8597 gallons/300 gpm = **28.7 minutes**

In the above, conservatively assume that for the **Degraded Case** the Time Available to isolate an RHR or CCW leak in the RHR cubicle is insufficient before both RHR pumps are rendered unavailable due to room flooding [i.e., the Human Error Probability (HEP) is 1.0]. In the **Base Case**, conservatively assume that the HEP is 0 (i.e., the leak would always be isolated before both RHR pumps are rendered unavailable due to flooding). The delta HEP ( $\Delta$ HEP) is thus 1.0. Using these assumptions the delta  $\Delta$ CDF due to flooding in the RHR cubicles is given by the Failure Rate/Year in Table 3 above. That is, the value in Table 3 for the Failure Rate/Year represents the frequency of the event occurring and leading directly to core damage. Thus, the  $\Delta$ CDF = **2.56E-7/yr**.

**2) Case 2: Seismic Event – with Unit above RHR Shutdown Cooling (e.g., while in Mode 1 at Power)**

To evaluate the delta risk due to a seismic event with the unit above RHR shutdown cooling (e.g., while in Mode 1 at power), the following assumptions were made:

- If non-seismic piping failed that could result in flooding in the RHR cubicles and a loss-of-coolant-accident (LOCA) occurred, then core damage was assumed (i.e., the conditional core damage probability (CCDP) was 1.0).
- The ET was assumed to be one year which is the maximum allowed by the SDP.
- In Section 3.1.3.3 of the Point Beach Individual Plant Examination of External Events, it states that plant piping (e.g., including SW, FP, and CW piping) can be screened at a High Confidence of Low Probability of Failure (HCLPF) of 0.3g. The HCLPF value corresponds to a 95 percent probability with a 95 percent confidence level that a seismic event at the HCLPF capacity will not result in damage to the associated component. The SRAs reduced the HCLPF capacity from 0.3g to 0.2g to provide additional margin during a seismic event for the failure of non-seismic piping. The reactor makeup water tank was also assumed, conservatively, to have a HCLPF of 0.2g. Using guidance from NRC's Risk Assessment Standardization Project (RASP) handbook, only the "Bin 2" seismic events were assumed to represent a delta core damage frequency ( $\Delta$ CDF). "Bin 2" is defined in the RASP handbook as seismic events with intensities greater than 0.3g but less than 0.5g. Earthquakes of lesser severity are unlikely to result in large pipe failures and earthquakes of a larger magnitude could result in major structural damage throughout the plant which would not be representative of a risk due to the performance deficiency. The initiating event frequency (IEF) of an earthquake in "Bin 2" was estimated to be 1.29E-5/yr for Point Beach using Table 4A-1 of Section 4 of the RASP handbook. Using a HCLPF capacity of 0.2g, a probability of 1.90E-1 was obtained for the failure of non-seismic piping/tanks in "Bin 2" that could result in flooding in the RHR cubicles.
- The conditional probability of a small loss of coolant accident (SLOCA) and a medium LOCA (MLOCA) for a seismic event in Bin 2 was obtained from Figure 4.5 of the RASP handbook (large LOCAs are not considered credible in Bin 2). These conditional probabilities were given as 4.5E-2 and 4E-3; respectively. The total probability of a LOCA for a seismic event in Bin 2 is thus 4.9E-2.

A bounding value for the  $\Delta$ CDF for Case 2 was obtained as the product of the following factors:

$$\begin{aligned}\Delta\text{CDF} &= [\text{IEF}] \times [\text{Prob}_{\text{Non-seismic pipe failure/tank failure}}] \times [\text{Prob}_{\text{LOCA}}] \times [\text{CCDP}] \times [\text{ET}] \\ &= [1.29\text{E-}5/\text{yr}] \times [1.90\text{E-}1] \times [4.9\text{E-}2] \times [1.0] \times [1.0] \\ &= 1.20\text{E-}7/\text{yr}\end{aligned}$$

### 3) **Case 3: Seismic Event – with Unit on RHR Shutdown Cooling**

The risk significant time period with the unit on RHR shutdown cooling is when both 1) the SGs are unavailable for decay heat removal, and 2) when the reactor cavity is not flooded. As described in Case 1 above, in this analysis, a probability of 3.0E-2 (approximately 11 days) was conservatively used that the unit was on RHR shutdown cooling with the SGs unavailable and with the reactor cavity not flooded.

The following assumptions were made as far as the failure of non-seismic piping that could result in flooding in the RHR cubicles:

- If non-seismic piping failed that could result in flooding in the RHR cubicles, then core damage was assumed (i.e., the CCDP was 1.0).
- The ET was assumed to be one year which is the maximum allowed by the SDP.
- Similar to Case 2, the seismic capacity of non-seismic piping was assumed to have a HCLPF capacity of 0.2g. The IEF of an earthquake in “Bin 2” was estimated to be 1.29E-5/yr for Point Beach using Table 4A-1 of Section 4 of the RASP handbook. Using a HCLPF capacity of 0.2g, a probability of 1.90E-1 was obtained for the failure of non-seismic piping in “Bin 2” that could result in flooding in the RHR cubicles.

A bounding value for the  $\Delta\text{CDF}$  for Case 3 was obtained as the product of the following factors:

$$\begin{aligned}\Delta\text{CDF} &= [\text{IEF}] \times [\text{Prob}_{\text{Non-seismic pipe failure/tank failure}}] \times [\text{Prob}_{\text{RHR Cooling-No SGs-Rx Cavity Not Flooded}}] \times \\ &[\text{CCDP}] \times [\text{ET}] \\ &= [1.29\text{E-}5/\text{yr}] \times [1.90\text{E-}1] \times [3.0\text{E-}2] \times [1.0] \times [1.0] \\ &= 7.35\text{E-}8/\text{yr}\end{aligned}$$

### 4) **Case 4: RHR Pump Seal Leak**

The leakage due to an RHR pump seal failure was assumed to be 50 gpm (as described in DBD –T-41, “Hazards – Internal and External Flooding (Module A).” The following information was considered:

- A level switch in each RHR pump cubicle would alarm in the Main Control Room (MCR) to detect water in the cubicle from an RHR pump seal leak.
- Each RHR cubicle has a normally closed, remotely-operated drain isolation valve that can be controlled from the MCR.
- Per the licensee’s evaluation, the drainage capacity of the drain line from each RHR cubicle is approximately 150 gpm at a level of 22 inches in the RHR cubicle (which corresponds to the level at which an RHR pump would be unavailable due to room flooding).

- The drain line from each RHR cubicle drains to a sump on the -19 foot elevation in the PAB. The sump on the -19 foot elevation in the PAB has two sump pumps with a rated capacity of 75 gpm each (total of 150 gpm).
- Alarm Response Procedure 1C20 A 4-4 for “Unit 1 or 2 RHR Pump Rooms Level High” provides directions to determine which RHR cubicle(s) are flooding and to cycle the RHR cubicle drain valve(s) while maintaining the high level MCR alarm for the PAB -19 foot sump clear.

The MCR alarm, RHR cubicle drain lines, and Alarm Response Procedure for high water level in an RHR cubicle should allow an excessive time to mitigate a 50 gpm RHR pump seal leak. Even without any operator action to drain a 50 gpm seal leak into an RHR cubicle to the -19 foot PAB sump using the RHR cubicle drain valve, it would take approximately 172 minutes (almost three hours) to render both RHR pumps unavailable (i.e., 8597 gallons/50 gpm = 172 minutes). The time available of approximately three hours allows plenty of time to isolate a leaking RHR pump seal before both RHR pumps would be rendered unavailable. The delta risk significance associated with the performance deficiency due to a 50 gpm RHR pump seal leak is considered to be negligible.

#### **5) Case 5: External Leakage from Outside Plant into the Plant Auxiliary Building**

The SRAs reviewed the following documents:

- Functionality Assessment (FA) 2004858-03
- Calculation FPLC-076-CALC-019, “Precipitation Effects Sensitivity Analysis,” Revision 1
- Calculation FPLC-076-CALC-014, “PBNP Precipitation and Snow Intensity Determination and Roof Drainage Evaluation,” Revision 0

Based on a review of the above documents, the SRAs determined that the delta risk associated with the performance deficiency due to external leakage from outside the plant into Plant Auxiliary Building was negligible.

#### **6) Case 6: Random Service Water or Fire Protection System Leak in the PAB**

The SRAs evaluated the delta risk due to a random SW or FP water leak due to a pipe break in the PAB that could funnel water into the RHR cubicles. As described in Functionality Assessment 2004858-03, Attachment 1, there are essentially three conveyance paths to each RHR cubicle:

- When the volume in the PAB central area on the -19 foot level exceeds 27,901 gallons, flow enters the RHR cubicles through the personnel access (at a 7 foot level above the floor on the -19 foot level of the PAB),
- When flow accumulates on the 8 foot elevation of the PAB, flow occurs through the RHR heat exchanger rooms down to the RHR cubicles, and

- When flow accumulates on the 8 foot level of the PAB, flow occurs through Pipeway #3 into the Unit 2 RHR pipe and valve gallery. This pathway is currently blocked by sandbags, but no credit is taken for the sandbags.

This delta risk evaluation will also consider the case before seals between Pipeway #2 and the Unit 1 RHR pipe and valve gallery on the 8 foot elevation of the PAB were successfully installed, which now prevents flood waters from the sub-floor pipe trench on the 8 foot level of the PAB from entering the Unit 1 RHR pipe and valve gallery.

Per Functionality Assessment 2004858-03, Attachment 1, following a pipe break in the upper levels of the PAB, by analysis there is a flow split of the leakage from a pipe break into the following areas in the listed proportions.

- -19 foot PAB central area      84.6 percent
- 1A RHR cubicle                      0.0 percent
- 1B RHR cubicle                      2.2 percent
- 2A RHR cubicle                      0.1 percent
- 2B RHR cubicle                      13.1 percent

For simplicity assume a 1000 gpm SW or FP leak into the upper levels of the PAB.

- a) For the **Base Case**, assume that all the water from a SW or FP leak into the PAB would go to the -19 foot level central area of the PAB (i.e., the basement level of the PAB). The water from the leak would then accumulate on -19 foot central area of the PAB, and overflow into all four RHR pump cubicles (i.e., both Unit 1 and 2 A and B RHR cubicles) when 27,901 gallons had accumulated on the floor. The overflow into the RHR pump cubicles would be equally split between all four RHR pumps or at a flow of 250 gpm each. Since a level of 22 inches in the RHR cubicles (3261 gallons) would render an RHR pump unavailable, the time after the pipe break at which both RHR pumps would become unavailable is:

$$\begin{aligned} \text{Time}_{\text{Base Case}} &= (27901 \text{ gallons}/1000 \text{ gpm}) + (3261 \text{ gallons}/250 \text{ gpm}) \\ &= 27.9 \text{ minutes} + 13.0 \text{ minutes} \\ &= 40.9 \text{ minutes} \end{aligned}$$

- b) For the **Degraded Case**, assume the water flow from the SW or FP leak is split in the proportions as stated above, **except assume that 1B RHR cubicle has 10 percent additional input due to flow through Pipeway #2 into the Unit 1 RHR pipe and valve gallery (i.e., before this leakage path was sealed)**. The proportion of leakage onto the -19 foot PAB central area would then decrease to 74.6 percent. The flow split of the leakage from a pipe break is then given into the following areas in the listed proportions.

- -19 foot PAB central area      74.6 percent
- 1A RHR cubicle                      0.0 percent
- 1B RHR cubicle                      12.2 percent
- 2A RHR cubicle                      0.1 percent
- 2B RHR cubicle                      13.1 percent

Since an inspection of the walls separating the 2A and 2B RHR pipe and valve galleries found the penetrations at the 3 foot elevation separating the 2A and 2B RHR cubicles



relatively tight, the evaluation below will discuss the case for leakage into the Unit 1 RHR cubicles (in which there was relatively large open spaces between the 1A and 1B RHR cubicles at the 3 foot elevation). With a leakage rate of 746 gpm into the -19 foot PAB central area, it would take 37.4 minutes (i.e., 27901 gallons/746 gpm = 37.4 minutes) to overflow into the RHR cubicles. During these 37.4 minutes, 4563 gallons [i.e., (37.4 minutes)(122 gpm) = 4563 gallons] would have accumulated in the Unit 1 RHR cubicles. After 37.4 minutes, the leakage rate into the Unit 1 RHR cubicles would come from two sources: 1) overflow into the RHR pump cubicles from the -19 foot PAB central area at a rate of 373 gpm per unit, and 2) leakage of 122 gpm via the flow distribution provided above. The total inleakage into the Unit 1 RHR cubicles would then be 495 gpm (i.e., 373 + 122 = 495 gpm). **With a degraded wall with an opening between the 1A and 1B RHR pipe and valve galleries at the 3 foot level, as described in Case 1, it would take approximately 8,597 gallons of water (i.e., 5336 + 3261 = 8597 gallons) to enter the RHR cubicles before both RHR pumps would become unavailable.**

The time after the pipe break at which both Unit 1 RHR pumps would become unavailable is then:

$$\begin{aligned} \text{Time}_{\text{Degraded Case}} &= (27901 \text{ gallons}/746 \text{ gpm}) + (8597 \text{ gallons} - 4563 \text{ gallons})/(495 \text{ gpm}) \\ &= 37.4 \text{ minutes} + 9.2 \text{ minutes} \\ &= 46.6 \text{ minutes} \end{aligned}$$

Since the  $\text{Time}_{\text{Degraded Case}}$  is greater than the  $\text{Time}_{\text{Base Case}}$ , the delta risk significance for this case is negligible.

### **Total ΔCDF For This Issue**

The total ΔCDF associated with the finding was obtained as the sum of the ΔCDF for Cases 1 through 6 above.

$$\begin{aligned} \Delta\text{CDF}_{\text{Total}} &= \Delta\text{CDF}_{\text{Case 1}} + \Delta\text{CDF}_{\text{Case 2}} + \Delta\text{CDF}_{\text{Case 3}} + \Delta\text{CDF}_{\text{Case 4}} + \Delta\text{CDF}_{\text{Case 6}} \\ &= 2.56\text{E-}7 + 1.20\text{E-}7 + 7.35\text{E-}8 + 0 + 0 + 0 \\ &= 4.50\text{E-}7/\text{yr} \end{aligned}$$

### **Large Early Release Frequency (LERF) Risk Contribution**

Since the total estimated change in ΔCDF was greater than 1.0E-7/yr, IMC 0609 Appendix H, "Containment Integrity Significance Determination Process" was used to determine the potential risk contribution due to large early release frequency (LERF). Point Beach is a 2-LOOP Westinghouse Pressurized Water Reactor with a large dry containment. Sequences important to LERF include SG tube rupture events and inter-system LOCA events. These were not the dominant core damage sequences for this finding.

### **Conclusion**

Based on the detailed risk evaluation, the SRAs determined that the finding was of very low safety significance (Green). The inspectors determined that the associated finding did not have a cross-cutting aspect because the finding was not reflective of current performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that the design basis for safety-related functions of SSCs are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, from February 17, 1975 until December 2014, the licensee failed to assure that the design basis for safety-related functions of SSCs were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to implement design control measures to ensure that the failure of a non-Category I component, which resulted in flooding, would not adversely affect safety-related equipment needed to place the plant in a SSD condition or to limit the consequences of an accident. Because this violation was of very low safety significance and it was entered into the licensee's CAP as AR 02008551, 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 an extensive internal flooding design review, which will result in an updated FSAR with a more detailed description of the stations flooding licensing basis; modifications to multiple flood barriers to bring them into compliance with the licensee's flooding licensing basis; installation of additional flood level alarms where necessary, and evaluation or modification of SW piping to properly qualify it as seismic **(NCV 05000266/2015003-02; 05000301/2015003-02; Potential Failure of Multiple Safety-Related Trains During Flooding Events).**

2) Failure to Perform a Written Safety Evaluation for FSAR Changes

Introduction: The inspectors identified a Severity Level IV, NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a safety evaluation to demonstrate that the removal of statements from the FSAR did not require a license amendment. Specifically, the licensee failed to perform a safety evaluation to determine whether removing an FSAR statement, which defined the RHR pump cubicle design flood height as seven feet, could be performed without a license amendment.

Description: During the review of corrective actions associated with LER 266/2015-001, the inspectors found that the licensee intended to keep the pipe penetration between the Unit 1 RHR valve gallery cubicles unsealed and planned to clarify in their FSAR that the seven foot walls separating the RHR cubicles were never intended to be credited as flood barriers to the full seven feet. The inspectors' review of the FSAR did not identify any statements that defined the credited flood protection height for the RHR cubicle walls. The inspectors' review of the licensee's design basis document for RHR identified a discussion related to separating and protecting the RHR pumps from an RHR pump seal leak or a flange leak, the discussion also referenced a Westinghouse letter from June 26, 1967. The inspectors' review of the referenced Westinghouse letter and other associated correspondence found that the licensee had credited the seven foot walls as flood barriers. Specifically, in response to Atomic Energy Commission questions, the licensee stated in their PSAR, supplement 1, dated January 11, 1968, that leakage in the RHR pump cubicles could backup to a depth of seven feet without affecting the operation of the second pump. The inspectors found that this statement was also included in the licensee's FSAR and remained there until September 1996, when the licensee changed their FSAR to clarify RHR pump cubicle drain positions. The inspectors' review of the licensee's safety evaluation that was credited for making the FSAR change was related to adding elapsed time indicators to auxiliary building

sump pumps, and did not evaluate removing the seven foot design requirement. The licensee entered the deficiency in their CAP as AR 02069428.

Analysis: The inspectors determined that the failure to provide a written safety evaluation to demonstrate that the removal of statements from the FSAR did not require a license amendment was contrary to the requirements of 10 CFR 50.59(d)(1) and was a performance deficiency. The inspectors determined that the finding was more than minor because the finding, if left uncorrected, would become a more significant safety concern. Specifically, inappropriately removing the information from the FSAR allowed the licensee to decrease the design basis flood protection height of the RHR compartments and significantly reduced the available time to isolate the leaking RHR pump seal. The inspectors concluded this finding was associated with the Mitigating Systems Cornerstone.

In addition, the associated violation was determined to be more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required prior NRC approval.

Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process instead of the SDP because they are considered to be violations that potentially impede or impact the regulatory process. This violation is associated with a finding that has been evaluated by the SDP and communicated with an SDP color reflective of the safety impact of the deficient licensee performance. The SDP, however, does not specifically consider the regulatory process impact. Thus, although related to a common regulatory concern, it is necessary to address the violation and finding using different processes to correctly reflect both the regulatory importance of the violation and the safety significance of the associated finding.

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 2, "Mitigating Systems Screening Questions," dated June 19, 2012. The inspectors concluded that the finding was of very low safety significance (Green), because the inspectors answered "No" to the Mitigating Systems screening questions. The inspectors concluded that the performance deficiency associated with the unsealed barriers was assessed in the design control violation discussed above and the risk associated with this finding would be related to the potential for inadequate corrective actions if the FSAR remained incorrect.

In accordance with Section 6.1.d of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance (i.e., Green finding). The inspectors determined that the associated finding did not have a cross-cutting aspect because the finding was not reflective of current performance.

Enforcement: Title 10 CFR 50.59 Section (d)(1) requires, in part, that the licensee maintain records of changes in the facility, of changes in procedures, and of tests and experiments. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license amendment pursuant to Paragraph (c)(2).

Contrary to the above, on September 30, 1996, the licensee failed to perform a written safety evaluation to demonstrate that the deletion of the RHR pump cubicle design flood height from the FSAR did not require a license amendment. The violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's CAP (AR 02069425) **(SLIV NCV 05000266/2015003-03; 05000301/2015003-03; Failure to Perform a Written Safety Evaluation for FSAR Changes).**

.2 (Closed) Licensee Event Reports 05000266/2015-003-00; 05000266/2015-003-01: D-107 Battery Charger Failure to Limit Current Results in Operation or Condition Prohibited by Technical Specifications

On March 9, 2015, the licensee discovered that the current limit feature on Battery Charger D-107 would not function as expected. The licensee's troubleshooting efforts identified a defective crimp on a wire, which caused an intermittent open circuit that disabled the current limit function. The disabled current limiter could have prevented the charger from performing its design basis function. On May 8, 2015, this event was reported by the licensee in accordance with 10 CFR 50.73(a)(2)(i)(B) for an operation or condition prohibited by TSs. The licensee repaired the loose crimp and performed an apparent cause evaluation to determine any needed long-term corrective actions.

The inspectors reviewed the licensee's assessment and corrective actions associated with the failed battery charger and identified one Green finding, which was documented in Section 1R12 of NRC IR 05000266/2015001; 05000301/2015001. Additionally, the licensee identified one Green finding and violation of NRC requirements, which was documented in Section 4OA7 of NRC IR 05000266/2015001; 05000301/2015001.

The inspectors also observed that information contained in the original revision of the LER was inaccurate. Specifically, under the Safety Significance section of the LER, the licensee stated that plant procedures provided appropriate guidance to manually lower the oncoming charger voltage to match running bus voltage, thus preventing a high current condition. The inspectors found that the guidance in the associated AOP was not appropriate, and it could not have been accomplished as written.

The inspectors assessed the inaccurate information to be a minor performance deficiency. The licensee entered the issue into their CAP and revised the LER. Documents reviewed are listed in the Attachment to this report. Both the original and revised LER are closed.

.3 (Closed) Licensee Event Report 05000266/2015-004-00: Out-of-Service A-06 Switchgear Room Fans Result in Operation Prohibited by Technical Specifications

On June 4, 2015, while preparing for planned preventative maintenance on the G-03/G-04 EDG switchgear room exhaust fans, the licensee discovered that removal of an exhaust fan may result in the inoperability of the associated supported safety-related switchgear. The licensee performed a past operability review (POR) which concluded that numerous occasions existed over the past three years where the safety-related 4.16kV switchgear associated with 'B' Train EDGs was inoperable, and resulted in a reportable condition due to exceeding allowed outage times required by TSs. On August 3, 2015, this condition was reported by the licensee in accordance with 10 CFR 50.73(a)(2)(i)(B) for the operation or condition prohibited by TSs and

10 CFR 50.73(a)(2)(vii) for the common cause inoperability of independent trains of safety-related electrical power sources and their associated switchgear.

The inspectors reviewed the LER to determine if the licensee's evaluation and associated corrective actions were appropriate. The inspectors also assessed the accuracy of the LER, the timeliness of corrective actions, whether additional violations of requirements occurred, and if potential generic issues existed. Based on this review the inspectors determined that a licensee identified NCV of NRC requirements existed, and is documented in Section 4OA7 of this report. Documents reviewed are listed in the Attachment to this report. This LER is closed.

These event follow-up reviews constituted four samples as defined in IP 71153-05.

#### 4OA5 Other Activities

##### .1 (Closed) Temporary Instruction (TI) 2515/190, Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations

###### a. Inspection Scope

The inspectors independently verified that the Point Beach staff's proposed interim actions would perform their intended function for flooding mitigation by performing the following:

- visual inspection of the flood protection feature if the flood protection feature was relevant;
- external visual inspection for indications of degradation that would prevent the flood protection features credited function from being performed was performed;
- reasonable simulation, if applicable, to the site; and
- flood protection feature functionality was determined using either visual observation or by review of other documents.

The inspectors verified that issues identified were entered into the licensee's CAP.

###### b. Findings

No findings were identified. This TI is closed.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On October 14, 2015, the inspectors presented the inspection results to Mr. E. McCartney, Site Vice President, 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 exits were conducted for:

- On July 16, 2015, the results of the TI 2515/190, Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations were presented to Mr. E. McCartney, Site Vice President, and other members of the licensee's staff;
- On August 21, 2015, the inspection results for the areas of radiation monitoring instrumentation and radioactive gaseous and liquid effluent treatment were discussed with Mr. E. McCartney, Site Vice President, and other members of the licensee's staff;
- On September 4, 2015, the results of the biennial licensed operator requalification program area assessment inspection were presented to Mr. D. DeBoer, Plant General Manager, and other members of the licensee's staff; and
- On September 23, 2015, the results of the 2015 licensed operator annual test were discussed with Mr. R. Amundson, Operations Training Supervisor, via telephone.

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

#### 40A7 Licensee-Identified Violations

The following violation of very low significance (Green) or Severity Level IV was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

The licensee identified a finding of very low safety significance (Green) and an NCV of TS 3.8.9; Distribution Systems—Operating, Condition A, which required the licensee to immediately declare associated supported features inoperable for the 4.16 kV safeguards busses. Failure to implement this action subsequently required the licensee to place both units in mode 5 within 36 hours. Contrary to the above, the licensee discovered that numerous occasions existed over the past three years where safety-related 4.16kV switchgear associated with 'B' Train EDGs was inoperable due to the inoperability of the W-185A and W-185B, 1A-06 and 2A-06 Switchgear room fans, which were required support systems for the EDGs and associated switchgear.

The inspectors evaluated the finding in accordance with IMC 0609, Significance Determination Process, and determined that the finding required a detailed risk evaluation which was performed by Region III SRAs. The SRAs gathered data from licensee GOTHIC model calculations, licensee engineering evaluations associated with the POR of the condition and the NRC's Standard Plant Analysis Risk model. Based on the SSCs being available for their respective 24-hour mission time(s), the SRAs determined that the increase in  $\Delta$ CDF for this issue was negligible and the delta risk is of very low safety significance (i.e., Green).

The licensee reported this condition in LER 2015-004-00, which was closed in Section 4OA3 of this report. The licensee's corrective actions included improving administrative and procedural controls for removing these fans from service and used lessons learned from this condition to implement corrective actions to improve procedural guidance for similar activities where ventilation systems may cause support system inoperabilities.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

E. McCartney, Site Vice President  
D. DeBoer, Plant General Manager  
S. Aerts, Performance Improvement Manager  
R. Amundson, Training Operations Supervisor  
R. Baird, Training Fleet Manager  
L. Christensen, Project Manager  
A. Coogle, Senior Security Analyst  
C. Ford, Maintenance Support Department Head  
D. Forter, Project Site Manager  
A. Gustafson, Training Ops General Supervisor  
R. Harrsch, Engineering Site Director  
M. Millen, Senior Project Manager  
T. Ouret, Training Fleet Manager  
R. Parker, Chemistry Manager  
T. Schneider, Senior Engineer  
E. Schultz, Operations Assistant Manager Line  
G. Strharsky, Site Quality Manager  
M. Vana, Senior Training Ops Instructor  
R. Webber, Operations Site Director  
R. Welty, Radiation Protection Manager  
M. Wilcox, On Line Manager  
P. Wild, Design Engineering Manager  
B. Woyak, Licensing Manager

#### Nuclear Regulatory Commission

J. Cameron, Chief, Reactor Projects Branch 4



## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000266/2015003-01 05000301/2015003-01	FIN	Incomplete Functionality Assessment for Flooding in the Diesel Generator Building (Section 1R15.1)
05000266/2015003-02 05000301/2015003-02	NCV	Potential Failure of Multiple Safety-Related Trains During Flooding Events (Section 4OA3.1)
05000266/2015003-03 05000301/2015003-03	SLIV NCV	Failure to Perform a Written Safety Evaluation for FSAR Changes (Section 4OA3.1)

### Closed

05000266/2015003-01 05000301/2015003-01	FIN	Incomplete Functionality Assessment for Flooding in the Diesel Generator Building (Section 1R15.1)
05000266/2015001-00	LER	Inadequately Sealed Pipe Penetration Results in an Unanalyzed Condition for Internal Flooding (Section 4OA3.1)
05000266/2015003-00	LER	D-107 Battery Charger Failure to Limit Current Results in Operation or Condition Prohibited by Technical Specifications (Section 4OA3.2)
05000266/2015003-01	LER	D-107 Battery Charger Failure to Limit Current Results in Operation or Condition Prohibited by Technical Specifications (Section 4OA3.2)
05000266/2015004-00	LER	Out-of-Service A-06 Switchgear Room Fans Result in Operation Prohibited by Technical Specifications (Section 4OA3.3)
05000266/2015003-02 05000301/2015003-02	NCV	Potential Failure of Multiple Safety-Related Trains During Flooding Events (Section 4OA3.1)
05000266/2015003-03 05000301/2015003-03	SLIV NCV	Failure to Perform a Written Safety Evaluation for FSAR Changes (Section 4OA3.1)
2515/190	TI	Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations (Section 4OA5.1)

## 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 (71111.01)

- 2015 Summer Readiness Audit; May 14, 2015
- AOP-13C; Severe Weather Conditions; Revision 40
- AR 01896156; Flooding White Finding and Notice of Violations
- AR 01937424; PBSA-ENG-15-01 External Events Program Quick Hit Assessment
- AR 02019484; PBSA-ENG-15-04 Flooding Issues Quick Hit Assessment
- Assessment #: PBSA-ENG-15-04; Engineering Quick Hit Self-Assessment Related to Flooding Issues; January 28, 2015
- Condition Report Search for Façade Flood from September 1, 2012 – September 12, 2015
- Condition Report Search for Weather from September 12, 2014 – September 12, 2015
- Entry into Abnormal Operating Procedure (AOP) Audit; June 11, 2015
- Flooding Strategy Tabletop Audit; January 21, 2015
- NP 8.4.17; PBNP Flooding Program; Revision 20
- OM 3.30; Operations Snow Emergency Staffing; Revision 4
- PC 6 Part 9; Flood Mitigation Inventory Checks; Revision 1
- Prompt Operability Compensatory Action Review Audit; December 23, 2014
- RMP 9422; Circulating Water Pumphouse and Turbine Hall Barrier Placement; Revision 1
- Table Top Review Session for Required Flooding Barrier Placement Procedural Revisions Audit; August 27, 2014
- Winter 2014 Readiness Review Audit; November 4, 2014
- WM-01.29 PMs Within 7 Days of End of Grace Interval Report; September 2, 2015
- WO 40376098-01; PC-6.9 Operations Flood Equipment Inventory; August 17, 2015

### 1R04 Equipment Alignment (71111.04)

- 0-PT-FP-002; Weekly Diesel Engine-Driven Fire Pump Functional Test; Revision 15
- AR 02020656; Inadvertent Operation of Breaker While Hanging Danger Tag
- AR 02033371; Momentary Condenser Hotwell Level Alarm
- AR 02066668; FIT-4459A Flow Transmitter Was Found Aligned
- AR 02069472; 2SW-447 Found Open, CL-10C Position is Shut
- AR 02070664; Valve CD-119 Mispositioned During Chlorination Event
- AR 02070707; 2X-06, 2B-40 Diesel Generator Bldg MCC Transformer
- AR 02071554; Emergent Plant Status Control Meeting Regarding MISPO Events
- CL 10D; Fuel Oil Systems; Revision 24
- CL 11A G-03; G-03 Diesel Generator Checklist; Revision 8
- CL 13E Part 1; Auxiliary Feedwater Valve Lineup Turbine-Driven Unit 2; Revision 27
- CL 13E Part 2; Auxiliary Feedwater Valve Lineup Motor Driven; Revision 52
- CL 19; Fire Protection System Valves; Revision 49
- Control Room Log Entries for August 27, 2015
- Corrective Action Program Misposition Keyword Search from January 21, 2015 – September 21, 2015
- Drawing M-207; Sheet 1; Service Water; Revision 87

- Drawing M-208; Sheet 1; Fire Water; Revision 48
- Drawing M-217; Sheet 1; Auxiliary Feedwater System; Revision 103
- Drawing M-217; Sheet 2; Auxiliary Feedwater System; Revision 33
- Drawing M-2207; Sheet 1; Service Water; Revision 67
- Drawing P-159; Aux. F.W. From Heating Boiler CNDS. Return & Pump Recirc. To CNDS Stg. Tank 6" & 3" JG-4; Revision 11
- Drawing P-359; Sheet 1; Unit 1 – Turbine Bldg.; Revision 1
- Drawing P-359; Sheet 2; Unit 1 – Turb. Bldg.; Revision 1
- FSAR Section 10.2; Auxiliary Feedwater System (AF); UFSAR 2014
- IT 09A; Cold Start of Turbine-Driven Auxiliary Feed Pump and Valve Test (Quarterly) Unit 2; Revision 65

#### 1R05 Fire Protection (71111.05)

- AR 01817087; Temp Power / Housekeeping Concerns Found
- AR 02072938; Transient Combustible Documentation not Complete
- AR 02072943; ANSUL Cart in Circ Water Pump House was not Secured
- Drawing PBC-218 Sheet 3; Fire Protection for Turbine Building Aux. Building & Containment Elev. 26'-0"; Revision 16
- Drawing PBC-218 Sheet 19; Fire Protection for Diesel Generator Building; Revision 5
- Drawing PBC-219 Sheet 23; Fire Emergency Procedure 4.10 Aux. Building & Containment Elev. 26'-0"; Revision 6
- Drawing PBC-219 Sheet 41; Fire Emergency Procedure 4.19 Circulating Water Pumphouse; Revision 5
- FEP 4.8; PAB-26' Unit 1 & 2 VCT Area, Central Tank Area; Revision 9
- FEP 4.19; Circulating Water Pumphouse; Revision 10
- FEP 4.20; Site; Revision 11
- FEP 4.27; Emergency Diesel Generator Building(G-03/G-04); Revision 5
- FHAR; Appendix A Fire Area Analysis Summary Report for Fire Area A58; Revision 6
- FHAR; Appendix A Fire Area Analysis Summary Report for Fire Area A61; Revision 6
- FHAR; Appendix A Fire Area Analysis Summary Report for Fire Area A71; Revision 6
- FOP 1.2; Potential Fire Affected Safe Shutdown Components; Revision 23
- FPEE 1999-003; Diesel Generators G03 & G04 Building Boundaries; Revision 1
- FPER; Fire Protection Evaluation Report; Revision 16
- NP 1.9.9; Transient Combustible Control; Revision 25
- NP 8.4.17; PBNP Flooding Program; Revision 20
- PBF-2058c; Fire Round Performance Sheet-Miscellaneous Areas; September 21, 2015
- PC 74; Conducting and Evaluating Fire Drills; Revision 16
- Reader Transaction History from September 21, 2015 – September 22, 2015

#### 1R06 Flooding (71111.06)

- AR 01288369; Internal Flooding Concern in the Circulating Water Pump House
- ARP C01 B 1-1; Diesel Fire Pump Running; Revision 2
- ARP C01 B 1-2; Electric Fire Pump Running; Revision 2
- Calculation 2009-0008; Circulating Water Pump House Internal/External Flooding; October 2, 2014
- Calculation 2014-0002; Effects on Safety Equipment of Bypassing the Installed Wave Run-up Barriers Through the Storm and Subsoil Drain Systems; August 11, 2014
- Calculation 2014-0007; Allowable Flood Levels; October 31, 2014

- Calculation 2014-04473; Internal Flooding Assessment of Emergency Diesel Generator Building; October 16, 2014
- FSAR Section 2.5; Hydrology; UFSAR 2014
- FSAR Appendix A.7; Internal Flooding; UFSAR 2012
- Letter; US Atomic Energy Commission to Wisconsin Electric Power Company and Wisconsin Michigan Power Company; September 26, 1972
- Letter; US Atomic Energy Commission to Wisconsin Electric Power Company and Wisconsin Michigan Power Company; December 10, 1974
- Letter; US Atomic Energy Commission to Wisconsin Electric Power Company and Wisconsin Michigan Power Company; September 29, 1975
- Letter; US Atomic Energy Commission to Wisconsin Electric Power Company and Wisconsin Michigan Power Company; November 20, 1975
- Letter; Wisconsin Electric Power Company to US Atomic Energy Commission; February 20, 1973
- Letter; Wisconsin Electric Power Company to US Atomic Energy Commission; February 14, 1975
- Letter; Wisconsin Electric Power Company to US Atomic Energy Commission; February 17, 1975
- Letter; Wisconsin Electric Power Company to US Atomic Energy Commission; April 28, 1975
- Letter; Wisconsin Electric Power Company to US Atomic Energy Commission; October 24, 1975
- Letter; Wisconsin Electric Power Company to US Nuclear Regulatory Commission; May 26, 1976
- OM 4.3.8; Control of Time Critical Operator Actions; Revision 8
- SCR 2007-0150-01; MOD EC 11174 CWPB Flood Relief Modification; October 29, 2009
- SCR 2009-0057; USAR 01141895 Changes to FSAR A.7, Plant Internal Flooding; May 5, 2009
- WO 40345512-01; Electric Motor-Driven Fire Pump Functional Test; August 13, 2015

#### 1R07 Annual Heat Sink Performance (71111.07)

- AR 01837285; HX-13A Spent Fuel Pool Heat Exchanger has Leak
- AR 01837905; Additional Investigation Shows Through Wall Hole on HX-13A
- AR 01911809; SW-2911-BS Packing Blown Out/UE Declared
- AR 02043804; SFP Cooler Degradation Worse & Replacement Stalled
- AR 02061757; Low Wall Thickness on HX-13A SFP HX
- AR 02062041; Datum Point Unable to be Verified
- ASME XI R/R/M Pressure Test Data Sheet for HX-013A; January 10, 2013
- Drawing E-121202; Diesel Generator Building Concrete Plan @ EL 28'-0"; Revision 8
- Drawing E-121208; Diesel Generator Building Concrete Sections and Details; Sheet 4; Revision 5
- Drawing E-121210; Diesel Generator Building Concrete Sections and Details; Sheet 6; Revision 6
- ER-AA-201-2001-10000; Attachment 6; Focused Bridging Strategy for Spent Fuel Pool Cooling & Filtration; February 10, 2014
- FA 02043804; Spent Fuel Pool Heat Exchangers HX-013A & HX-013B and the Attached Service Water (SW) System"; May 8, 2015
- HX-13A Phased Array Scan Results; May 24, 2015
- PBF-1554; Repair/Replacement Form for HX-013B
- WO 40204644-07; GL 89-13 UT Shell Thickness; August 12, 2013

1R11 Licensed Operator Requalification Program (71111.11)

- 10 CFR 50.59/72.48 Screening No. 2012-0175-01; Update EOPs to Current ERG [Emergency Response Guidelines]; Revision 2
- 2014 Week 4 LORT Comprehensive Written RO Exam
- 2014 Week 4 LORT Comprehensive Written SRO Exam
- 2015 Week 3 Scenario PBN LOC 000 016E; Revision 4
- 2015 Week 3 Scenario PBN LOC 000 017E; Revision 4
- 2015 Week 4 Scenario PBN LOC 000 026E; Revision 4
- 2015 Week 4 Scenario PBN LOC 000 043E; Revision 3
- Academic Review Board Meeting; December 12, 2015
- Apparent Cause Evaluation for AR 0183223; Revision 0
- AR 01836045; EOP-0 Background Document Potentially Incorrect
- AR 01836383; OI 39 PAB Vent Note for LCO 3.7.14 Incorrect
- AR 01859099; Broken Simulator Recorder 6019 Relocated From U1 to U2
- AR 01904359; Inaccurate DEP PI Implementation During Evaluated LOC Scenario
- AR 01971700; Evaluate Recommended Enhancements to OM 4.3.8
- AR 01980471; SWR Validation – SG Pressures Out-of-Tolerance
- AR 02035238; Training Observation UNSAT
- AR 02043755; LOC Simulator Training Exceeds 10 Students (Approved)
- AR 02054168; PFAT Process Is Being Used Improperly In Some Instances
- AR 02059064; Recent Change Has Disabled Simulator Standalone Hard drives
- AR 02062314; STA Biennial Written Exam Requirements Need A Decision
- AR 02063994; Assessment AFI - Alt Path JPMs Require Additional Review
- AR 02065595; Simulator Procedures Not Replaced During Segment 15D
- AR 02069079; Conformance With Licensed Operator Medical Vulnerability
- AR 02071664; Steam Generator Tube Rupture Time Critical Action Control
- AR 02075939; Annual Operating Examination EP Errors
- Crew Simulator Evaluation Form; Crew E, Team 1
- Crew Simulator Evaluation Form; Crew E, Team 2
- Five JPMs from 2015 Week 4 of the Requalification Exams
- Focused Self-Assessment No. PBSA-TRN-15-02; OPS 71111.11 Pre Inspection Assessment; SAR No. 02028438; Focused Area Self-Assessment; June 1 – 5, 2015
- Four JPMs from 2015 Week 3 of the Requalification Exams
- Individual Simulator Evaluation Forms; Crew A; Segment 15E
- LOC Long Range Training Program 2013 – 2018
- OM 1.1; Conduct of Plant Operations, PBNP Specific; Revision 46
- OM 4.3.8; Control of Time Critical Operator Actions; Revision 8
- One JPM from 2015 Week 2 of the Requalification Exams
- OP-AA-100-1001; License Maintenance and Activation; Revision 2
- PBN LOC 027E; NRC Annual Operating Exam; Revision 4
- PBNP LOCT Segment 15E Schedules; Licensed Operator Continuing Training; August 10, 2015 through September 25, 2015
- PBSA-TRN-15-02; Focused Self-Assessment
- Point Beach Operations Self-Evaluation and Trending Analysis Report for 1<sup>st</sup> Quarter 2015; May 1, 2015
- Point Beach Operations Self-Evaluation and Trending Analysis Report for 2<sup>nd</sup> Quarter 2015; July 27, 2015
- SEG PBN LOC 000 043E; Scenario Based Testing; Revision 3
- SEG PBN LOC 000 E; Scenario Based Testing; Revision 4
- Simulator Comprehensive Assessment Finding for AR 01854671; March 1, 2013

- Simulator Evaluation Form; Crew A; Segment 15E
- Simulator Review Committee Minutes 2<sup>nd</sup> Quarter 2015; June 3, 2015
- Simulator Test SCT6.1.4; 100% Power Steady State Drift Test; August 25, 2014
- Simulator Test SCT6.2.3; 28% Power Steady State Performance Test; December 15, 2013
- Simulator Test SCT6.3.1; 100% Heat Balance; August 26, 2014
- TR-AA-104; NextEra Energy Fleet Licensed Operator Continuing Training Program; Revision 6
- TR-AA-220-1002; NRC Licensed Operator Exam Security; Revision 1
- TR-AA-220-1004; Licensed Operator Continuing Training Annual Operating and Biennial Written Exams; Revision 1
- TR-AA-230-1004; SAT [Systematic Approach to Training] Implementation; Revision 5
- TR-AA-230-1007; Conduct of Simulator Training and Evaluation; Revision 2
- TR-AA-230-1009; Training Examination Security; Revision 2

1R12 Maintenance Effectiveness (71111.12)

- 1ICP 02.001BL; Reactor Protection and Engineered Safety Features Blue Channel Analog 92 Day Surveillance Test; Revision 20
- AR 01854297; CN-CPS-07-13 Discrepancy with TS 3.3.2-1 4.E., STPT 2.2
- AR 01913395; ER Improvement Plan – RPS Channels
- AR 01936887; ITC-00408L / Refurbishment Needed
- AR 01962494; 1FC-474A/B Recent Bistable OOT's
- AR 01967175; TS 3.3.1 NOTE 3 / TS 3.3.2 NOTE 1 Not Consistently Followed
- AR 01998340; Found Instruments Out of Tolerance During ICP 04.0001C
- AR 01998974; Instruments Found Out of Tolerance During ICP 04.001D
- AR 02018291; As Found OOT 1TC-403D
- AR 02026362; LREV of CE Identifies Missed Opportunity
- AR 02049677; IT-406A White of Delta Setpoint 1 Channel Failed Low
- AR 02054210; 1-FC-474B Found Out of Spec 1ICP 02.001BL
- AR 02058625; 1FC-474A/B Still Drifting After Refurbishment
- AR 02059958; EC 279296 Changes Incorrectly Implemented
- AR 02060246; 1FC-00474A/B Setpoint Adjust – EC 279296
- AR 02060265; 1FC-00475A/B Setpoint Adjust – EC 279296
- AR 02060271; 2FC-00464A/B Setpoint Adjust – EC 279296
- AR 02060273; 2FC-00465A/B Setpoint Adjust – EC 279296
- AR 02060276; 2FC-00474A/B Setpoint Adjust – EC 279296
- AR 02060277; 2FC-00475A/B Setpoint Adjust – EC 279296
- AR 02067197; Foxboro Refurbishment WO's
- CE 01962494; 1-FC-474A/B Recent Bistable OOT's
- CE 01967175; TS 3.1.1 NOTE 3 / TS 3.3.2 NOTE 1 Not Consistently Followed
- CE 02018291; As Found OOT 1TC-403D
- CE 02054210; 1FC-474B Found Out of Spec During WO 40332063 1ICP 02.001BL
- Function Lists for All Maintenance Rule Systems for RP; March 12, 2013
- Maintenance Rule Functional Failure Evaluation, ITM-00402B for AR 02049677
- Maintenance Rule Functional Failure Evaluation, LT-00426 for CR 01944790
- Maintenance Rule Performance Criteria for RP System; June 23, 2004
- NP 7.7.5; Maintenance Rule Monitoring; Revision 25
- NP 8.3.8; Maintenance Calibrations Response and Review; Revision 6
- Scope Change Request Form for AR 01962494; LOOP B Steam Flow High/High-High Bistable
- Unit 1 4.16kV System Health Report from April 1, 2015 – June 30, 2015
- Unit 1 Radiation Protection System Health Report from April 1, 2015 – June 30, 2015

- WO 40182511; 1TM-00402B / Refurbish Setpoint 1 Dynamic Compensator
- WO 40240493; 2-PC-486C Refurbishment Bistable
- WO 40253464; 1FC-474A/B Refurbish Bistable
- WO 40292087; 1TC-00408L / Refurbishment Needed
- WO 40305107; 2LC-472C, Repair and Refurbish Low Level Bistable
- WO 40315939; 1FC-475A/B: Refurbish Bistable 1R35 or Before
- WO 40315940; 1FC-464A/B: Refurbish Bistable 1R35 or Before
- WO 40356854; ITC-403A/D Refurbishment Bistable
- WO 40363201; 2PC-486C / Reinstall 2-PC-00486C Back into Plant
- WO 40399690; 1FC-474A/B – Still Drifting After Refurbishment

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

- AR 02051282; NP8.4.16, HELB Barriers, Doesn't Include All Barriers to EDG
- AR 02057542; Safety Monitor Look Ahead Scheduling on 5/19/2015
- AR 02065159; Fire MR(A)(4) In-Scope SSC OOS for More Than 30 Days
- AR 02073919; On-Line Safety Assessment of Scheduled Work
- Condition Report Search for Emergent Work from March 28, 2015 – September 28, 2015
- Condition Report Search for Safety Monitor from March 28, 2015 – September 28, 2015
- Control Room Log Entries for August 3, 2015 – August 7, 2015
- Control Room Log Entries for August 4, 2015 – August 6, 2015
- Control Room Log Entries for August 6, 2015 – August 7, 2015
- Control Room Log Entries for July 6, 2015
- Control Room Log Entries for July 17, 2015
- Control Room Log Entries for July 27, 2015
- ICP 06.008-1 Instrument and Service Air System 18 Month Calibration; Revision 12
- NP 10.3.7; On-Line Safety Assessment; Revision 34
- NP 10.3.7; On-line Safety Assessment; Revision 35
- PBF-1658; Safety Monitor Change Notice for PBTP 258 FW to SW Test; July 17, 2015
- Point Beach Station Daily Status Report; Unit 1; August 4, 2015
- Unit 1 Safety Monitor for July 6, 2015
- Unit 1 Safety Monitor for July 17, 2015
- Unit 1 Safety Monitor for July 27, 2015
- Unit 1 Safety Monitor for August 4, 2015
- Unit 1 Safety Monitor for August 5, 2015
- Unit 1 Safety Monitor for October 2, 2015
- Unit 2 Safety Monitor for July 6, 2015
- Unit 2 Safety Monitor for July 17, 2015
- Unit 2 Safety Monitor for July 27, 2015
- Unit 2 Safety Monitor for August 4, 2015
- Unit 2 Safety Monitor for August 12, 2015
- Unit 2 Safety Monitor for October 2, 2015
- Unit 2 Safety Monitor for October 9, 2015
- Unit 2 Safety Monitor for October 24, 2015

1R15 Operability Determinations and Functional Assessments (71111.15)

- 0-TS-EP-001; Weekly Power Availability Verification; Revision 17
- AR 01837285; HX-13A Spent Fuel Pool Heat Exchanger has Leak
- AR 01837905; Additional Investigation Shows Through Wall Hole on HX-13A
- AR 02011512; Unable to Complete Scheduled Activities

- AR 02039244; Significant Change to OD/FA Process Not Trained
- AR 02043804; SFP Cooler Degradation Worse & Replacement Stalled
- AR 02044783; Reduced Available Operator Response Time for DGB Flood
- AR 02052030; POR Request for W-185A & B A-06 Switchgear Room Fans
- AR 02055129; Non-Consequential Omission in FA02044783
- AR 02057684; Incomplete Surveillance – SR 3.8.9.1 Distribution System
- AR 02057722; (P) 0-TS-EP-001 – Weekly Power Availability Verification
- AR 02058356; Using Admin Controls for SR 3.8.9.1
- AR 02058356; Using Administrative Controls for SR 3.8.9.1
- AR 02058744; TS B 3.8.9 (LAR 273 & CR 2058356)
- AR 02061757; Low Wall Thickness on HX-13A SFP HX
- AR 02062041; Datum Point Unable to be Verified
- AR 02062318; TS B 3.8.9 – Distribution Systems-Operating
- AR 02066328; Compensatory Measures Not Created for Functionality Issues
- AR 02073745; Functionality Action Assignment Issues
- AR 02074593; Compensatory Measures for FA 2044783 Questioned
- ASME XI R/R/M Pressure Test Data Sheet for HX-013A; January 10, 2013
- Calculation 2014-04473; Internal Flooding Assessment of Emergency Diesel Generator Building; Revision 1
- Condition Report Search for Functionality Assessments from March 28, 2015 – September 28, 2015
- Condition Report Search for Operability Determination from March 28, 2015 – September 28, 2015
- Control Room Log Entries for Fire Pump
- Control Room Log Entries for March 20, 2013
- Control Room Log Entries for March 31, 2013
- Control Room Log Entries for April 1, 2013
- Control Room Log Entries for October 11, 2014
- Control Room Log Entries for October 24, 2014
- Control Room Log Entries for P-35
- Drawing E-222209; Diesel Generator Building Piping Arrangement Sections; Revision 5
- EC 284095; Heatup Evaluation of G03/G04 Switchgear Room; July 20, 2015
- EC 284298; Electrical Support for POR 2052030-01; July 16, 2015
- EN-AA-203-1001; Operability Determinations/Functionality Assessments; Revision 19
- EN-AA-203-1001; Operability Determinations/Functionality Assessments; Revision 20
- ER-AA-201-2001-10000; Attachment 6; Focused Bridging Strategy for Spent Fuel Pool Cooling & Filtration; February 10, 2014
- FA 02043804; Spent Fuel Pool Heat Exchangers HX-013A & HX-013B and the Attached Service Water (SW) System”; May 8, 2015
- FA 02044783; Reduced Available Operator Response Time for DGB Flood – Rev 1; July 30, 2015
- FA 02044783; Reduced Available Operator Response Time for DGB Flood; May 21, 2015
- FA 02044783; Reduced Available Operator Response Time for DGB Flood – Revision 1; July 30, 2015
- HX-13A Phased Array Scan Results; May 24, 2015
- LER 266/2015-001-00; Inadequately Sealed Pipe Penetrations Result in an Unanalyzed Condition for Internal Flooding; ; January 19, 2015
- PBF-1554; Repair/Replacement Form for HX-013B
- PI-AA-104-1000; Corrective Action; Revision 5
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- 0-PT-FP-002; Weekly Diesel Engine-Driven Fire Pump; Revision 15
- 0-PT-FP-002; Weekly Diesel Engine-Driven Fire Pump; Revision 16
- 0-SOP-DC-003; 125 VDC System, Bus D-03 & Components; Revision 15
- 1RMP 9045-5; 1DY-04 Yellow Channel Instrument Bus Static Inverter Maintenance Procedure; Revision 27
- 1-SOP-CC-001; Component Cooling System; Revision 26
- 2RMP 9036-6; 2DY-02 Blue Channel Instrument Bus Static Inverter Maintenance Procedure; Revision 28
- AR 01728040; W-86 Failed PMT – Low Flow Alarm in While Running in Slow
- AR 01889770; Unexpected Alarm for W-86 Low Flow
- AR 02063818; NRC Identified HELB Barrier Questions
- AR 02064783; New Valve SW-573, SW X-Connect From FP Shut
- AR 02069101; D-106/Low Individual Cell Voltage on Cell #48
- AR 02069303; NFPA 805 LAR Supplement Complete with Open FP Owner Comments
- AR 02072448; MTN Proc Doesn't Implement Reqs of HELB & Penetrating Barrie
- AR 02076105; P-35B Fails to Start on Battery 2
- Calculation N-93-059; D106 Sizing, Voltage Drop and Short Circuit Calculation; Revision 8
- Control Room Log Entries for July 6, 2015
- Control Room Log Entries for August 7, 2015
- CR 97-1419; Prompt Operability Determination (PODs) That Could Not be Located in the RES Files; April 30, 1997
- DBD-02; Component Cooling Water System; Revision 14
- DBD-17; Vital 120 VAC System Design Basis Document; Revision 7
- DBD-29; Auxiliary Building and Control Building HVAC; Revision 6
- EC 259770; NRC Order Fukushima FLEX Diesel Fire Pump Replacement / SW X-Tie NRC 2013-0024 Letter, NRC Order EA-12-0-49; Revision 10
- EC 281936; FS-4909/4910, Flow Switch Replacement; August 29, 2014
- Fire Protection Evaluation Report; Revision 14
- FSAR Section 8.6; 120 VAC Vital Instrument Power (Y); UFSAR 2013
- FSAR Section 8.7; 120 VDC Electrical Distribution System; UFSAR 2013
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- NP 8.4.16; PBNP High Energy Line Break Barriers/Vent Paths; Revision 20
- NPC-36820; Safety Evaluation Modification to Instrumentation Power Supply; April 21, 1980
- OI 35 (480V); 480V Electrical Equipment Operation; Revision 14
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- PBTP 258; P-35B Diesel Driven Fire Pump and Service Water Cross Tie Modification Acceptance Test; Revision 0
- PCR 02064890; P-35B Diesel Driven Fire Pump and Service Water Cross Tie Modification Acceptance Test
- Station Log for September 4, 2015
- VNBI Air Flow Measurements; January 26, 2012

- WO 347173-78; P-035B/Ops PMT Testing – EC 259770
- WO 40092908; W-86 PAB/BATT INVERT RM VENT Fan Air Filter; January 28, 2012
- WO 40143606; W-86 Failed PMT – Low Flow Alarm in While Running in Slow; April 18, 2012
- WO 40331279; 2DY-02 – Maintain and Inspect Inverter; July 8, 2015
- WO 40331279-01; 2DY, Perform De-Energized Portion of 2RMP 9036-6
- WO 40339105-01; 1P-011A/Install Support Bracket on IB/OB Oiler/Sight Glass
- WO 40342576; Diesel Engine-Driven Fire Pump Functional Test; August 7, 2015
- WO 40347176-01; 1P-011A-M, MCE Analyze Motor (1B52-10A/1B-03) w/RIC
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- 1ICP 02.001WH; Reactor Protection and Engineered Safety Features White Channel Analog 92 Day Surveillance Test; Revision 19
- 2ICP 02.001YL; Reactor Protection and Engineered Safety Features Yellow Channel Analog 92 Day Surveillance Test; Revision 19
- 2ICP 04.029-4; Rod Insertion Limit Control and T Comp Signal Input Outage Calibration; Revision 10
- ACE 02045383; Missed IST Surveillance Requirement; May 27, 2015
- AR 02045383; Missed 48 Month Testing Freq 1<sup>st</sup> Requirement
- AR 02065907; Vacuum Breaker 1CC-779A Missed IST Testing Frequency
- AR 02065938; Replace, Test Vacuum Relief 1CC-779A
- AR 02065940; Replace, Test 2CC-779A CC Surge Tank Vacuum Breaker
- IT 06 Train A; Train A Containment Spray Pump and Valves Unit 2; September 16, 2015
- IT 03 Train B; Low Head Safety Injection Pumps and Valves Train B Unit 1; Revision 1
- OP-AA-100-1000-F01; Adverse Condition Monitoring and Contingency Plan for DGB Fire System Integrity; May 26, 2015
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- STPT 6.1; Setpoints: Rod Insertion Limit Alarms; Revision 15
- TS 6; Rod Exercise Test Unit 2; Revision 33
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- WO 40353190; IT-06 Train A, 2P-14A Cont Spray Pump; September 16, 2015
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#### 1EP6 Drill Evaluation (71114.06)

- AOP 29; Security Threat; Revision 24
- AR 02066514; 2015-PreEx Sensitivity to Hostile Action Response
- AR 02066516; 2015-PreEx Coordination Between Facilities
- AR 02066517; 2015-PreEx Reentry Team Command and Control
- AR 02066518; 2015-PreEx Depth of Critique on Crew Performance
- AR 02066519; 2015-PreEx TRFD Facility Command and Control
- AR 02066520; 2015-PreEx Equipment Issues
- AR 02066521; 2015-PreEx TRFD RP Reentry Team Briefings
- AR 02066523; 2015-PreEx EOF Access for Incident Commander
- AR 02066525; 2015-PreEx County Dispatch Initial Reporting Template Confusion
- AR 02066526; 2015-PreEx Offsite Agencies Improvement Areas

- AR 02066527; 2015-PreEx On-Site Accountability During HAB Scenario
- AR 02066528; 2015-PreEx Security Processes at JPIC
- AR 02066531; 2015-PreEx Error in News Release from JPIC
- EPIP 1.1; Course of Actions; Revision 72
- EPIP 1.2; Emergency Classification; Revision 52
- EPIP 1.3; Dose Assessment and Protective Actions Recommendations; Revision 48
- EPIP 10.1; Emergency Reentry; Revision 33
- NARS Form for Drill; August 4, 2015 07:57 a.m.
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- Point Beach Emergency Preparedness Drill Scenario; August 4, 2015

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

- 2015 DAW Data Analysis per 10 CFR 61; August 13, 2015
- AR 01865299; Radioactive Shipment Vehicle in Accident
- AR 02060793; Issue with RDW 14.4 and Used Radioactive Oil Storage
- AR 02060871; Rad Material Storage Areas May Need Review for FSAR Update
- AR 02061452; Minor Discrepancy in Shipping Documents for SGLA
- RDW 14.3; Steam Generator Storage Facility Low-Level Radioactive Waste Storage Requirements; Revision 3
- RDW 14.4; Requirements for the Storage of Containers in Outside Areas Including Warehouse 7; Revision 6
- RDW 18.1; Determining Activity and Radionuclide Content of Radwaste and Radioactive Material Packages; Revision 8
- RDW 18.1.1; 10 CFR 61 Sampling Program; Revision 4
- RDW 18.2; Radwaste Classification, Shipment Type and Waste Stability Determination; Revision 2
- RP-AA-107; Radioactive Material Control Program; Revision 0
- RP-AA-108-1002; Shipment of Radioactive Material; Revision 3
- RP-AA-108-1003; Radioactive Materials Surveys for Shipment; Revision 1
- RP-AA-108-1004; Packaging Radioactive Materials for Shipment; Revision 0
- Transportation Package 14-024C; Unit 2 "A" Steam Generator
- Transportation Package 14-024E; Four Steam Generators on Canal Barge
- Transportation Package 14-024F; Four Steam Generators on Train
- Transportation Package 14-042; Dry Active Waste
- Transportation Package 14-052; Fuel Cleaning Equipment
- Transportation Package 15-008; Primary Resin

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- AR 01994937; MSPI Data Error for G-01 May 2014
- AR 01995233; Corrections to MSPI Data for EAC May 2014
- AR 02017498; MOB 182 Power Inadvertently Interrupted/CI Indication Lost
- AR 02017951; Trend Only Alert on 2P-15A SI Pump Vibes
- AR 02030649; Control Power Light Out for 50G/2A52-88 Ground Relay
- Control Room log Entries; Various Dates
- Maintenance Rule System Unavailability Report; May 26, 2015
- MSPI Derivation Report; MSPI Emergency AC Power System; Unavailability Index, Unit 1; December 2014

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- MSPI Derivation Report; MSPI Heat Removal System; Unreliability Index, Unit 2; March 2015
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- MSPI Document for Point Beach; Revision 24
- MSPI Indicator Margin Remaining in Green for EAC, HPI and HRS, Unit 1; September 2014
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- MSPI Monthly Unavailability and Verification for Auxiliary Feedwater System for March 2015; April 2, 2015
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- MSPI Monthly Unavailability and Verification for EAC system for April 2015; May 5, 2015

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- MSPI Monthly Unavailability and Verification for EAC system for February 2015; March 3, 2015
- MSPI Monthly Unavailability and Verification for EAC system for July 2014; August 4, 2014
- MSPI Monthly Unavailability and Verification for EAC system for September 2014; October 1, 2014
- MSPI Monthly Unavailability and Verification for SI system for February 2015; March 3, 2015
- MSPI Monthly Unavailability and Verification for SI system for July 2014; August 1, 2014
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- MSPI Monthly Unavailability and Verification for SI system for November 2014; December 1, 2014
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- 12Q0114-R-001; Seismic Walkdown Report in Response to the 50.54(f) Information Request Regarding Fukushima Near-Term Task Force Recommendation 2.3: Seismic; November 24, 2012
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- Apparent Cause Evaluation for AR 01654178; Packing Leak of 1RC-431B PZR Spray Valve
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- AR 01127323-011, 012, 013 Evaluation; May 4, 2009
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- AR 01342136; 2RC-431B Intermediate Leakoff Line Cracked
- AR 01342963; 2RC-431B Cracked Bellows Tell-Tale – Failure Analysis
- AR 01654178; Packing Leak of 1RC-431B PZR Spray Valve
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- AR 02057684; Incomplete Surveillance – SR 3.8.9.1 Distribution System
- AR 02058307; D-107 A1 Firing Card Replacement Decision Making Process
- AR 02058355; State Disagreement With PAR Strategy for Hostile Action GE
- AR 02058356; Using Administrative Controls for SR 3.8.9.1
- AR 02058410; XE-133/I-131 in U2 Containment Sump “A”
- AR 02058701; FS-3207 Failed to Actuate During TS-87
- AR 02059583; 2RC-431B Has A Bellows Leak and Packing Failure
- AR 02059958; EC 279296 Changes Incorrectly Implemented
- AR 02059975; Possible Gap Identified in Control Room
- AR 02060048; Grout of Shield Wall Not Installed Per MFG Instructions
- AR 02060236; REG Guide 1.21 Section 2.2 Conditions Are Not Being Met
- AR 02060246; 1FC-00474A/B Setpoint Adjust – EC 279296
- AR 02060328; High Vibration on Fan Axial Point
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- AR 02061183; Pipe Thinning Found in DDFP P-035B Discharge Piping
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- AR 02071120; 2DY-04 Swapped Over to Backup “Dirty” Power
- AR 02071174; Potential Trend of PZR Spray Valve Bellows
- BALCM Appendix C; Boric Acid Indication Evaluation; Revision 13
- Control Room Log Entries for September 2, 2015
- DBD-17; Vital 120VAC System; Revision 7
- Documentation of Maintenance Performance Criteria for RC system; January 11, 2002
- Drawing E-100 Sheet 2; Electrical Plot Plan; Revision 16
- Drawing PBC-270; Operations Office; Revision 1
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- Unit 2 SI Containment Sump A Sample Results from April 4, 2015 to July 18, 2015
- WO 40151331; 2RC-00431B Overhaul Valve and Replace Bellows as Required; February 17, 2015
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- X-Y Graph of Leakage Trends Past 400 Days; July 14, 2014 – July 15, 2015
- X-Y Graph of Leakage Trends Past 60 Days; May 11, 2015 – July 10, 2015

#### 40A3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

- 10 CFR Applicability Determination; Update FSAR Sections 6.2 Safety Injection System (SI) Section and 9.2.3 (RHR) System Evaluation of the FSAR; May 11, 2015
- ACE 02031054; D-107 Charger Did Not Current Limit During As-Found Checks – Rev. 01; June 25, 2015
- ACE 02052030; W-185 Fans Removed from Service Without Addressing Impact on Supported Safety-Related Equipment; September 11, 2015
- AOP-0.0; Vital DC System Malfunction; Revision 34
- AOP-0.0; Vital DC System Malfunction; Revision 35
- AR 01785426; Unit 1 Façade Flooding
- AR 01785471; 1Z-30 U1 Façade Elevator Flood
- AR 01785729; Long Standing Equipment Issue – Façade Flooding
- AR 01806858; Potential Ponding on Northwest Corner of the Protected Area
- AR 01948109; Internal Flooding Hazards in PAB not Fully Evaluated
- AR 01982413; Need Flood Protection at U2 Façade Doors 231 and 232
- AR 01984256; Alber Load Bank Anomaly
- AR 01987856; Current Configuration Not Previously Evaluated for Flooding
- AR 01989614; Vulnerability to External Flooding
- AR 01992690; 8” SW Supply, Return Pipe for BDE in PAB May Not be Seismic
- AR 02001639; License Basis Requirements for TB Roof Drains Questioned

- AR 02002165; Flooding Conveyance Path to Facades Not Analyzed
- AR 02002825; Legacy Flooding Modification Concerns
- AR 02004858; Question Screening of AR 2002825 for Functionality
- AR 02006362; PAB Flooding Alarm Feature Questioned
- AR 02006807; Rad Waste Storage Vaults/Flood Conveyance Path
- AR 02008004; Pipe Penetration Grout/Seal Degraded
- AR 02008551; Seal Penetrations in Half Wall In – 19 El. Unit 1 RHR Chase
- AR 02010158; Lack of Redundancy for Internal Flood Detection
- AR 02011512; Unable to Complete Scheduled Activities
- AR 02012950; Potential New Non-Seismic PAB Flood Sources
- AR 02013411; AOP-28 – (P)
- AR 02031282; D-107 Charger Current Limit Not Working Properly
- AR 02046480; Troubleshooting Documentation
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- AR 02080343; Flooding Model Did Not Properly Incorporate Relief Paths
- ARP 1C20 A 2-4; Auxiliary Building North Sump Level High; Revision 0
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- Calculation 2014-0009; In-leakage from Maximum Precipitation Flood; October 5, 2014
- Calculation 2014-0014; Develop Inputs Needed to Establish License Basis Piping Failure Flow Rates; December 19, 2014
- CE 01806858 & 01806867; Potential Ponding on Northwest Corner of Protected Area; October 9, 2012
- CE 02008004; Penetration Through the 7' Divider Wall in RHR Valve Galleries Not Sealed Well
- Change Request Form for AR 02008551; Seal Penetrations in Half Wall In – 19 EL. Unit 1 RHR Chase
- Condition Report Search for Flood from November 10, 2015 – November 20, 2015
- Construction Drawing for Temporary Low Level Radwaste Storage Vaults; October 25, 1980
- DBD-10; Residual Heat Removal System; Revision 10
- DBD-T-41; Hazards – Internal and External Flooding (Module A); Revision 12
- Drawing M-154; Auxiliary Building Drainage Area 8 – Plan at El. 8'-0"; Revision 4
- Drawing M-223; Sheet 3; Drainage & Sanitary Waste Systems; Revision 46
- Drawing PB 31S08003000100; Concrete Vaults; June 12, 1979
- Drawing PBC-346; Plant Area Stormwater Plan; Revision 7
- EC 0280162; Interior Flood Barriers Doors 12, 14, & 20
- EC 0281314; Seal Penetrations Between PAB Trench and Pipeways 2 & 3
- EC 0282029; Reinforce Masonry Wall Between Façade and PAB
- EC 0282379; Maximum Precipitation
- EC 0282395; 8" SW Header
- EC 0282899; Install Level Switches
- EC 0283217; Flood Barrier at Entrance to Pipeway 3
- FA 01806858; Potential Ponding on Northwest Corner of the Protected Area; October 1, 2012
- FA 02004858; Question Screening of AR 02002825 for Functionality: Inadequate Basis on CLB Change of Façade Flood (95002-4)
- Final Response to Task Interface Agreement 2005-10 Relating to Impact of Flooding on Residual Heat Removal (RHR) Pumps at Kewaunee Power Station (Task Interface Agreement (TIA) 2005-10)(TAC No. MC8937); May 5, 2006

- FSAR Section 9.2; Residual Heat Removal (RHR); UFSAR 2014
- FSAR Appendix A.2; High Energy Pipe Failure Outside Containment; UFSAR 2013
- FSAR Appendix A.7; Plant Flooding; UFSAR 2014
- LER 266/2015-001-00; Inadequately Sealed Pipe Penetrations Result in an Unanalyzed Condition for Internal Flooding; January 19, 2015
- LER 266/2015-004-00; Out-of-Service A-06 Switchgear Room Fans Result in Operation Prohibited by Technical Specifications
- Letter from Advisory Committee on Reactor Safeguards to Chairman, U.S. Atomic Energy Commission; Report on Point Beach Nuclear Plant, Unit No. 1; May 16, 1967
- Letter from Atomic Energy Commission to Wisconsin Electric Power Company; October 31, 1967
- Letter from NextEra Energy Point Beach to U.S. Nuclear Regulatory Commission; NextEra Energy Point Beach, LLC Response to 10 CFR 50.54(f) Request for Information Regarding Near-Term Task Force Recommendation 2.3, Flooding; November 20, 2012
- Letter from Westinghouse Electric Corporation to Bechtel Corporation; Residual Heat Pump Compartment; May 12, 1967
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- Letter from Westinghouse Electric Corporation to Wisconsin Michigan Power Company; Unit No. 2 FSAR Suppl. No. 1; December 29, 1967
- List of Open Operability/Functionality Issues for August 31, 2015
- List of Open Operability/Functionality Issues for September 4, 2015
- NEPB-87-250; Evaluation of SOER 85-5 Internal Flooding of Power Plant Buildings; April 16, 1987
- OM 3.7; AOP and EOP Procedure Usage for Response to Plant Transients; Revision 24
- PB041853-02; Refined FSAR Change Documents for the September 1996 FSAR Chapter 9; October 15, 1997
- POD AR 01948109; Internal Flooding Hazards in PAB Not Fully Evaluated; September 24, 2014
- POR 02008551; Seal Penetrations in Half Wall in -19 El. Unit 1 RHR Chase; January 15, 2015
- POR 02052030; POR Request for W-185A & B A-06 Switchgear Room Fans; July 20, 2015
- Preliminary Facility Description and Safety Analysis Report Supplement 1; Dated January 11, 1968
- RMP 9359-6A; D-105 Station Battery, D-107 Battery Charger Maintenance and Surveillances; Revision 8
- WO 40302870-14; D-107 Current Limit Out of Range; August 14, 2014
- WO 40302870-15; D-107, Troubleshoot and Repair Battery Charger; August 13, 2014
- WO 40351967-01; WL/Perform Flow Verification of PAB Floor Drain Lines
- WO 40353503-01; PAB/Investigate Material in Half Wall – 19 El. sU1 RHR Chase

#### 40A5 Other Activities

- EC-0000284296; (Evaluation 2015-0016, Revision 0) Locally Intense Precipitation Flooding Coping Strategies (Flood Levels); Revision 0
- FPL-076-FHRPR; Point Beach Flood Hazard Reevaluation Report; Revision 2
- Supplemental Information Related To Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident; ML13044A561



## LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AOP	Abnormal Operating Procedure
AR	Action Request
CAP	Corrective Action Program
CDF	Core Damage Frequency
CCDP	Conditional Core Damage Probability
CCW	Component Cooling Water
CFR	<i>Code of Federal Regulations</i>
CW	Circulating Water
DDFP	Diesel-Driven Fire Pump
DGB	Diesel Generator Building
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPRI	Electric Power Research Institute
ET	Exposure Time
FA	Functional Assessment
FP	Fire Protection
FSAR	Final Safety Analysis Report
GPM	Gallons Per Minute
HEP	Human Error Probability
IEF	Initiating Event Frequency
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
JPM	Job Performance Measure
KV	Kilovolt
LER	Licensee Event Report
LERF	Large Early Release Frequency
LLC	Limited Liability Corporation
LOCA	Loss-of-Coolant-Accident
LOOP	Loss of Offsite Power
LORT	Licensed Operator Requalification Training
MSPI	Mitigating Systems Performance Index
MCR	Main Control Room
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
OOS	Out-of-Service
PAB	Primary Auxiliary Building
PARS	Publicly Available Records System
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PMT	Post-Maintenance Testing
POD	Prompt Operability Determination
POR	Past Operability Review
PWR	Pressurized Water Reactor
QA	Quality Assurance

RASP	Risk Assessment Standardization Project
RCS	Reactor Coolant System
RFO	Refueling Outage
RHR	Residual Heat Removal
RP	Radiation Protection
SAT	Systems Approach to Training
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SG	Steam Generator
SI	Safety Injection
SRA	Senior Risk Analyst
SSC	Structures, Systems, and Components
SSD	Safe Shutdown
SW	Service Water
TS	Technical Specification
VAC	Volts Alternating Current
VDC	Volts Direct Current
WO	Work Order
WR	Work Request

E. McCartney

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Sincerely,

***/RA John Rutkowski Acting for/***

Jamnes Cameron, Chief  
Branch 4  
Division of Reactor Projects

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