



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

May 12, 2017

Mr. Brian D. Boles  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station  
5501 North State Rte. 2, Mail Stop A-DB-3080  
Oak Harbor, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION—NRC INTEGRATED INSPECTION  
REPORT 05000346/2017001, NOTICE OF VIOLATION, AND QUARTERLY  
ASSESSMENT LETTER**

Dear Mr. Boles:

On March 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Davis-Besse Nuclear Power Station. On April 10, 2017, the NRC inspectors discussed the results of this inspection with Mr. Brian Matty, Manager, Plant Engineering, and other members of your staff. The enclosed report documents the results of this inspection.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that a violation is associated with this issue. This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's web site at (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>).

This violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. The violation is being cited in the Notice, consistent with the NRC Enforcement Policy, Section 2.3.2.a.2, because Davis-Besse Nuclear Power Station failed to restore compliance and failed to have objective plans to restore compliance in a reasonable time period following the NRC identification of an associated Non-Cited Violation (NCV) on June 26, 2014. The associated NCV was documented in Inspection Report (IR) 05000346/2014003 (ADAMS Accession Number ML14212A468)

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Based on the results of this inspection, no other findings were identified.

If you contest the violation or significance of the violation, you should provide a response as specified in the Notice. If you disagree with the cross-cutting aspect assignment to the 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 Davis-Besse Nuclear Power Station. To the extent possible, your response should not include any personal, privacy, or proprietary information so that it can be made available to the Public without redaction.

In addition, the NRC completed its quarterly performance assessment of the Davis-Besse Nuclear Power Station, reviewing performance indicators (PIs), inspection results, and enforcement actions from January 1, 2017, through March 31, 2017. This letter informs you of the NRC's assessment of your facility during this period. The NRC concluded that overall performance at your facility preserved public health and safety.

The NRC determined that the performance of Davis-Besse during the first quarter of 2017 was within the Regulatory Response Column of the NRC's Reactor Oversight Process (ROP) in Inspection Manual Chapter (IMC) 0305, "Operating Assessment Program" because of a White performance indicator (PI) in the Initiating Events Cornerstone. As required by the NRC ROP Action Matrix, a supplemental inspection was performed in accordance with Inspection Procedure (IP) 95001, "Supplemental Inspection Response to Action Matrix Column 2 Inputs." The purpose of the inspection was to examine the causes for, and actions taken related to the White PI in the Initiating Events Cornerstone. The inspection results were documented in IR 05000346/2017011, dated April 17, 2017, (ADAMS Accession No. ML17107A387).

In the first quarter 2017 report of PIs, the Davis-Besse PI "Scrams with Complications" returned to a Green level. Based on the inspection results documented in IR 05000346/2017011 and that the Davis-Besse Scrams with Complications PI returned to a Green level, the Davis-Besse Nuclear Power Station transitioned to the Licensee Response Column of the NRC's ROP Action Matrix, effective the date of this letter, in accordance with the provisions of IMC 0305.

This letter, its enclosure, and your response will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

*/RA/*

Jamnes L. Cameron, Chief  
Branch 4  
Division of Reactor Projects

Docket No. 50-346  
License No. NPF-3

Enclosures:

- (1) Notice of Violation
- (2) IR 05000346/2017001

cc: Distribution via LISTSERV®

Letter to Brian D. Boles from Jamnes Cameron dated May 12, 2017

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION—NRC INTEGRATED INSPECTION REPORT 05000346/2017001, NOTICE OF VIOLATION, AND QUARTERLY ASSESSMENT LETTER

DISTRIBUTION:

Jeremy Bowen  
RidsNrrDorLpl3  
RidsNrrPMDavisBesse Resource  
RidsNrrDirslrib Resource  
Cynthia Pederson  
Darrell Roberts  
Richard Skokowski  
Allan Barker  
Carole Ariano  
Linda Linn  
DRPIII  
DRSIII  
[ROPreports.Resource@nrc.gov](mailto:ROPreports.Resource@nrc.gov)

ADAMS Accession Number: ML17132A193

OFFICE	RIII	RIII	RIII	RIII
NAME	Rskokowski:tt	PLouden	KObrien	JCameron
DATE	5/11/2017	5/12/2017	5/12/2017	5/12/2017

**OFFICIAL RECORD COPY**

## NOTICE OF VIOLATION

FirstEnergy Nuclear Operating Company  
Davis-Besse Nuclear Power Station

Docket No. 50–346  
License No. NPF–3

During an U.S. Nuclear Regulatory Commission (NRC) inspection conducted from March 20, 2017, through March 24, 2017, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Title 10 of the *Code of Federal Regulations* (CFR), Part 50, Appendix B, Criterion XI, “Test Control,” requires, in part, that a test program be established to assure that all testing required to demonstrate that structures, systems, and components (SSCs) will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. It also stated that test results shall be documented and evaluated to assure that test requirements have been satisfied.

Contrary to the above, as of June 26, 2014, the licensee failed to assure that testing, required to demonstrate that the emergency core cooling system room coolers would perform satisfactorily in service, was identified and performed in accordance with written test procedures which incorporated the requirements and acceptance limits contained in applicable design documents. In addition, the licensee failed to document and evaluate the associated test results to assure that test requirements have been satisfied. Specifically, Preventive Maintenance (PM) 4801, PM 4802, PM 4803, and PM 4804 did not have acceptance tube blockage and biofouling/silt deposit limits, and the associated inspection results were not documented and evaluated to demonstrate the acceptability of the emergency core cooling system room coolers’ thermal performance.

This violation is associated with a Green significance determination process finding.

Pursuant to the provisions of 10 CFR 2.201, FirstEnergy Nuclear Operating Company, is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555–0001 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Davis-Besse Nuclear Power Station within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a “Reply to a Notice of Violation; VIO 05000346/2017001–01,” and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555–0001.

## Notice of Violation

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from ADAMS, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 12<sup>th</sup> day of May, 2017.

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-346  
License No: NPF-3

Report No: 05000346/2017001

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Dates: January 1 through March 31, 2017

Inspectors: D. Mills, Senior Resident Inspector  
T. Briley, Resident Inspector  
P. Smagacz, Resident Inspector-Fermi Power Plant  
N. Feliz-Adorno, Senior Reactor Inspector  
G. O'Dwyer, Reactor Inspector  
J. Rutkowski, Project Engineer

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

## TABLE OF CONTENTS

NOTICE OF VIOLATION .....	1
SUMMARY.....	2
REPORT DETAILS.....	3
Summary of Plant Status .....	3
1.    REACTOR SAFETY .....	3
1R01    Adverse Weather Protection (71111.01) .....	3
1R04    Equipment Alignment (71111.04).....	4
1R05    Fire Protection (71111.05).....	4
1R07    Heat Sink Performance (71111.07T).....	5
1R11    Licensed Operator Requalification Program (71111.11) .....	9
1R12    Maintenance Effectiveness (71111.12) .....	11
1R13    Maintenance Risk Assessments and Emergent Work Control (71111.13).....	11
1R15    Operability Determinations and Functional Assessments (71111.15).....	12
1R19    Post-Maintenance Testing (71111.19).....	13
1R22    Surveillance Testing (71111.22).....	14
1EP6    Drill Evaluation (71114.06) .....	15
4.    OTHER ACTIVITIES.....	16
4OA1    Performance Indicator Verification (71151).....	16
4OA2    Identification and Resolution of Problems (71152).....	17
4OA5    Other Activities.....	18
4OA6    Management Meetings .....	19
SUPPLEMENTAL INFORMATION .....	2
Key Points of Contact.....	2
List of Items Opened, Closed, and Discussed.....	2
List of Documents Reviewed.....	3
List of Acronyms Used.....	15



## SUMMARY

Inspection Report 05000346/2017001; 1/1/17 – 3/31/17; Davis-Besse Nuclear Power Station; Heat Sink Performance.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One (Green) finding was identified by the inspectors. The finding involved an associated Cited Violation of U.S. Nuclear Regulatory Commission (NRC) requirements. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated November 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

### **NRC-Identified and Self-Revealed Findings**

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

Green. The inspectors identified a finding of very low safety significance (Green) and an associated Cited Violation of Title 10 of the *Code of Federal Regulations*, (10 CFR) *Part 50*, Appendix B, Criterion XI, "Test Control," for the licensee's failure to establish a test program that demonstrates the emergency core cooling system (ECCS) room coolers will perform satisfactorily in service. Specifically, the associated inspection procedures did not include acceptance criteria, and the inspection results were not documented and evaluated to demonstrate the ECCS room coolers' thermal performance was acceptable. The licensee captured this issue in their corrective action program (CAP) as condition report (CR) 2017-03328 to, in part, restore compliance and assess current and past operability.

The performance deficiency was determined to be more than-minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Specifically, the failure to demonstrate the ECCS room coolers will perform satisfactorily in service does not ensure the coolers would remain available and capable of performing their mitigating function because it has the potential to allow an unacceptable condition to go undetected. The finding screened as of very-low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee re-evaluated the past operability impact of the 2016 tube blockage discoveries and determined that coolers were operable by crediting actual service water temperature and flowrate conditions. The inspectors determined that the associated finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. (Section 1R07.b(1)) [P.2]

## REPORT DETAILS

### Summary of Plant Status

The unit began the inspection period operating at full power. On February 24, reactor power was reduced to 50 percent and remained at reduced power until February 27, to support main condenser maintenance. With the exception of small power maneuvers (e.g., reductions of 10 percent power or less) to facilitate planned evolutions and testing, the unit remained operating at or near full power for the balance of the inspection period.

### 1. REACTOR SAFETY

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

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

##### .1 Readiness for Impending Adverse Weather Condition—Severe Thunderstorm Watch and Severe Thunderstorm Warning

##### a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for the evening of February 24, 2017 and into the early morning of February 25, 2017, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On February 24, 2017, the inspectors walked down the licensee's off-site power and emergency alternating current power systems because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of CAP items to verify that the licensee-identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report.

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

##### b. Findings

No findings were identified.

## 1R04 Equipment Alignment (71111.04)

### .1 Quarterly Partial System Walkdowns

#### a. Inspection Scope

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

- the station's motor driven feedwater pump while auxiliary feedwater (AFW) train No. 2 was out of service for various preventative maintenance activities during the week ending January 21, 2017;
- electric fire pump while the diesel fire pump was out of service for corrective maintenance during the week ending January 28, 2017; and
- high pressure injection (HPI) train No. 1 while HPI train No. 2 was out of service for various preventative maintenance activities during the week ending January 28, 2017.

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, USAR, Technical Specification (TS) requirements, outstanding work orders (WOs), CRs, 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 walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- control room heating, ventilating, and air conditioning room; auxiliary building elevation 638' (Room 603 – Fire Area HH) during the week ending January 14, 2017;
- emergency core cooling system (ECCS) pump room 1-1; auxiliary building elevation 545' and 555' (Room 105 – Fire Area AB) during the week ending February 18, 2017;
- ECCS pump room 1–2; auxiliary building elevation 545' and 555' (Room 115 – Fire Area A) during the week ending March 18, 2017; and
- AFW Pump 2 Room; turbine building elevation 565' (Room 238 – Fire Area F) during the week ending March 18, 2017.

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

These activities constituted four quarterly fire protection inspection samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07T)

.1 Triennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed operability determinations, completed surveillances, vendor manual information, calculations, performance test and inspection results, and procedures associated with the ECCS room coolers and containment air coolers. These coolers were chosen based, in part, on their risk significance in the licensee's probabilistic safety analysis, important safety-related mitigating system support functions, and operating history.

For the selected coolers, the inspectors reviewed the methods used during testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling. Specifically, the inspectors assessed the consistency of these methods with test conditions and

accepted industry practices or equivalent. In addition, the inspectors assessed the associated acceptance criteria and reviewed the documentation, evaluation, and disposition of as-found results. The inspectors also assessed the condition and operation of the coolers by considering design assumptions included in heat transfer calculations, such as tube plugging limits, and design basis information described in the USAR. This review also considered the potential for water hammer. The inspectors performed a walkdown of the ECCS room coolers and assessed their material condition.

The inspectors reviewed the performance of the ultimate heat sink (UHS), safety-related component cooling water (CCW) system, and their subcomponents such as piping and valves. Specifically, the inspectors assessed the licensee's inspection of the UHS intended to identify degradation of the shoreline protection or loss of structural integrity and documentation associated with debris or sediment removal. In addition, the inspectors reviewed analyses, monitoring activities, hydrographic surveys, and dredging documentation intended to ensure sufficient UHS reservoir capacity. The inspectors also performed a system walkdown of the CCW system to assess the licensee's structural integrity monitoring activities, reviewed CCW chemistry monitoring activities and verified the absence of any active thru wall pipe leaks since the last U.S. Nuclear Regulatory Commission (NRC) inspection. The inspectors also reviewed CCW system pressurization test results and operating logs, and interviewed operations and engineering staff to identify adverse CCW make-up trends that could be indicative of excessive leakage out of the closed system.

In addition, the inspectors reviewed CAP documents related to the selected coolers and heat sink performance issues to assess the licensee's threshold for identifying issues and the effectiveness of the corrective actions.

The documents that were reviewed are included in the Attachment to this report. These inspection activities constituted three heat sink inspection samples as defined in Inspection Procedure 71111.07-05.

b. Findings

(1) Failure to Establish a Test Program that Demonstrates the Emergency Core Cooling System Room Coolers Will Perform Satisfactorily in Service

Introduction: A finding of very-low safety significance (Green) and associated Cited Violation of 10 CFR, Part 50, Appendix B, Criterion XI, "Test Control," was identified by the inspectors for the licensee's failure to establish a test program that demonstrates the ECCS room coolers will perform satisfactorily in service. Specifically, the associated inspection procedure did not include acceptance criteria, and inspection results were not documented and evaluated to demonstrate the ECCS room coolers thermal performance was acceptable.

Description: On July 18, 1983, the NRC issued Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety-Related Equipment," to alert licensees about operating experience and studies that raised concerns regarding service water (SW) systems in nuclear power plants. The GL requested licensees, in part, to provide a response describing the actions planned or taken to ensure that their SW systems were and will be maintained in compliance with applicable regulatory requirements. The licensee provided its final response in a letter to the NRC titled, "Supplemental Response to GL 89-13," dated September 9, 1993. The response stated, in part,

“Toledo Edison [the licensee] has an on-going performance test program for heat exchangers at Davis-Besse Nuclear Power Station that is consistent with recommendation II of GL 89–13.” This recommendation was to, “Conduct a test program to verify the heat transfer capability of all safety-related heat exchangers cooled by service water.” The licensee established NOP–ER–2006, “Service Water Reliability Management Program,” as the GL 89–13 program implementing procedure governing this test program. The test strategy for the safety-related ECCS room coolers was to inspect-and-clean when determined necessary based on performance testing trending. The performance testing only measured differential pressure and flowrate on a quarterly basis.

On June 26, 2014, the inspectors identified that the licensee could not follow procedure NOP–ER–2006 because the ECCS room cooler inspection procedures did not include acceptance criteria. This issue was captured by the licensee in their CAP as CR 2014–10995 and was documented by the inspectors as Non-Cited Violation (NCV) 05000346/2014003–04 in Inspection Report (IR) 05000346/2014003, dated July 31, 2014. The licensee closed CR 2014–10995 on October 15, 2015. On February 8, 2017, a licensee self-assessment discovered that the affected procedures (i.e., preventative maintenance (PM) 4801, PM 4802, PM 4803, and PM 4804) still did not include acceptance criteria and that the inspection results were not documented in a format that fully described the condition of the coolers. This discovery was captured in the CAP as CR 2017–01387. The associated actions intended to correct the issue were to develop the acceptance criteria and revise the PMs to include inspection results documentation instructions and the acceptance criteria.

During this inspection period, the inspectors noted the PM revisions tracked by CR 2017–01387 would also add a note stating, “as-found acceptance criteria is not applicable for this order [PMs], as the results of as-found examination are to be documented for trending purposes only.” It also stated “function of the room cooler is demonstrated by performance testing per DB–PF–04736.” However, the performance testing was designed as an inspect-and-clean trigger as opposed to a thermal performance demonstration. Specifically, it did not assess the available heat transfer area and fouling conditions. Thus, the actions taken under CR 2017–01387 would not correct the issue. In addition, the licensee did not assess the current and past operability of the coolers. The inspectors were particularly concerned because the licensee’s CAP documented the discovery of blocked tubes during two inspections conducted in 2016 (i.e., CR 2016–14091 and CR 2016–13276), and incorrectly credited the performance testing results to conclude these discoveries were acceptable.

The licensee captured the inspectors’ concerns in the CAP as CR 2017–03328. The proposed corrective action to restore compliance at the time of this inspection was to evaluate the current ECCS room cooler test strategy, propose changes to demonstrate thermal performance, and re-evaluate the past-operability impact of the 2016 tube blockage discoveries. In addition, the licensee reasonably determined the coolers were operable at the time of the inspection based on the documented as-left conditions associated with the cleaning performed in the winter of 2016.

Analysis: The inspectors determined that the failure to establish a test program that demonstrates the ECCS room coolers will perform satisfactorily in service was contrary to 10 CFR 50, Appendix B, Criterion XI, “Test Control,” and was a performance deficiency. The performance deficiency was determined to be more than minor because

it was associated with the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Specifically, the failure to demonstrate the ECCS room coolers will perform satisfactorily in service does not ensure the coolers would remain available and capable of performing their mitigating function because it has the potential to allow an unacceptable condition to go undetected.

The inspectors determined the finding could be evaluated using the significance determination process in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," issued on October 7, 2016. Because the finding impacted the Mitigating Systems and Barrier Integrity cornerstones, the inspectors screened the finding through IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012, using Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as of very-low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee re-evaluated the past-operability impact of the 2016 tube blockage discoveries and determined that coolers were operable by crediting actual SW temperature and flowrate conditions.

This finding is being treated as NRC-identified in accordance with IMC 0612, "Power Reactor Inspection Reports." Specifically, although it was initially identified by the licensee, the inspectors identified inadequacies in the licensee's classification, evaluation, and correction of the issue.

The inspectors determined that the associated finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the licensee failed to document and evaluate inspection results against acceptance criteria because they did not thoroughly evaluate the issues documented in CR 2014-10995, CR 2016-14091, CR 2016-13276, and CR 2017-01387. [P.2]

Enforcement: Title 10 CFR 50, Appendix B, Criterion XI, "Test Control," requires, in part, that a test program be established to assure that all testing required to demonstrate that structures, systems, and components (SSCs) will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. It also stated that test results shall be documented and evaluated to assure that test requirements have been satisfied.

Contrary to the above, as of June 26, 2014, the licensee failed to assure that testing, required to demonstrate that the ECCS room coolers would perform satisfactorily in service, was identified and performed in accordance with written test procedures which incorporated the requirements and acceptance limits contained in applicable design documents. In addition, the licensee failed to document and evaluate the associated test results to assure that test requirements have been satisfied. Specifically, PM 4801, PM 4802, PM 4803, and PM 4804 did not contain acceptance tube blockage and biofouling/silt deposit limits, and the associated inspection results

were not documented and evaluated to demonstrate the acceptability of the ECCS room coolers' thermal performance.

The licensee is still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance does not present an immediate safety concern because the licensee reasonably determined the coolers were operable based on a review of the most recent post-cleaning records.

This violation is being cited as described in the Notice, which is enclosed with this IR. This is consistent with the NRC Enforcement Policy, Section 2.3.2.a.2, which states, in part, that the licensee must restore compliance within a reasonable period of time (i.e., in a timeframe commensurate with the significance of the violation) after a violation is identified. The NRC identified the original issue on June 26, 2014, and dispositioned it as NCV 05000346/2014003-04 in IR 05000346/2014003, dated July 31, 2014. On March 23, 2017, the inspectors determined that the licensee failed to restore compliance within a reasonable time following the identification of this NCV and failed to have objective plans to restore compliance. (VIO 05000346/2017001-01, Failure to Establish a Test Program that Demonstrates the Emergency Core Cooling System Room Coolers Will Perform Satisfactorily in Service)

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On February 28, 2017, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.



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

a. Inspection Scope

During the course of the inspection period, the inspectors performed several observations of licensed operator performance in the plant's control room to verify that operator performance was adequate and that plant evolutions were being conducted in accordance with approved plant procedures. Specific activities observed that involved a heightened tempo of activities or periods of elevated risk included, but were not limited to:

- plant power maneuvers to 99.5 percent reactor thermal power for non-nuclear instrumentation steam generator No. 2 main feedwater flow module repair/replacement during the week ending January 28, 2017;
- control room response to unexpected fire alarm during the week ending February 13, 2017;
- manual bypass of low pressure feedwater heater 2–2 due to suspected tube leakage during the week ending February 25, 2017;
- plant power maneuvers to 50 percent and removal from service of main feed pump No. 1 in preparation for maintenance on main condenser during the week ending February 25, 2017; and
- plant power ascension to 100 percent and restoration of main feed pump No. 1, following maintenance on main condenser during the week ending March 4, 2017.

The inspectors evaluated the following areas during the course of the control room observations:

- licensed operator performance;
- the crew's clarity and formality of communications;
- the ability to take timely actions in the conservative direction;
- the prioritization, interpretation, and verification of annunciator alarms;
- the correct use and implementation of normal operating, annunciator alarm response, and abnormal operating procedures by the crew;
- control board manipulations;
- the oversight and direction provided by on-watch senior reactor operators and plant management personnel; and
- the ability to identify and implement appropriate TS actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

These observation activities by the inspectors of operator performance in the station's control room constituted five quarterly licensed operator heightened activity/risk samples as defined in IP 71111.11–05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- decay heat pump 2 bearing performance.

The inspectors reviewed events such as where ineffective equipment maintenance had 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 also performed a quality review for the recent maintenance activities associated with decay heat pump 2 bearing oil, as discussed in IP 71111.12, Section 02.02.

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:

- emergent repair and replacement activities associated with emergency ECCS room cooler 1 motor following unexpected energized motor test data of the replacement motor during the week ending January 28, 2017;
- emergent repair activities associated with component cooling water heat exchanger 3 outlet butterfly valve (CC33) flange misalignment following license renewal inspection during the weeks ending February 4, 2017, through February 25, 2017;
- emergent repair activities associated with auxiliary feedwater (AFW) pump 2 governor repair during the week ending March 18, 2017; and
- isolation of, and bypass of, low-pressure feedwater heater 2–2 utilizing throttling of the heater bypass valve as evaluated in Operational Decision Making Issue 17–02 during the week ending March 18, 2017.

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

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- the operability and functionality of high pressure injection (HPI) train 2 following identification of high recirculation flow during routine testing, as documented in CR 2017–00796;
- the operability and functionality of the AFW pump with the governor high speed/low speed stop switching functionality disabled as documented in CR 2017–02933; and
- the operability and functionality of the Intake structure and service water system housed therein with missile barriers removed for maintenance as documented in CR 2017–00532.

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 Updated Safety Analysis Report (USAR) 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 three samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- auxiliary feed pump train 1 following maintenance on the steam generator No. 2 to auxiliary feed pump turbine isolation valve and oil change;
- power range nuclear instrument calibration of nuclear instruments 5, 6, and 8 and associated heat balance checks during the week ending January 21, 2017;
- reactor trip breaker 'C' following breaker replacement during the week ending January, 28, 2017;
- SW pump No. 3 following motor refurbishment and replacement during the week ending February 4, 2017; and
- AFW pump No. 2 following governor repair/stepper motor replacement during the week ending March 18, 2017.

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 USAR, 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 five post-maintenance testing 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:

- station blackout diesel generator 24–month periodic testing during the week ending February 18, 2017, (routine);
- periodic control rod exercising test during the week ending February 25, 2017, (routine);
- periodic at-power turbine valve testing during the week ending March 4, 2017, (routine);
- containment spray pump and valve quarterly testing during the week ending March 18, 2017, (routine);
- containment quarterly entry walkdown and closeout inspection during the week ending March 31, 2017, (routine); and
- containment personnel airlock seal leakage test during the week ending March 31, 2017, containment isolation valve (CIV).

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 USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;

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

Documents reviewed are listed in the Attachment to this report.

This inspection constituted five routine surveillance testing samples and one CIV 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 preparedness drill on February 25, 2017, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the control room simulator, Technical Support Center, and Emergency Operations 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.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours performance indicator (PI) for the period from January 2016 to December 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee’s operator narrative logs, issue reports, event reports and NRC integrated inspection reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee’s issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one unplanned scrams per 7000 critical hours sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications performance indicator for the period from January 2016 to December 2016. 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 and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee’s issue report

database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one unplanned scrams with complications sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours performance indicator for the period from January 2016 to December 2016. 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, maintenance rule records, event reports and NRC Integrated Inspection Reports for the period to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one unplanned transients per 7000 critical hours sample 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 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, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues were entered into the licensee's CAP as a result of the inspectors' observations; however, they are not discussed in 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.



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 daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily CR packages.

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

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/192; "Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems"

a. Inspection Scope

The objective of this performance based temporary instruction (TI) is to verify implementation of interim compensatory measures associated with an open phase condition (OPC) design vulnerability in electric power system for operating reactors. The inspectors conducted an inspection to determine if the licensee had implemented the following interim compensatory measures. These compensatory measures are to remain in place until permanent automatic detection and protection schemes are installed and declared operable for OPC design vulnerability. The inspectors verified the following:

- the licensee had identified and discussed with plant staff the lessons-learned from the OPC events at the US operating plants including the Byron station OPC event and its consequences. This includes conducting operator training for promptly diagnosing, recognizing consequences, and responding to an OPC event;
- the licensee had updated plant operating procedures to help operators promptly diagnose and respond to OPC events on off-site power sources credited for safe shutdown of the plant;
- the licensee had established and continue to implement periodic walkdown activities to inspect switchyard equipment such as insulators, disconnect switches, and transmission line and transformer connections associated with the offsite power circuits to detect a visible OPC; and

- the licensee had ensured that routine maintenance and testing activities on switchyard components have been implemented and maintained. As part of the maintenance and testing activities, the licensee assessed and managed plant risk in accordance with 10 CFR 50.65(a) (4) requirements.

b. Findings and Observations

No findings of significance were identified. The inspectors identified that the licensee conducted training with operations personnel to understand the industry experience with an open phase event. The licensee had not provided operator training for promptly diagnosing an open phase event beyond the existing training for responding to annunciator alarms. The licensee normally operates while at power with plant electrical busses powered from the main generator with power from the switchyard through two startup transformers as fully capable alternate sources. The licensee has an open phase monitoring system with each of the two startup transformers. In the event of an annunciator alarm, the associated annunciator procedures direct personnel to verify annunciators at the alarming transformer. Operator tours also require a daily visual inspection of conductors and switchyard equipment associated with the startup transformers. The licensee also schedules semi-annual thermography inspection of switchyard components with similar inspections after switchyard switching operations and after certain natural events, such as high winds, that might damage switchyard components.

This TI is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 10, 2017, the inspectors presented the inspection results to Mr. Brian Matty 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 March 24, 2017, the inspectors presented the inspection results to Mr. D. Imlay, 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. Proprietary material received during the inspection was returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

B. Boles, Site Vice President  
K. Byrd, Director, Site Engineering  
D. Blakely, Supervisor, Nuclear Engineering Analysis  
T. Brown, Director, Site Performance Improvement  
J. Cuff, Manager, Site Training  
J. Cunnings, Manager, Site Maintenance  
A. Dawson, Manager, Site Chemistry  
D. Hartnett, Superintendent, Nuclear Operations  
T. Henline, Manager, Site Projects  
J. Hofelich, Supervisor Nuclear Supply Systems Engineering  
D. Imlay, General Plant Manager  
G. Laird, Manager, Site Operations  
B. Matty, Manager, Plant Engineering  
P. McCloskey, Manager, Site Regulatory Compliance  
G. Michael, Manager, Design Engineering  
D. Noble, Manager, Site Radiation Protection  
G. Nordlund, Superintendent, Radiation Protection  
W. O'Malley, Manager, Fleet Oversight  
R. Oesterle, Superintendent, Nuclear Operations Services  
R. Patrick, Manager, Site Work Management  
B. Pollauf, Supervisor, Nuclear Plant Systems Engineering  
J. Sturdavant, Regulatory Compliance  
J. Vetter, Manager, Emergency Response  
L. Willis, Manager, Site Protection  
G. Wolf, Supervisor, Regulatory Compliance  
K. Zellers, Manager, Technical Services Engineering

#### U.S. Nuclear Regulatory Commission

J. Cameron, Chief, Reactor Projects Branch 4

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000346/2017001-01	VIO	Failure to Establish a Test Program that Demonstrates the Emergency Core Cooling System Room Coolers Will Perform Satisfactorily in Service
---------------------	-----	---

### Closed

TI 2515/192	TI	Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems
-------------	----	--

### Discussed

None

## 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

#### Condition Reports:

- 2017-00435; Potential Missed Emergency Plan Off Normal Occurrence Implementation

#### Procedures:

- DB-OP-01300; Switchyard Management; Revision 12
- NG-DB-00204; Control of Vehicles and Heavy Equipment Near Vital Station Equipment; Revision 3
- NOP-OP-1003; Grid Reliability Protocol; Revision 8
- NOP-OP-1012; Material Readiness and Housekeeping Inspection Program; Revision 8
- RA-EP-02810; Tornado or High Winds; Revision 12

#### Notifications:

- 601082427; Review Weather Advisory Notifications

### 1R04 Equipment Alignment

#### Condition Reports:

- 2016-05518; Gasket Leaking Above E184-2 Motor Driven Feed Pump Seal Water Cooler
- 2015-08857; Aux Feedwater Level Control System Increasing Trend in Hardware Deficiencies
- 2015-04148; Leak on Motor Driven Feed Pump Lube Oil Cooler
- 2016-07174; EFP Oil Level Discrepancies
- 2016-07578; HIS1052A Green Indicating Light for the Electric Fire Pump was Found Out
- 2016-07864; FP2984 (EFP Discharge Relief) Leak By
- 2014-18636; MDFP Minimum Recirc Flow Outside Acceptance Criteria
- 2016-13548; System Monitoring – Fire Suppression System Leakage
- 2016-14462; Loss of Electric Fire Pump Indication
- 2017-00895; HP113 Handwheel Stripped Off and Falling Off Stem

#### Procedures:

- DB-FP-04048; Electric Fire Pump Test; Revision 12
- DB-OP-06011; High Pressure Injection System; Revision 31
- DB-SS-03091; Motor Driven Feed Pump Quarterly Test; Revision 16
- DB-SS-03090; Motor Driven Feed Pump Monthly Valve Verification; Revision 11

#### Drawings:

- M-006D; Auxiliary Feedwater System; Revision 59
- M-007B; Steam Generator Secondary System; Revision 61
- M-016A; Station Fire Protection System; Revision 57
- M-016B; Station Fire Protection System; Revision 52
- M-033A; High Pressure Injection; Revision 48
- OS-0003; High Pressure Injection System; Revision 39

- OS-0010; Sheet 1; Condensate System; Revision 23
- OS-0010; Sheet 2; Condensate System; Revision 9
- OS-0010; Sheet 3; Condensate System; Revision 15
- OS-0012A; Sheet 1; Main Feedwater System; Revision 26
- OS-0012A; Sheet 2; Main Feedwater System; Revision 34
- OS-0017A; Sheet 1; Auxiliary Feedwater System; Revision 34
- OS-0017B; Sheet 1; Auxiliary Feedwater Pumps and Turbines; Revision 25
- OS-0047A; Sheet 1; Station Fire Protection System; Revision 26

Notifications:

- 601016012; EFP Panel Batteries Need Replaced
- 601028547; Fire Water Storage Tank Heat Exchanger End Bell Flange Leaking
- 601045817; Electric Fire Pump Stop Indication Out
- 601047125; FP2984 Leaking By

Other:

- M-140-00038; Instruction Manual – Electric Fire Pump P5-1; Revision 9

1R05 Fire Protection

Condition Reports:

- 2017-00430; Floor Drain Under CTRM Chiller 1 Has No Strainer Installed
- 2016-11728; Black Bag of Insulation on Floor Near Sump in ECCS Room 1
- 2016-04898; Poor Housekeeping in ECCS Room 2
- 2016-03948; Extension Cord Running Through Door 119A
- 2017-01578; Door 105 Not Latching Consistently
- 2017-00823; Partially Charged Fire Hoses

Procedures:

- DB-FP-04023; Fire Rated Barrier Visual Inspection; Revision 19
- DB-FP-04024; 18 Month Fire Damper Visual Inspection; Revision 10
- DB-FP-00003; Pre-Fire Plan Guidelines; Revision 9
- DB-FP-00005; Fire Brigade; Revision 8
- DB-FP-00007; Control of Transient Combustibles; Revision 13
- DB-FP-00009; Fire Protection Impairment and Fire Watch; Revision 22
- DB-FP-00018; Control of Ignition Sources; Revision 12
- DB-OP-02501; Serious Station Fire; Revision 25
- DB-OP-02529; Fire Procedure; Revision 9
- DB-MS-01637; Scaffolding Erection and Removal; Revision 16

Pre-Fire Plans:

- PFP-AB-603B; Air Conditioning Equipment Room Vestibule, Room 603B, Fire Area HH; Revision 4
- PFP-AB-03; A/C Equipment Room and Records and Storage Area, Rooms 603 and 603A, Fire Area HH; Revision 4
- PFP-AB-238; Auxiliary Feed Pump 2 Room, Room 238, Fire Area F; Revision 04
- PFP-AB-105; ECCS Pump Room 1-1, Room 105, Fire Area AB; Revision 08
- PFP-AB-115; ECCS Pump Room 1-2, Room 115, Fire Area A; Revision 05

Drawings:

- M-0450; Heating, Ventilating, and Air Conditioning Control Room Plan at El. 638'-0"; Revision 27
- A-0224F; Fire Protection General Floor Plan El. 603'-0"; Revision 23
- A-0222F; Fire Protection General Floor Plan El. 565'-0"; Revision 11
- A-0223F; Fire Protection General Floor Plan El. 585'-0"; Revision 14
- A-221F; Fire Protection General Floor Plan El. 545'-0" & 555'-0"
- A-2121; Barrier Penetration Drawing, Barrier 105-S, Auxiliary BLDG; Sheet 4 of 9; Revision 1
- A-2123; Barrier Penetration Drawing, Barrier 106A-N, Auxiliary BLDG; Sheet 2 of 6; Revision 0
- A-228F; Fire Protection Sections A-A & B-B; Revision 3
- A-229F; Fire Protection Sections C-C & D-D; Revision 7

Other:

- Fire Hazard Analysis Report; Revision 26

1R07T Heat Sink Performance

Condition Reports:

- 2015-06474; Low Margin in UHS Allowable Silt Depth
- 2015-07435; Leak on CC3721
- 2014-15167; Average Silt Depth Above Design Limit of 24"
- 2014-10995; NRC 2014 UHS Inspection: Non-Conformance with NOP-ER-2006
- 2017-01387; 2017 Triennial UHS Self-Assessment – Deficiencies with Heat Exchanger Inspection PMs
- 2017-03248; Degraded Structural Steel Fireproofing on Column HA/8.2
- 2017-03256; NRC 2017 UHS Inspection: Corrosion on CCW Surge Tank Lines
- 2017-03260; NRC 2017 UHS Inspection: Streaking on the Wall Behind the CCW Surge Tank
- 2017-03313; NRC 2017 UHS Inspection: Material Condition of CC372
- 2017-03328; NRC 2017 UHS Inspection: Vulnerabilities Identified with ECCS Room Cooler Clean/Inspection Strategy

Procedures:

- NOP-ER-2006; Service Water Reliability Management Program; Revision 3
- DB-SP-03000; Service Water Loop 1 Integrated Flow Balance Procedure; Revision 18
- DB-PF-04736; ECCS Room Cooler Monitoring Test; Revision 8
- DB-PF-04729; Containment Air Cooler Monitoring Test; Revision 7
- NG-EN-00557; Closed Cooling Water Chemistry Inspection Program
- DB-OP-06016; Containment Air Cooling System Procedure; Revision 35

Work Orders:

- 200619717; ECCS Room Cooler 1 Clean & Inspect
- 200685433; ECCS Room Cooler 4 Clean & Inspect
- 200375178; ECCS Room Cooler 2 Clean & Inspect
- 200375180; ECCS Room Cooler 5 Clean & Inspect
- 200632829; ECCS Room Cooler 1 Clean & Inspect
- 200587268; ECCS Room Coolers 4 and 5 Clean & Inspect
- 200608378; ECCS Room Cooler 4 and 5 Clean & Inspect
- 200607164; CAC 1 PM 5536 NW Clean & Inspect
- 200607165; CAC 2 PM 5537 NW Clean & Inspect
- 200607166; CAC 3 PM 5538 NW Clean & Inspect
- 200511167; CAC 1 SE Side Clean & Inspect & Eddy Current

- 200517203; DB-SP-03000 SW Loop 1 Flow Balance Test
- 200633389; DB-PF4729-001 CAC1 Monitoring
- 200624705; DB-PF4729-001 CAC1 Monitoring
- 200623027; DB-PF4729-003 CAC3 Monitoring
- 200631513; DB-PF4729-003 CAC3 Monitoring
- 200394582; Inspecting the Embankment Above and Below Water Surface and Remove Some Silt
- 200617205; Clean and Remove Intake Canal Tree and Brush
- 200574458; Clean and Remove Intake Canal Tree and Brush
- 200530551; Clean and Remove Intake Canal Tree and Brush
- 200556326; Repair Degraded Area Between Station 5+00 – 10+00 on North Intake Canal Dike
- 200696124; Bathymetric Survey on Forebay and Intake Canal
- 200466577; Forebay and Intake Canal Inspection Identified Excessive Silt
- 200601298; CCW System Pressurization Leakage Test
- 200646399; CCW System Pressurization Leakage Test
- 200630335; Intake Canal Dredging 0+00 to 10+00
- 200619213; Intake Canal Dredging of STA 10 and Up

Other:

- SWRPM; NRC Generic Letter 89-13 Service Water Reliability Program Manual; Revision 2
- Notification 601089814; Engineering Evaluation of 12/02/16 Bathymetric Survey Results
- 600970486; Correct Leak on CC3721
- C-CSS-11.01-157; Pipe Stress Analysis: Service Water System Water Hammer Evaluation
- C-NSA-011.01-004; Service Water Pump Startup/Coastdown Time for CAC Water Hammer Input
- C-NSA-60.05-007; CAC Heat Duty at Elevated SW Inlet Temperatures
- C-NSA-032.02-006; ECCS Pump Room Heatup During Post-LOCA

1R11 Licensed Operator Regualification Program and Licensed Operator Performance

Condition Reports:

- 2017-01972; Received Unexpected Annunciator Alarms 13-4-C and 13-4-D Deaerator Storage Tank Level and Deaerator Storage Tank 2 Level
- 2017-02063; FW488 Required Assistance to Seat While Lowering MFPT 1 Speed
- 2017-02131; MFPT #1 Speed Not as Expected
- 2017-02075; Digital Electro Hydraulic Control (DEHC) Minor Alarms for Input Voltage to DEHC Main Control Cabinet During Plant Down Power
- 2017-02105; February 2017 Down Power – Condenser as Found/as Left
- 2017-02125; Reactor Coolant Xenon Ratios

Procedures:

- DB-OP-02013; Condensate Feedwater Alarm Panel 13 Annunciators; Revision 11
- DB-OP-06221; Condensate System; Revision 22
- DB-OP-06401; Integrated Control System Operating Procedure; Revision 25
- DB-OP-06407; Non-Nuclear Instrumentation System Operating Procedure; Revision 15
- NOP-OP-1002; Conduct of Operations; Revision 12
- DB Operations Crew Notebook; Revision 0
- Operations Training Scenario ORQ-EPE-S253
- DBRM-EMER-1500B; Hot EAL Wall Board, Revision 1



## 1R12 Maintenance Effectiveness

### Condition Reports:

- 2001-00115; P42-2 Discoloration of Lubricant in Outboard Bearing
- 2002-00872; Decay Heat Pump 2 Outboard Bearing Oil Discoloration
- 2002-01424; Decay Heat Pump 1 Inboard Bearing Oil Discolored
- 2003-02753; Decay Heat Pump 2 Inboard Bearing Oil Discolored and Contains Trace Copper
- 2005-04633; #2 Decay Heat Pump Outboard Bearing Oil Sample Discolored
- 2011-04580; P42-1 Outboard Bearing Oil Discoloration
- 2013-00006; Discolored Oil in P42-2 Outboard Bearing Reservoir
- 2014-04879; During Post Maintenance Testing of Decay Heat Pump 2 Outboard Oil Sample was Discolored
- 2017-01656; Oil Sample on Decay Heat Pump #2 Outboard Bearing Grayish in Color
- 2017-01746; Decay Heat Pump 2 Outboard Bearing Oil Level Above High Mark

### Procedures:

- DB-MM-01009; Lubricant Sampling Methods; Revision 7
- DB-MM-01012; Equipment Lubricant Filtration; Revision 3
- DB-MM-01013; Lubricant Addition; Revision 7
- DB-MN-00004; Control of Lubricants; Revision 8
- DB-MM-09174; Decay Heat Removal Pump Maintenance; Revision 22
- DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 69
- DB-SP-03347; Decay Heat Train 2 Pump and Valve Test (Mode 1-3); Revision 3
- NOP-ER-3004; FENOC Maintenance Rule Program; Revision 2

### Work Orders:

- 200669045; PM 0287 P42-2 Decay Heat Pump and Motor 2 Lubrication Change
- 200707106; P42-2 Decay Heat Pump 2 Flush/Re-Lube Outboard Bearing Oil
- 200707108; Contingent – Replace Decay Heat Pump 2 Outboard Bearing

### Other:

- Cycle 19 Periodic Maintenance Effectiveness Report (PMEAR)
- Davis-Besse System Health Report 2015-2, 2015 Second Half
- Davis-Besse Nuclear Power Station Lubrication Data Sheet; P42-1,2; Revision 27
- MRPM; Maintenance Rule Program Manual; Revision 36
- Post Maintenance Test Manual; Revision 50
- Vendor Manual M-517-00024; Decay Heat Removal Pump Instruction Book; Revision 9

## 1R13 Maintenance Risk Assessments and Emergent Work Control

### Condition Reports:

- 2017-00926; Test Data for New #1 ECCS Room Cooler Motor is Not Bound by AC System Analysis
- 2017-01023; On-Line Risk Impacted by Test Results of Plant Equipment
- 2017-01127; DB-CC33 CCW # 3 Heat Exchanger Outlet Valve / Flange Misalignment
- 2017-01163; Valve CC33 Actuator Orientation Does Not Match Drawing M-236D
- 2017-01277; DB-CC33 Discharge Valve has Damaged Threads on One of the Bottom Bearing Bushing Upper Half Assembly

- 2017-00131; Likely Low Pressure Feedwater Heater Tube Leak on Train 2 LP Feedwater Heaters
- 2017-02933; AFPT Speed Control Does Not Respond

Procedures:

- DB-MM-09225; Belt Driven Equipment Maintenance; Revision 6
- DB-MM-09266; Torqueing; Revision 10
- DB-OP-06221; Condensate System; Revision 23
- DB-PF-05064; Electrical Machine Testing Using PdMA Motor Tester; Revision 15
- DB-PF-09308; Routine Maintenance of Electrical Motors and Generators; Revision 3

Work Orders:

- 200596852; ECP 15-0436 PM 6550 MC31-1 Vendor Clean / Inspect / Refurbish
- 200631810; PM 1225 C31-1 Inspect ECCS Room Cooler
- 200689473; CC33 VT-1 Examination
- 200708600; Perform UT Thickness – CD162 and Piping
- 200709323; Auxiliary Feed Pump Turbine 1-2

Drawings:

- M-215-00023; Cross Sectional Drawing 20" Double R/L Valve; Revision 4
- M-236D; Component Cooling System C.C. Heat Exchanger Outlet Piping El. 585'-0"; Revision 23
- OS-0021; Sheet 1; Component Cooling Water System; Revision 39
- OS-0034; Sheet 2; Auxiliary Building Radioactive HVAC Systems; Revision 24

Notifications:

- 601085575; Engineering Evaluation Request - DB-CC33 Flange Valve Stud Holes Misalign
- 601092370; AFPT 2 Governor control from CTRM
- 601099365; Track BETA analysis AFW 2 Motor

Calculations:

- C-CSS-100.00-148; Minimum Thread Engagement Acceptance Criteria Calculation; Revision 0

Engineering Change Packages:

- ECP 15-0436-001; ECCS Room Cooler Motor, MC31-1 Replacement; Revision 0

Other:

- ODMI 17-02; Review Potential Solutions to MWe Loss Due to Operations with CD162 LPFW 2-2 Bypass Open; Revision 0
- SD-26A; Condensate System; August 19, 2008
- AFP 2 Immediate Investigation 17-02933

1R15 Operability Determinations and Functionality Assessments

Condition Reports:

- 2002-06253; HPI Pump Minimum Flow Requirement Discrepancy
- 2014-10719; HPI 2 Minimum Recirculation Flow Out of 50-57 gpm (58 gpm) Band for SP-3219
- 2014-13563; HPI Pump 1 Recirculation Flow Did Not Meet Test Requirements
- 2017-00796; HPI #2 Quarterly Recirculation Flow Higher than the Expected Range
- 2017-01023; On-Line Risk Impacted by Test Results of Plant Equipment

- 2007-09323; Auxiliary Feed Pump Turbine 1-2
- 2017-02933; AFPT Speed Control Does Not Respond
- 2016-06300; AFP 2 Governor Does Not Function Correctly on First Attempt
- 2013-13535; AFP 1 Governor Not Responding During Monthly Testing
- 2016-06153; AFP 1 Governor LSS Light Not Working During DB-SP-04152
- 2016-14540; AFP 2 Hunting at HSS
- 2017-00866; Concerns with SW Pump Room Roof Caulk
- 2017-00129; Service Water Pump 3 Motor Installation Delayed
- 2017-00778; Gap in Gum Rubber Seat for Intake Structure Roof Hatch
- 2017-00532; Intake Structure Functionality with Missile Barrier Removed

Procedures:

- DB-OP-06011; High Pressure Injection System; Revision 31
- DB-PF-06704; Pump Performance Curves; Revision 37
- DB-SP-03219; HPI Train 2 Pump and Valve Test; Revision 26
- DB-SP-03160; AFP 2 Quarterly Test; Revision 27
- DB-OP-06233; Auxiliary Feedwater System; Revision 40
- DB-MM-09184; Service Water Pump Motor Removal and Replacement; Revision 3
- DB-MN-00006; Control of Lifting and Handling of Heavy Loads; Revision 17

Work Orders:

- 200298255; Auxiliary Feedwater Pump Turbines
- 200708600; Perform UT Thickness – CD162 and Piping
- 200709323; Auxiliary Feed Pump Turbine 1-2
- 200577347; PM 5887 MP3-3 Refurb SW Pump Motor

Drawings:

- M-0033A; High Pressure Injection; Revision 48
- OS-003; High Pressure Injection System; Revision 39
- OS-0020, Sheet 1; Service Water system; Revision 95

Calculations:

- C-NSA-052.01-003; HPI Pump Acceptance Criteria; Revision 8

Notifications:

- 601092370; AFPT 2 Governor Control from CTRM
- 601099365; Track BETA Analysis AFW 2 Motor
- 601081710; SW Pump Room Temperature with Hatch Removed

Other:

- AFP 2 Immediate Investigation 17-02933
- System Description for Auxiliary Feedwater System
- FORM-2017-02933-2; Mode Hold Resolution - AFPT Operability
- FORM-2017-00532-1; Past Operability Evaluation for Intake Structure Functionality with Missile Barrier Removed

1R19 Post Maintenance Testing

Condition Reports:

- 2015-08977; NRC Observed Trend in Verification Errors
- 2017-01023; On-Line Risk Impacted by Test Results of Plant Equipment

- 2017-00844; Broken Cubicle Rack-Out Indicator Tape Found During Breaker Swap
- 2016-06213; Three Reactor Trip Breakers (B, C, and D) Opened Unexpectedly During Performance of DB-MI-03012
- 2017-01057; Impeller Clearance Discrepancies Identified During Coupling of the #3 Service Water Pump and Motor
- 2017-01236; SW Pump 3 Baseline Test Design Engineering Evaluation
- 2017-01233; Documenting that MP3-3 Testing per DB-PF-05000 Identified 2 of the 6 Stator Resistance Temperature Detectors (RTD) are Degraded or Have Failed
- 2017-01232; The Temperature Stabilization per DB-PF-05000 Motor Testing for MP3-3, Thrust Bearing Oil Temperature, Was Not Able to be Achieved

Procedures:

- DB-MI-05252; Nuclear Instrument NI 06 (RPS Channel 1) Power Range Adjustment; Revision 13
- DB-MI-05254; Nuclear Instrument NI 05 (RPS Channel 2) Power Range Adjustment; Revision 13
- DB-MI-05255; Nuclear Instrument NI 08 (RPS Channel 3) Power Range Adjustment; Revision 13
- DB-NE-03230; RPS Daily Heat Balance Check; Revision 16
- DB-NE-03231; RPS Monthly Imbalance Check; Revision 4
- DB-OP-06403; Reactor Protection System (RPS) and Nuclear Instrumentation (NI) Operating Procedure; Revision 22
- DB-PF-06703; Miscellaneous Operation Curves; Revision 23
- DB-SP-03152; AFW Train 1 Level Control, Interlock, and Flow Transmitter Test; Revision 30
- DB-SP-03151; AFP 1 Quarterly Test; Revision 24
- DB-ME-03020; Reactor Trip Breaker Response Time Test; Revision 4
- DB-MI-03014; Channel Functional Test of Reactor Trip Breaker C; Revision 30
- DB-OP-06402; CRD Operating Procedure; Revision 28
- DB-OP-01000; Operation of Station Breakers; Revision 32
- DB-SP-04159; AFP 2 Monthly Test; Revision 19
- DB-PF-05000; Motor Testing; Revision 6
- DB-PF-03216; Baseline Testing of Service Water Pump 3 in Modes 1-4; Revision 7
- DB-PF-05064; Electrical Machine Testing Using PdMA Motor Tester; Revision 15
- NOP-OP-1001; Clearance/Tagging Program; Revision 24
- DB-MM-05003; Vibration Monitoring; Revision 11

Drawings:

- M-0003C; Piping and Instrument Diagram Main Steam and Reheat System; Revision 65
- M-0006D; Piping and Instrument Diagram Auxiliary Feedwater System; Revision 59

Work Orders:

- 200566664; Steam Generator 2 to AFPT 1 Isolation Valve (HV106A)
- 200690770; Change AFPT 1 Outboard Bearing Oil
- 200623104; PM7370 C4612 Swap Brkr
- 200638670; CH4 RTB RTM/ARTS Logic
- 200634776; AFP 2 Monthly Test

## 1R22 Surveillance Testing

### Condition Reports:

- 2017-04078; Discrepancies Between Limits and Precautions and Acceptance Criteria for DB-SS-04151, Main Turbine Control Valve Test
- 2016-01457; Foreign Material Removed from Containment
- 2017-03641; Containment Entry on 3-30-17, Green Dust Identified on Containment 565 Level Near Containment Air Cooler Discharge Ductwork
- 2017-04744; Containment Housekeeping Practices
- 2016-01414; Piece of Insulation Found in Containment
- 2017-03639; Containment Entry 3-30-17 Loose Debris Discovered
- 2017-02965; Operations Exceeded Dose Estimate for DB-SP-03338 CTMT Spray Pump and Valve Test
- 2017-03643; Containment Entry 3-30-17 Water Puddle Identified at Bottom of East D-Ring in Front of #2 Steam Generator
- 2017-03383; SBODG Building Sump Pumps are Mechanically Bound
- 2017-00675; SBODG Voltage Regulator Lights are Flashing During Run
- 2017-01917; Small Oil Leak of SBO DC Fuel Priming Pump
- 2016-10399; SBODG Air Compressor 1 Failed to Start on Low Pressure in SBODG Air Receiver 1

### Procedures:

- DB-OP-06401; Integrated Control System Operating Procedure; Revision 25
- DB-OP-06402; CRD Operating Procedure; Revision 28
- DB-SC-03272; Control Rod Exercising Test; Revision 5
- DB-SS-04150; Main Turbine Stop Valve Test; Revision 15
- DB-SS-04151; Main Turbine Control Valve Test; Revision 16
- DB-SS-04152; Main Turbine Combined Intermediate Valve Test; Revision 11
- DB-OP-03013; Containment Daily Inspection and Containment Closeout Inspection; Revision 10
- DB-PF-03291; Containment Personnel and Emergency Airlocks Seal Leakage Test; Revision 13
- DB-SP-03338; Containment Spray Train 2 Quarterly Pump and Valve Test; Revision 27
- DB-SC-04275; SBODG 24 Month Test; Revision 1
- DB-OP-06334; Station Blackout Diesel Generator Operating Procedure; Revision 24
- DB-SC-04271; SBODG Monthly Test; Revision 26
- DB-SC-04274; SBODG Dead-Bus Load Test; Revision 9
- DB-CH-04044; SBODG Lubricating Oil and Water Jacket Sampling and Analysis; Revision 9

### Drawings:

- M-0033C; Decay Heat Train 2, Revision 30
- M-0034; Emergency Core Cooling System Containment Spray and Core Flooding Systems; Revision 71
- OS-0005; Operational Schematic Containment Spray System; Revision 14
- E-64B SH 26B; SBO DSL Gen BRKR AD301 Control & Trip; Revision 5

### Notifications:

- 601044418; DB-SC-03272 Document Change Request
- 601094508; Main Turbine Control Valve Test DB-SS-04151 Change
- 601090006; DB-SC-04275 Clarification of Procedure Steps

Work Orders:

- 200634767; CS9 FWD Flow
- 200633006; CS04 Pressure Test
- 200577160; SBODG 24 Month Test

Other:

- ALARA Plan 2017-2001; Containment Entry in Mode 1 to Perform a Walk Down / Inspection of 603', 585', and 565' Elevation; Revision 1
- E-021-00031-02 General Electric Instruction Manual for Negative Sequence Time Overcurrent Relays

1EP6 Drill Evaluation

Condition Reports:

- 2017-01969; 2017 Emergency Preparedness Drill (Site Protection); 2/21/2017
- 2017-02050; EP Drill 2/21/17 EOF Integrated Drill Summary Report; 2/21/2017
- 2017-02153; EP Drill 2/21/17 TSC Integrated Drill Summary Report; 2/21/2017
- 2017-02011; EP Drill 2/21/17 OSC Integrated Drill Summary Report; 2/23/2017
- 2017-01962; 2/21/17 Integrated Drill TSC Self-Critique; 2/23/2017
- 2017-02045; EP Drill 2/21/17 Simulator Debrief Comments; 2/24/2017
- 2017-02139; EP Drill 2/21/17: Reactor Operations Considerations for Site Area and General Emergency Considerations; 2/24/2017
- 2017-02014; EP Drill 2/21/17 CT9 and CT10 Potential Ambiguity; 2/24/2017
- 2017-02043; EP Drill 2/21/17 Simulator Simulation Issues; 2/24/2017
- 2017-02013; EP Drill 2/21/17 Simulator Communications Issues; 2/23/2017
- 2017-02128; EP Drill 2/21/17 JIC Integrated Drill Summary Report; 2/27/2017
- 2017-02301; EP Drill – Irregularities Noted in EData (State of Ohio); 3/03/2017
- 2017-02309; EP Drill Incorrect Characterization of Release in Progress; 3/03/2017
- 2017-02345; EP Integrated Drill (2/21/17) – Dose Assessment Center Areas for Improvement; 3/04/2017
- 2017-02304; EP Drill – MIDAS dose Assessment software data irregularities; 3/03/2017
- 2017-2311; EP Drill – 2/21/17 Integrated Drill – RTL Roll-Up of Areas for Improvement; 3/03/2017

Procedures:

- NOBP-LP-5001; Fleet Support of Emergency Plans at FENOC Nuclear Plants; Revision 6
- RA-EP-01500; Emergency Classification; Revision 15
- RA-EP-02010; Emergency Management; Revision 18
- RA-EP-02220; Emergency Operations Facility Activation and Response; Revision 14
- RA-EP-02310; Technical Support Center Activation and Response; Revision 13

Other:

- DBNPS Emergency Plan
- Davis-Besse Emergency Preparedness 2017 Integrated Drill Manual; 2/21/2017
- DBRM-EMER-1500B; Hot EAL Wall Board, Revision 1
- DBRM-EMER-1500B; Cold EAL Wall Board, Revision 1

4OA1 Performance Indicator Verification

Forms:

- NOBP-LP-4012-44; Initiating Events Cornerstone Indicators; Revision 0

FENOC Business Practices:

- NOBP-LP-4012; NRC Performance Indicators; Revision 5

Other:

- Select Operator Logs Covering the Period of January 2016 Through December 2016

4OA2 Problem Identification and Resolution

Condition Reports:

- 2017-00200; Oversight Identified Unsatisfactory Housekeeping Issues Throughout Various Buildings and Areas on Site
- 2017-00198; Incorrect Performance of Concurrent Verification Practices (CV) During Order 200690770
- 2017-00200; PA-DB-16-06: Oversight Identified Unsatisfactory Housekeeping Issues Throughout Various Buildings and Areas on Site
- 2017-03428; Door 408 Found Unlocked
- 2017-03539; Sway Strut AF-6A-HBD-272-H5 Configuration Questioned
- 2017-00980; L1 Breaker 02 is Closed and Labeled Spare
- 2017-00981; Labeling Discrepancy on Panel L2
- 2017-00804; MS-C-17-01-09: Inaccurate Coating Specification Reference in Procedure
- 2017-02262; Aux Feed Pump 2 Oil Level High
- 2017-02278; Debris Identified External and Internal to CRD Cabinets C4801Y & C4801X
- 2017-03304; Control Rod Drive Cabinet Debris Analysis Results
- 2017-02249; Primary Met Tower 100 Meter Wind Speed Failed
- 2017-01146; Consolidated Data Entry Correction for Chemistry CEI Data
- 2017-00832; Diesel Fire Pump Engine Sump Oil Level Sbove the High Mark
- 2017-00881; Diesel Fire Pump Oil/Coolant Level Findings
- 2017-01078; Cap Installed at Drain Point for CCW Heat Exchanger
- 2017-00961; Freeze Protection Circuit 16
- 2017-00971; Fuse for Tech Spec Related Freeze Protection Cabinet CFP03Q is Blown
- 2017-00974; Freeze Protection Circuit 11Q, BWST Level Valve SFAS Channel 3, is Reading Low in the CTRM

Procedures:

- NOP-LP-2001; Corrective Action Program; Revision 39

Other:

- Select Operator Logs Covering the Period of January 2017 Through March 2017

4OA5 Other Activities

Condition Reports:

- 2012-03738; Potential Vulnerability Similar to the Condition Identified in IER 12-14

Procedures:

- DB-OP-02001; Electrical Distribution Alarm Panel 1 Annunciators; Revision 36
- DB-OP-02101; Startup Transformer 01 Alarm Panel 101 Annunciators; Revision 05
- NORM-ER-3902; FENOC Switchyard; Revision 5
- RA-EP-02810; Tornado or High Winds; Revision 12

Drawings:

- RA-EP-02810; Tornado or High Winds; Revision 12

Other:

- 345KV Switchyard – (SUB 001-01); Component Monitoring Plan Details; 9/17/2015
- ECP 14-0408; Design, Install, and Monitor a New Open Phase Protection System; Revision 01
- IER 2012-14; Automatic Reactor Scram Resulting from a Design Vulnerability in the 4.16-kV Bus Undervoltage Protection Scheme; 2/26/2012
- Training Material; Current Events OTLC Cycle 14-02



## LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	<i>Code of Federal Regulations</i>
CIV	Containment Isolation Valve
CR	Condition Report
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
GL	Generic Letter
HPI	High Pressure Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OPC	Open Phase Condition
PI	Performance Indicator
PM	Preventive Maintenance
SSC	Structure, System, and Component
SW	Service Water
TS	Technical Specification
UHS	Ultimate Heat Sink
USAR	Updated Safety Analysis Report
WO	Work Order