



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

January 28, 2015

Mr. Raymond Lieb
Site Vice President
FirstEnergy Nuclear Operating Co.
Davis-Besse Nuclear Power Station
5501 N. State Rte. 2, Mail Stop A-DB-3080
OAK HARBOR, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION NRC INTEGRATED INSPECTION
REPORT 050000346/2014005**

Dear Mr. Lieb:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Davis-Besse Nuclear Power Station. The enclosed report documents the results of this inspection, which were discussed on January 15, 2015, with the Director of Site Operations, Mr. Thomas Summers, and other members of your staff.

Based on the results of this inspection, one self-revealed finding of very low safety significance was identified. The finding also involved a violation of NRC requirements. Additionally, a licensee-identified violation is listed in Section 4OA7 of this report. 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 (NCV) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of this NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 2055-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission-Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors' Office at the Davis-Besse Nuclear Power Station. 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 Davis-Besse Nuclear Power Station.

R. Lieb

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

Sincerely,

/RA/

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

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

Enclosure:
Inspection Report 05000346/2014005
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000346/2014005

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Dates: October 1, 2014, through December 31, 2014

Inspectors: D. Kimble, Senior Resident Inspector
T. Briley, Resident Inspector
R. Baker, Operations Licensing Examiner
J. Beavers, Emergency Preparedness Inspector
M. Mitchell, Health Physicist
R. M. Morris, Senior Operations Licensing Examiner
A. Schwab, Resident Inspector (Acting)

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

Enclosure

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SUMMARY OF FINDINGS

Inspection Report 05000346/2014005; 10/1/14–12/31/14; Davis-Besse Nuclear Power Station; Maintenance Risk Assessments and Emergent Work Control.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. A single Green finding was identified by the inspectors. The finding was also considered a non-cited violation (NCV) 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 (SDP)" dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross Cutting Areas" with an effective date of January 1, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. 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.

NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- **Green.** A self-revealed finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4.1(a) were identified when the licensee failed to provide proper procedural guidance for the restoration from valve maintenance on HD291G, a manual isolation valve for the level controller for HD291A, the emergency drain valve for High Pressure (HP) Feedwater Heater No. 1–4, on November 13, 2014. Specifically, the licensee's restoration instructions did not isolate HD291A prior to restoring its associated level controller. As a result, when a perturbation in the level controller during restoration caused HD291A to rapidly reposition to the fully open position, the resulting HP Feedwater Train 1 transient caused HP Feedwater Heaters 1–4, 1–5, and 1–6 to trip. The change in plant efficiency that resulted momentarily drove plant power slightly above 100 percent.

This finding was associated with the Initiating Events Cornerstone of reactor safety and was of more than minor significance because it directly impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Using Exhibit 1, the inspectors determined that the finding screened as very low safety significance because all screening questions for the Initiating Events Cornerstone of reactor safety were answered "No." This finding also was determined to have a cross-cutting component in the area of human performance, work management aspect, because during the work planning process for this maintenance activity the licensee failed to identify the risk associated with not isolating the HP Feedwater Heater No. 1–4 Emergency Drain Valve, HD291A, prior to restoring its associated level controller to service. (H.5) (Section 1R13.1)

Licensee-Identified Violation

A violation of very low safety significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been

entered into the licensee's corrective action program (CAP). This violation and CAP tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The unit began the inspection period operating at full power. On November 13, 2014, a feedwater system transient briefly resulted in the unit exceeding full power by a small fraction for several minutes (see Section 1R13). 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)

Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. 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. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- Station and Instrument Air systems; and
- Borated Water Storage Tank and associated piping.

These reviews by the inspectors constituted a single winter seasonal readiness preparations inspection sample as defined in IP 71111.01–05.

b. Findings

No findings were identified

1R04 Equipment Alignment (71111.04)

Quarterly Partial System Alignment Verifications

a. Inspection Scope

The inspectors performed partial system physical alignment verifications of the following risk significant systems:

- The Motor Driven Feedwater Pump when Auxiliary Feedwater (AFW) Train 2 was out of service for planned maintenance during the week ending November 1, 2014; and
- Emergency Diesel Generator (EDG) No. 2 when the Station Blackout Diesel Generator (DG) was out of service for planned maintenance during the week ending November 1, 2014.

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, TS requirements, outstanding work orders (WOs), condition reports (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 by the inspectors constituted two partial system alignment verification inspection samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Protection Zone Inspections

a. Inspection Scope

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

- Emergency Core Cooling System (ECCS) Room No. 1 (Auxiliary Building Room 105; Fire Area AB);

- Component Cooling Water Heat Exchanger and Pump Room (Auxiliary Building Room 328; Fire Area T); and
- Service Water (SW) Pump Room (Intake Structure Room 52; Fire Area BF).

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. 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 three quarterly fire protection zone inspection tour samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

Annual Fire Protection Drill Observation

a. Inspection Scope

On November 21, 2014, the inspectors observed the licensee's fire brigade respond to a simulated fire in the Maintenance Tool Room. Based on their observations, 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 during the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were:

- The proper wearing of turnout gear and self-contained breathing apparatus;
- The proper use and layout of fire hoses;
- The employment of appropriate firefighting techniques;
- That sufficient firefighting equipment was brought to the scene;
- The effectiveness of fire brigade leader communications, as well as command and control;
- The search for victims and propagation of the fire into other plant areas;
- Smoke removal operations;
- The utilization of pre-planned strategies;
- The adherence to the pre-planned drill scenario; and
- The satisfactory completion of the drill objectives.

Documents reviewed are listed in the Attachment to this report.

These activities constituted a single annual fire protection drill inspection sample as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

Internal Flooding

a. Inspection Scope

During the period of October 14 to October 31, 2014, the inspectors conducted an internal flooding review for the SW intake structure, with specific emphasis on the safety-related portion of the building containing the SW and diesel-driven fire pumps. The inspectors reviewed flood analyses and design documents, including the USAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. 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 cooling tower makeup 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 SW intake structure to assess the adequacy of watertight boundaries/barriers and verify drains and sumps were clear of debris and were operable, and that the licensee had complied with applicable commitments. Portions of this inspection were performed in conjunction with the inspection activities for NRC Temporary Instruction (TI) 2515/190, "Inspection of the Licensee's Proposed Interim Actions as a Result of the Near-Term Task Force Recommendation 2.1 Flooding Reevaluation." Specific documents reviewed during this inspection are listed in the Attachment to this report.

The inspectors' review constituted a single internal flooding inspection sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

Resident Inspector Quarterly Review of Licensed Operator Simulator Training

a. Inspection Scope

On November 18, 2014, the inspectors observed a crew of licensed operators in the plant's simulator during the performance of several unannounced crew simulator drill scenarios. 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. In addition, the inspectors

verified that the licensee's personnel were observing NRC examination security protocols to ensure that the integrity of the scenarios was being protected from being compromised. The inspectors evaluated the following areas:

- Licensed operator performance;
- The clarity and formality of communications;
- The ability of the crew to take timely and conservative actions;
- The crew's prioritization, interpretation, and verification of annunciator alarms;
- The correct use and implementation of abnormal and emergency procedures by the crew;
- Control board manipulations;
- The oversight and direction provided by licensed Senior Reactor Operators (SROs); and
- The ability of the crew 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.

These observations and activities by the inspectors constituted a single quarterly licensed operator requalification program simulator training inspection sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

Resident Inspector Quarterly Observation of Operator Activities in the Control Room and in the Plant

a. Inspection Scope

During the course of the inspection period, the inspectors performed numerous observations of operator performance in the plant's control room and in the plant 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:

- The on-shift operating crew's preparations for and testing of No. 2 EDG during the week ending October 11, 2014;
- Normal daily on-shift operator field rounds during the week ending October 25, 2014;
- Routine adjustment of spent fuel pool water level by the on-shift operating crew during the week ending October 25, 2014;
- Normally scheduled reactor protection system control rod drive trip breaker testing and associated unit power maneuvers during the weeks ending November 1, 2014 and January 3, 2015; and
- Normal periodic AFW Train 2 functional testing during the week ending January 3, 2015.

The inspectors evaluated the following areas during the course of the control room and in-plant observations:

- Licensed operator performance;
- The clarity and formality of communications;
- The ability of the crew to take timely and conservative actions;
- The crew's 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 SROs and plant management personnel; and
- The ability of the crew 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. Documents reviewed are listed in the Attachment to this report.

These observation activities by the inspectors of operator performance in the station's control room and in the plant constituted a single quarterly inspection sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

1. Biennial Written and Annual Operating Test Results

a. Inspection Scope

The inspectors reviewed the quality of the biennial written examination administered by the licensee from October 24 through December 19, 2014, as required by 10 CFR 55.59(a). The biennial written exam quality was reviewed during the inspection week. On December 19, 2014, the inspectors received and reviewed the results of the licensee's annual operating test. 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 licensed operator requalification training (LORT) program to meet the requirements of 10 CFR 55.59." (02.02)

These review activities by the inspectors of the licensee's annual licensed operator requalification examination results constituted a single annual inspection sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

2. Biennial Review

a. Inspection Scope

The following inspection activities were conducted during the week of December 8, 2014, to assess:

- The effectiveness and adequacy of the facility licensee's implementation and maintenance of its systems approach to training based LORT program put into effect to satisfy the requirements of 10 CFR 55.59;
- Conformance with the requirements of 10 CFR 55.46 for use of a plant referenced simulator to conduct operator licensing examinations and for satisfying experience requirements; and
- Conformance with the operator license conditions specified in 10 CFR 55.53.

The documents reviewed are listed in the Attachment to this report.

(1) Licensee Regualification Examinations (10 CFR 55.59(c): Systems Approach To Training 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 are acceptable for meeting the requirements of 10 CFR 55.59(a).

The inspectors conducted a detailed review of the administered biennial requalification written examination versions to assess content, level of difficulty, and quality of the written examination materials. (02.03)

The inspectors conducted a detailed review of ten job performance measures and eight dynamic simulator scenarios to assess content, level of difficulty, and quality of the operating test materials. (02.04)

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 two simulator crews in parallel with the facility evaluators during three dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several Job Performance Measures. (02.05)

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that they 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. (02.07)

(2) 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 controls) and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the inspection period. (02.06)

(3) Conformance with Operator License Conditions (10 CFR 55.53)

The inspectors reviewed the facility licensee's program for maintaining active operator licenses and 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 12 licensed operators were reviewed for compliance with 10 CFR 55.53(l). (See the unresolved item (URI) documented below.) (02.08)

(4) Conformance with Simulator Requirements Specified in 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. (02.09)

(5) Problem Identification and Resolution (10 CFR 55.59(c): Systems Approach to Training Element 5 as Defined in 10 CFR 55.4)

The inspectors assessed the licensee's ability to identify, evaluate, and resolve problems associated with licensed operator performance (a measure of 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 licensed operator performance issues (e.g., recent examination and inspection reports including NRC cited and non-cited violations (NCVs); NRC end-of-cycle and mid-cycle reports; NRC plant issue matrix; licensee event reports; licensee CRs including documentation of plant events and review of industry operating experience). The inspectors also sampled the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. (2.10)

These review activities by the inspectors of the licensee's licensed operator requalification program constituted a single biennial inspection sample as defined in IP 71111.11-05.

b. Findings

Additional Review of Medical Records Needed

Introduction: The inspectors reviewed a sample of the licensed operator medical records during the inspection. The inspectors noted that the medical records were difficult to review due to of the lack of a succinct filing within the records themselves. The inspectors identified an Unresolved Item (URI) concerning the auditable condition of the medical records and completeness of information that may affect the conditions required as part of a licensed operator's license to maintain medical qualification.

Discussion: As part of the IP 71111.11B inspection during the week of December 8 through 12, 2014, the inspectors reviewed a sample of the licensed operator medical records for compliance with 10 CFR Part 55. The inspectors reviewed seven medical records for accuracy and compliance with the license conditions. During the review, the inspectors noted that one licensed operator's medical file contained a change in information potentially pertaining to a condition placed upon the license. The operator delayed in notifying either the facility licensee or the NRC, and had continued to stand watch. The inspectors also noted that another operator's medical record also contained a change in information potentially pertaining to a condition placed upon the license, but the operator's license had previously been placed on administrative hold and the operator had not stood watch during the period of time in question. The inspectors expanded the inspection sample by five additional records. None of the additional records were identified as containing a potential non-compliance. A total of 12 of the 58 operator license medical records were reviewed. The involved operators' licenses are currently on administrative hold and the operators are not allowed to stand watch in licensed positions. The inspectors reviewed 10 CFR Part 55 and noted that:

- 10 CFR 55.3 requires that a person must be authorized by a license issued by the Commission to perform the function of an operator or a senior operator as defined in this part.
- 10 CFR 55.53(l) requires that the licensee shall comply with any other conditions that the Commission may impose to protect health or to minimize danger to life or property.

The inspectors determined that 2 of the 12 records reviewed (17 percent) had apparent discrepancies which involved potential violations of 10 CFR Part 55. The records reviewed were found to have issues involving the auditable condition of the information contained in the records, and further inspection and review of the medical records is required to ascertain the level of discrepancy and if a potential non-compliance condition exists. **(URI 05000346/2014005-01; Additional Review of Medical Records Needed)**

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- The plant's SW system, with particular emphasis on the installed SW pumps and their motors; and
- The performance of plant doors, hatches, and associated equipment, with particular emphasis on recent issues with safety-related double leaf plant doors.

The inspectors reviewed events such as where ineffective equipment maintenance could result in or had resulted in valid or invalid automatic actuations or system transients 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 systems, structures, and components/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

The inspectors' reviews constituted two quarterly maintenance effectiveness inspection samples 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:

- Scheduled work activities to replace and rebuild SW Pump No. 2 during the weeks ending October 18, 2014 through November 15, 2014; and
- Licensee actions in planning, performing, and restoring from minor maintenance on HD291G, a manual isolation valve for the level controller for HD291A, the emergency drain valve for HP Feedwater Heater No. 1–4, on November 13, 2014.

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

The inspectors' review of these maintenance risk assessments and emergent work control activities constituted two inspection samples as defined in IP 71111.13–05.

b. Findings

Inadequate Procedural Guidance During Restoration From Valve Maintenance Results in Feedwater Heater System and Plant Power Transient

Introduction

A self-revealed finding of very low safety significance (Green) and associated NCV of TS 5.4.1(a) were identified when the licensee failed to provide proper procedural guidance for the restoration from valve maintenance on HD291G, a manual isolation valve for the level controller for HD291A, the emergency drain valve for HP Feedwater Heater No 1–4, on November 13, 2014. Specifically, the licensee's restoration instructions did not isolate HD291A prior to restoring its associated level controller. As a result, when a perturbation in the level controller during restoration caused HD291A to rapidly reposition to the fully open position, the resulting HP Feedwater Train 1 transient caused HP Feedwater Heaters 1–4, 1–5, and 1–6 to trip. The change in plant efficiency that resulted momentarily drove plant power slightly above 100 percent.

Description

On the afternoon of November 13, 2014, the on-shift operating crew was getting ready to restore from maintenance on HD291G, a manual isolation valve for the level controller for HD291A, which is the emergency drain valve for HP Feedwater Heater No. 1–4. Neither the WO instructions for the maintenance activity nor the normal operating procedure for the HP feedwater system, DB–OP–06229, contained any specific guidance or precautions related to isolating HD291A before restoring its level controller. As a result, the crew went forward and briefed the activity using the clearance and tagging restoration as the vehicle for their planned valve manipulations. Isolation of HD291A had not been required to facilitate the maintenance on HD291G, and the crew did not anticipate that there would be any reason during the restoration that the emergency drain valve would possibly open. Consequently, HD291A was in its normally closed position, but un-isolated, as the restoration activity commenced at about 4:18 p.m.

As the level controller for HD291A was being restored, a perturbation, most probably due to a small amount of liquid in the system flashing to steam, caused an erroneous

high level condition to be indicated. Valve HD291A rapidly opened as designed and HP Feedwater Heater No. 1–4 tripped on the ensuing level transient. This, in turn, caused the downstream HP Feedwater Heaters 1–5 and 1–6 to also experience level transients and trip as well. The resultant loss of plant efficiency from the trip of these feedwater heaters drove plant power up to approximately 100.28 percent, as measured by the plant computer's heat balance calculation.

The on-shift crew in the control room immediately identified the transient from their indications, and verified that the plant's integrated control system was responding appropriately to lower plant power. Operators increased the integrated control system's programmed rate of change in response to plant power momentarily being above 100 percent, and stabilized power at approximately 99.9 percent. Following an investigation into the event, the licensee coordinated restoration of HP Feedwater Heaters 1–4, 1–5, and 1–6 using the normal alarm response procedures for the trip of the heaters on high level, and plant power was restored to 100 percent at approximately 11:11 p.m.

Analysis

The inspectors reviewed this finding using the guidance contained in Appendix B, "Issue Screening," of IMC 0612, "Power Reactor Inspection Reports." The inspectors determined that the licensee's failure to provide adequate procedural guidance for the restoration of the level controller for HD291A following repairs to HD291G represented a performance deficiency that was reasonably within the licensee's ability to foresee and correct and should have been prevented. This finding was associated with the Initiating Events Cornerstone of reactor safety and was of more than minor significance because it directly impacted the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.

The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." Using Exhibit 1, which contains the screening questions for the Initiating Events Cornerstone of reactor safety, the inspectors determined that the finding screened as very low safety significance (Green) because it did not adversely impact any of the following parameters:

- Loss-of-Coolant Accident Initiators;
- Transient Initiators;
- Support System Loss Initiators;
- Steam Generator Tube Rupture Initiators; or
- External Event Initiators.

This finding also was determined to have a cross-cutting component in the area of human performance, work management aspect, because during the work planning process for this maintenance activity the licensee failed to identify the risk associated with not isolating the HP Feedwater Heater No. 1–4 Emergency Drain Valve, HD291A, prior to restoring its associated level controller to service. (H.5)

Enforcement

Technical Specification 5.4.1(a) requires the licensee to establish, implement, and maintain applicable written procedures for the systems and activities recommended in

RG 1.33, Revision 2, Appendix A. Section 3(k) of RG 1.33, Revision 2, Appendix A, requires proper and adequate procedures for the operation of the plant's feedwater system, which would include any and all operations involving the removal and restoration of control systems for components within the feedwater system. Contrary to this requirement, the licensee failed to provide adequate procedural guidance for the restoration of the HP Feedwater Heater No. 1–4 Emergency Drain Valve level controller. Specifically, the level controller was restored to service following maintenance on November 13, 2014, without first isolating the HP Feedwater Heater No. 1–4 Emergency Drain Valve, HD291A, such that a perturbation in the system during restoration resulted in the sequential tripping of HP Feedwater Heaters 1–4, 1–5, and 1–6, and the plant momentarily exceeding 100 percent power.

Because this finding was of very low safety significance, had been entered into the licensee's CAP, and the licensee had taken or planned corrective actions under CR 2014–17041, the associated violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. Corrective actions taken by the licensee included the performance of a limited apparent cause evaluation for the event and the development and inclusion of specific procedural guidance for the removal and restoration of feedwater heater emergency drain valves into the applicable system operating procedure. (NCV 05000346/2014005–02)

1R15 Operability Determinations and Functional Assessments (71111.15)

1. Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Operability of the plant's ultimate heat sink following the identification of excessive silt buildup during routine surveillance monitoring of the safety-related intake canal depth, as documented in CR 2014–15167, during the period of October 4, 2014, through December 31, 2014;
- Operability and functionality of established nuclear fuel thermal performance limits following identification by the licensee's fuel vendor, AREVA, of certain fuel performance computer code issues, as documented in CR 2014–16024, during the period of October 25, 2014, through December 31, 2014; and
- Operability and functionality of various safety-related 4160 volts alternating current motors following the identification of a condition where the licensee may not have all required electrical load calculations to support certain design basis event electrical loadings, as documented in CR 2014–17296, during the period of November 22, 2014, through December 31, 2014.

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 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 verified, where applicable, that the bounding limitations of the evaluations were valid. 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.

The review of these issues by the inspectors constituted three inspection samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

1. Quarterly Resident Inspector Observation and Review of Post-Maintenance Testing Activities

a. Inspection Scope

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

- Operational and functional testing of No. 1 EDG following a planned and scheduled maintenance work window during the week ending October 25, 2014.

These activities were selected based upon the system, structure or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the 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 the PMTs 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.

The inspectors' reviews of these activities constituted a single PMT inspection sample 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 results for the following testing 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:

- Normal periodic safety features actuation system (SFAS) containment pressure transmitter testing and calibration for SFAS Channel 2 during the week ending November 8, 2014 (Routine); and
- Routine quarterly containment at-power inspections during the week ending November 22, 2014 (Routine).

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;
- That measuring and test equipment calibration was current;
- That test equipment was used within the required range and accuracy;
- That applicable prerequisites described in the test procedures were satisfied;
- That 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;
- That test data and results were accurate, complete, within limits, and valid;
- That test equipment was removed after testing;
- Where applicable, that 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, that reference setting data were accurately incorporated in the test procedure;
- Where applicable, that actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- That prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- That equipment was returned to a position or status required to support the performance of its safety functions; and

- That all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

These activities conducted by the inspectors constituted two routine surveillance testing inspection samples as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

1EP2 Alert and Notification System Evaluation (71114.02)

Alert and Notification System Evaluation

a. Inspection Scope

The inspectors held discussions with Emergency Preparedness (EP) staff regarding the operation, maintenance, and periodic testing of the primary and backup Alert and Notification System (ANS) in the plume pathway emergency planning zone. The inspectors reviewed monthly trend reports and siren test failure records from March 2012 through September 2014. Information gathered during document reviews and interviews were used to determine whether the ANS equipment was maintained and tested in accordance with emergency plan commitments and procedures. Documents reviewed are listed in the Attachment to this report.

These reviews by the inspectors constituted a single ANS evaluation inspection sample as defined in IP 71114.02–06.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

Emergency Response Organization Staffing and Augmentation System

a. Inspection Scope

The inspectors reviewed and discussed with plant EP staff the emergency plan commitments and procedures for emergency response organization (ERO) on-shift and augmentation staffing levels. A sample of ERO training records for personnel assigned to key and support positions were reviewed to determine the status of their training as it related to their assigned ERO positions. The inspectors reviewed the ERO augmentation system and activation process, the primary and alternate methods of initiating ERO activation, unannounced off-hour augmentation tests from March 2012 through September 2014, and the provisions for maintaining the plant's ERO roster.

The inspectors reviewed a sample of corrective actions related to the facility's ERO staffing and augmentation system program and activities from March 2012 through

September 2014 to determine whether corrective actions were completed in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

These reviews by the inspectors constituted a single ERO staffing and augmentation system inspection sample as defined in IP 71114.03–06.

b. Findings

No findings were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

Annual Review of Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspectors performed a review of the latest revisions to the licensee's emergency plan and various emergency plan implementing procedures.

The licensee transmitted revisions of their emergency plan and various emergency plan implementing procedures to the NRC pursuant to the requirements of 10 CFR Part 50, Appendix E, Section V, "Implementing Procedures." The NRC review was not documented in a safety evaluation report and did not constitute approval of these licensee-generated changes; therefore, these revisions are subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment to this report.

These reviews by the inspectors constituted a single emergency action level and emergency plan changes inspection sample as defined in IP 71114.04–05.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

Maintenance of Emergency Preparedness

a. Inspection Scope

The inspectors reviewed a sample of nuclear oversight staff's audits of the EP program to determine whether these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed critique reports and samples of CAP records associated with the 2013 biennial EP exercise, as well as various EP drills conducted in order to determine that the licensee fulfilled its drill commitments and to evaluate the licensee's efforts to identify, track, and resolve concerns identified during these activities. The inspectors reviewed a sample of EP items and corrective actions related to the facility's EP program and activities from March 2012 through September 2014 to determine whether corrective actions were completed in accordance with the site's CAP. Documents reviewed are listed in the Attachment to this report.

These reviews of correction of EP weaknesses and deficiencies by the inspectors constituted a single inspection sample as defined in IP 71114.05–06.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

1. Emergency Preparedness Drill Observations

a. Inspection Scope

The inspectors evaluated the conduct of planned licensee emergency drills on the following dates:

- October 14, 2014; and
- November 12, 2014.

The inspectors observed emergency response operations in the Emergency Operations Facility and the backup/alternate Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures, and to identify any weaknesses or deficiencies in classification, notification, or protective action recommendation development activities. The inspectors also attended the licensee drill critique to compare any inspector-observed weaknesses 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 their inspection activities, the inspectors reviewed the drill packages for each scenario and other documents listed in the Attachment to this report.

The inspectors' reviews of these emergency preparedness drill scenarios and other related activities constituted two inspection samples as defined in IP 71114.06–06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

These activities supplement those documented earlier in NRC Inspection Report 05000346/2014002; altogether these reviews constitute a single inspection sample as defined in IP 71124.01–05.

Instructions to Workers (02.03)

a. Inspection Scope

The inspectors reviewed selected occurrences where a worker's electronic personal dosimeter noticeably malfunctioned or alarmed. The inspectors evaluated whether workers responded appropriately to the off-normal condition. The inspectors assessed whether the issue was included in the CAP and dose evaluations were conducted as appropriate.

b. Findings

No findings were identified.

Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors selected several sealed sources from the licensee's inventory records and assessed whether the sources were accounted for and verified to be intact.

The inspectors evaluated whether any transactions, since the last inspection, involving nationally tracked sources were reported in accordance with 10 CFR 20.2207.

b. Findings

No findings were identified.

Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (i.e., non-fuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high radiation areas and very-high radiation areas to verify conformance with the occupational performance indicator.

b. Findings

No findings were identified.

Risk-Significant High Radiation Area and Very-High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the radiation protection (RP) manager the controls and procedures for high-risk, high radiation areas and very-high radiation areas. The inspectors discussed methods employed by the licensee to provide stricter control of very-high radiation area access as specified in 10 CFR 20.1602, "Control of Access to Very-High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very-High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduce the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that have the potential to become very-high radiation areas during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations require communication beforehand with the health physics group, so as to allow corresponding timely actions to properly post, control, and monitor the radiation hazards including re access authorization.

b. Findings

No findings were identified.

Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RP manager any problems with the corrective actions planned or taken.

b. Findings

No findings were identified.

Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be RP technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed

whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

Problem Identification and Resolution (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05)

These reviews constituted a partial inspection sample as defined in IP 71124.05-05.

Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the plant's USAR to identify radiation instruments associated with monitoring area radiological conditions including airborne radioactivity, process streams, effluents, materials/articles, and workers. Additionally, the inspectors reviewed the instrumentation and the associated TS requirements for post-accident monitoring instrumentation, including instruments used for remote emergency assessment.

The inspectors reviewed a listing of in-service survey instrumentation including air samplers and small article monitors, along with instruments used to detect and analyze workers' external contamination. Additionally, the inspectors reviewed personnel contamination monitors and portal monitors, including whole-body counters, to detect workers' internal contamination. The inspectors reviewed this list to assess whether an adequate number and type of instruments were available to support operations.

The inspectors reviewed licensee and third-party evaluation reports of the radiation monitoring program since the last inspection. These reports were reviewed for insights into the licensee's program and to aid in selecting areas for review ("smart sampling").

The inspectors reviewed procedures that govern instrument source checks and calibrations, focusing on instruments used for monitoring transient high radiological conditions, including instruments used for underwater surveys. The inspectors reviewed

the calibration and source check procedures for adequacy and as an aid to smart sampling.

The inspectors reviewed the area radiation monitor alarm setpoint values and setpoint bases as provided in the TS and the USAR.

The inspectors reviewed effluent monitor alarm setpoint bases and the calculational methods provided in the offsite dose calculation manual.

b. Findings

No findings were identified.

Walkdowns and Observations (02.02)

a. Inspection Scope

The inspectors walked down effluent radiation monitoring systems, including at least one liquid and one airborne system. Focus was placed on flow measurement devices and all accessible point-of-discharge liquid and gaseous effluent monitors of the selected systems. The inspectors assessed whether the effluent/process monitor configurations aligned with offsite dose calculation manual descriptions and observed monitors for degradation and out-of-service tags.

The inspectors selected portable survey instruments that were in use or available for issuance and assessed calibration and source check stickers for currency as well as instrument material condition and operability.

The inspectors observed licensee staff performance as the staff demonstrated source checks for various types of portable survey instruments. The inspectors assessed whether high-range instruments were source checked on all appropriate scales.

The inspectors walked down area radiation monitors and continuous air monitors to determine whether they were appropriately positioned relative to the radiation sources or areas they were intended to monitor. Selectively, the inspectors compared monitor response (via local or remote control room indications) with actual area conditions for consistency.

The inspectors selected personnel contamination monitors, portal monitors, and small article monitors and evaluated whether the periodic source checks were performed in accordance with the manufacturer's recommendations and licensee procedures.

b. Findings

No findings were identified.

Calibration and Testing Program (02.03)

Process and Effluent Monitors

a. Inspection Scope

The inspectors selected effluent monitor instruments (such as gaseous and liquid) and evaluated whether channel calibration and functional tests were performed consistent with radiological effluent TS and/or the offsite dose calculation manual. The inspectors assessed whether; (a) the licensee calibrated its monitors with National Institute of Standards and Technology traceable sources; (b) the primary calibrations adequately represented the plant nuclide mix; (c) when secondary calibration sources were used, the sources were verified by the primary calibration; and (d) the licensee's channel calibrations encompassed the instrument's alarm setpoints.

The inspectors assessed whether the effluent monitor alarm setpoints were established as provided in the offsite dose calculation manual and station procedures.

For changes to effluent monitor setpoints, the inspectors evaluated the basis for changes to ensure that an adequate justification existed.

b. Findings

No findings were identified.

Laboratory Instrumentation

a. Inspection Scope

The inspectors assessed laboratory analytical instruments used for radiological analyses to determine whether daily performance checks and calibration data indicated that the frequency of the calibrations was adequate and there were no indications of degraded instrument performance.

The inspectors assessed whether appropriate corrective actions were implemented in response to indications of degraded instrument performance.

b. Findings

No findings were identified.

Whole Body Counter

a. Inspection Scope

The inspectors reviewed the methods and sources used to perform whole body count functional checks before daily use of the instrument and assessed whether check sources were appropriate and aligned with the plant's isotopic mix.

The inspectors reviewed whole body count calibration records since the last inspection and evaluated whether calibration sources were representative of the plant source term and that appropriate calibration phantoms were used. The inspectors looked for anomalous results or other indications of instrument performance problems.

b. Findings

No findings were identified.

Portal Monitors, Personnel Contamination Monitors, and Small Article Monitors

a. Inspection Scope

For each type of these instruments used on site, the inspectors assessed whether the alarm setpoint values were reasonable under the circumstances to ensure that licensed material is not released from the site.

The inspectors reviewed the calibration documentation for each instrument selected and discussed the calibration methods with the licensee to determine consistency with the manufacturer's recommendations.

b. Findings

No findings were identified.

Portable Survey Instruments, Area Radiation Monitors, Electronic Dosimetry, and Air Samplers/Continuous Air Monitors

a. Inspection Scope

The inspectors reviewed calibration documentation for at least one of each type of instrument. For portable survey instruments and area radiation monitors, the inspectors reviewed detector measurement geometry and calibration methods and had the licensee demonstrate use of its instrument calibrator as applicable. The inspectors conducted comparison of instrument readings versus an NRC survey instrument if problems were suspected.

As available, the inspectors selected portable survey instruments that did not meet acceptance criteria during calibration or source checks to assess whether the licensee had taken appropriate corrective action for instruments found significantly out of calibration (e.g., greater than 50 percent). The inspectors evaluated whether the licensee had evaluated the possible consequences of instrument use since the last successful calibration or source check.

b. Findings

No findings were identified.

Instrument Calibrator

a. Inspection Scope

As applicable, the inspectors reviewed the current output values for the licensee's portable survey and area radiation monitor instrument calibrator unit. The inspectors assessed whether the licensee periodically measures calibrator output over the range of the instruments used through measurements by ion chamber/electrometer.

The inspectors assessed whether the measuring devices had been calibrated by a facility using National Institute of Standards and Technology traceable sources and whether corrective factors for these measuring devices were properly applied by the licensee in its output verification.

b. Findings

No findings were identified.

Calibration and Check Sources

a. Inspection Scope

The inspectors reviewed the licensee's 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," source term to assess whether calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

Problem Identification and Resolution (02.04)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring instrumentation.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

40A1 Performance Indicator Verification (71151)

1. Reactor Coolant System Leak Rate

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system leak rate performance indicator (PI) for the period from the second quarter 2013 through the third quarter 2014. To determine the accuracy of the PI data reported during this period, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated

August 31, 2013, were used. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, CRs, event reports and NRC inspection reports for the period from October 2013 through September 2014 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

The inspectors' reviews in this area constituted a single reactor coolant system leakage rate PI inspection sample as defined in IP 71151-05.

b. Findings

No findings were identified.

2. Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise Performance PI for the period from the second quarter 2013 through the second quarter 2014. Performance Indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's records and processes including procedural guidance on assessing opportunities for the PI; assessments of PI opportunities during pre-designated control room simulator training sessions, performance during the 2013 biennial exercise, and performance during other drills associated with the PI 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.

The inspectors' reviews in this area constituted a single drill/exercise performance PI inspection sample as defined in IP 71151-05.

b. Findings

No findings were identified.

3. Emergency Response Organization Readiness

a. Inspection Scope

The inspectors sampled licensee submittals for the ERO Readiness PI for the period from the second quarter 2013 through the second quarter 2014. The inspectors used PI definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's records and processes including procedural guidance on assessing opportunities for the PI; performance during the 2013 biennial exercise and other drills; and revisions of the roster of personnel assigned to key ERO positions to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report

database to determine if any problems were 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.

The inspectors' reviews in this area constituted a single ERO Readiness PI inspection sample as defined in IP 71151-05.

b. Findings

No findings were identified.

4. Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the ANS PI for the period from the second quarter 2013 through the second quarter 2014. The inspectors used PI definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's records and processes including procedural guidance on assessing opportunities for the PI and results of periodic ANS operability tests to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine whether any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

The inspectors' reviews in this area constituted a single ANS PI inspection 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 part of the various baseline IPs 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 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.

3. Semi-Annual Trend Review: Plant Door Issues

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspectors CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six-month period of July 1 through December 31, 2014, although examples expanded beyond those dates where the scope of the trend warranted.

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

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

Observations

During the course of the review period for this inspection sample, the inspectors noted that the licensee has been challenged by a number of issues with plant doors. In many cases, these issues have been associated with high-profile doors that have multiple functions that are important to safety. Some of the issues represent chronic problems that have challenged the licensee for multiple weeks or even months. Specific examples associated with this trend included, but were not limited to:

- Door No. 509; Main Entrance/Exit to the Control Room: This door was replaced with a built-to-order engineered door during the spring 2014 refuel outage. Since that time, issues with the door have been the subject of over 25 CRs entered into the licensee's CAP. Over ten of these CRs have been associated with the door either failing to adequately close and lock, or being found in an unsecure (i.e., ajar, unlocked, etc.) condition. Still others describe a condition whereby the door frame, block wall in which the frame is set, and/or the mortar joints around the door have been damaged either by issues during the new door's installation, the heavy force that is needed to close the door from time to time, or a combination thereof. At the present time, this issue is largely cosmetic, but the chronic nature of the problems associated with this door means that it will continue to warrant increased inspector scrutiny until the issues are fully resolved;
- Door No. 427; Main Entrance/Exit to Low Voltage Switchgear Room No. 2: This door has had chronic issues. During the course of the review period the non-active leaf of the door was discovered to be severely bowed, to the extent that the door was placed in an emergency-use-only status. Temporary stiffeners were required to be installed under the station's temporary modification process to force the door back into a configuration where it would close and latch reliably. Only at that point was the door's emergency-use-only status removed;
- Door No. 428; Main Entrance/Exit to Low Voltage Switchgear Room No. 1: This door has also had chronic issues; in order to ensure proper operation of the latching mechanism, the user must push/pull against the door to ensure that it is fully against the jamb prior to attempting to unlatch the door. During the timeframe that Door No. 427 was designated as emergency-use-only status noted above, Door No. 428 experienced a latching mechanism failure such that the door could only be opened via use of a key. With both low voltage switchgear room main entrance/exit doors in a degraded condition, normal entry/exit into these vital plant equipment areas was severely restricted;
- Door No. 308; Entrance/Exit to Mechanical Penetration Room No. 4: This door was replaced during the spring 2014 refuel outage, and had suffered repeated subsequent failures of its latching mechanism in the ensuing months. The wholesale failure of the latching mechanism on August 18, 2014, resulted in the simultaneous inoperability of both trains of the shield building emergency ventilation system, which the licensee was required to report to the NRC under 10 CFR 50.72(b)(3)(v)(C and D). The condition has been subsequently repaired through the installation of a newer type of latching mechanism, and the issue has not recurred. See Section 4OA3.2 for additional details;
- Door No. 322; Main Entrance/Exit to the EDG Corridor: Similar to Door No. 428 above, this door has also had chronic issues involving the need for the user to push/pull against the door to ensure that it is fully against the jamb prior to

attempting to unlatch the door in order to ensure proper operation of the latching mechanism;

- Door No. 105; Entrance/Exit to the ECCS Pump Room Access Corridor: This door has had several chronic issues, ranging from difficulties with its latching mechanism to the need for wholesale replacement. Its nonstandard size and configuration has further complicated some corrective actions; and
- Door No. 406; Entrance/Exit to the Spent Fuel Pool Corridor: This door has had chronic issues with hanging open due to the typical differential pressure seen across the door. The licensee has traditionally treated these issues as worker practice failures associated with personnel not properly verifying proper door closure following usage.

While individually none of these examples may suggest an ongoing problem of any significance; when viewed in the aggregate, they may possibly indicate a programmatic weakness with station doors at the plant component level.

b. Findings

No findings were identified.

4. Follow-Up Sample for In-Depth Review: Assessment of Licensee Corrective Actions for Adverse Trend in Refueling Outage Industrial Safety

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to assess the adequacy of corrective actions taken in response to an adverse trend in industrial safety performance that was identified during the licensee's most recent refuel outage in early 2014.

The inspectors' review was predominantly focused on:

- The specific materials (i.e., human performance stand down packages, special plant communications/event news flashes, etc.) developed by the licensee to address the adverse trend;
- The corrective actions, especially those actions considered to be long-term corrective actions stemming from the licensee's common cause analysis, put in place by the licensee to address the trend; and
- The actual industrial safety performance of the plant subsequent to the unit's return to service following the outage.

This review constituted a single follow-up inspection sample for in-depth review as defined in IP 71152-05.

Observations

During the most recent plant refuel outage in early 2014, which also included replacement of both steam generators, the site experienced seven OSHA [Occupational Safety and Health Administration] recordable injuries and 41 first aid injuries. These industrial safety performance results were considered to constitute weak performance, and the licensee performed a common cause analysis within their CAP (CR 2014-09810) to address the issue.

Since the intent of the licensee's analysis was to identify adverse safety behaviors on the part of plant personnel, the investigation included near miss, report only, and first aid injuries since the behaviors involved could have resulted in more severe injuries. The licensee's assessment of the incidents determined the majority were caused by improper body positioning in cramped working areas (e.g., the steam generator enclosed D-rings in containment, etc.), or a lack of situational awareness. The latter was especially significant given the propensity for slip, trip, and fall incidents in the inclement weather experienced during the wintertime outage.

The licensee's investigation identified several causal factors for the weak performance in industrial safety, including:

- The licensee's safety observation and trending during the outage was not effective;
- Personnel associated with the licensee's principle outage contractor for the steam generator replacement project exhibited a lack of safety focus that was primarily evident by contractor supervision not correcting poor safety behaviors in the field;
- The approved oversight plans for the steam generator replacement project, developed and approved by the licensee prior to the start of the outage, were not effectively implemented;
- Prior initiatives taken by the licensee to address poor industrial safety performance and implement behavior-based safety programs were not sustained; and
- There were multiple different safety organizations operating during the outage, and their roles and responsibilities were not clearly defined.

In response to these causal factors, the licensee developed several corrective actions. The institution of a "safety advocate" program and the licensee's "human performance cumulative effects initiative" have been put into place and are functional at this time. More long-term actions that are still to be enacted include the development and implementation of "hazard recognition" training and the development and implementation of a comprehensive behavior-based safety program. All of the licensee's outstanding CAP actions are scheduled to be completed and in place by the end of 2015, and in time for the licensee's next refueling outage (RFO) in early 2016.

Following the completion of the steam generator replacement outage in early 2014, the inspectors noted that the site has experienced no additional serious industrial safety events. However, the significantly differing work tempo produced by the unit on line and operating at power versus in a maintenance/refuel outage makes a direct comparison of the industrial safety incident rate somewhat problematic. A review of industrial safety performance from the licensee's upcoming RFO in early 2016 will provide an indication as to whether or not industrial safety performance remains a challenge for the licensee.

b. Findings

No findings were identified.

Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds (OWAs) on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment to this report were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an initiating event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of mitigating systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified OWAs.

This review constituted a single OWA annual inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 Event Notification 50639: Non-Conservatism In Methodology Used for Emergency Core Cooling System Performance Requirements

On November 25, 2014, the licensee received letters from their nuclear fuel supplier, AREVA, regarding a required notification under the provisions of 10 CFR 50.46, "Acceptance Criteria for ECCSs for Light-Water Nuclear Power Reactors." These documents indicated that certain non-conservatism were discovered in the methodology application and inputs used by AREVA for nuclear fuel core configurations with the Mark-B-HTP fuel supplied by AREVA and currently in use by the licensee. These non-conservatism increased the fuel peak cladding temperature (PCT) to a value in excess of the value prescribed in 10 CFR 50.46(b)(1) under certain loss of coolant accident (LOCA) conditions. At approximately 4:32 p.m., the licensee formally reported this issue to the NRC as an unanalyzed condition meeting the requirements for an eight-hour non-emergency report to the NRC under 10 CFR 50.72(b)(3)(ii)(B).

In earlier dialogue with the licensee's staff, AREVA had provided compensatory measures in terms of plant axial imbalance limits and F_Q linear heat rate limits associated with reductions in LOCA linear heat rates so that the unit would be operated within the limits set forth in 10 CFR 50.46. The licensee implemented these

compensatory measures on October 23, 2014. A preliminary analysis of past operating conditions by the licensee's staff indicated that the unit had not exceeded the value prescribed in 10 CFR 50.46(b)(1) for PCT prior to the identification of this issue.

The inspectors reviewed the licensee's response to this event, including but not limited to:

- Status and performance of plant equipment, particularly nuclear fuel and fuel performance indicators;
- Non-emergency notifications made to state and local government agencies as required by 10 CFR 50.72;
- Implementation of compensatory measures with respect to plant axial imbalance limits and F_Q linear heat rate limits;
- The licensee staff's review of past unit performance for potential PCT limiting conditions; and
- Development and implementation of corrective actions.

Per the requirements of 10 CFR 50.46(a)(3)(ii), the licensee submitted a written report within 30 days to the NRC regarding this issue (ADAMS Accession No. ML14353A228). The licensee had entered this issue into their CAP as CRs 2014–15953, 2014–16024, and 2014–17576. Further corrective actions planned by the licensee include:

- A LOCA reanalysis, which is scheduled to be completed by July 31, 2015, and which is presently underway;
- A LOCA evaluation model reanalysis, recommended by AREVA, which is planned for completion in April 2016, and which will be submitted to the NRC in accordance with the provisions of 10 CFR 50.46; and
- A revision to the unit's cycle-specific core operating limits report to reflect the new plant axial imbalance limits and F_Q linear heat rate limits.

Documents reviewed are listed in the Attachment to this report.

This event follow-up review constituted a single inspection sample as defined in IP 71153–05.

.2 (Closed) Licensee Event Report 05000346/2014–003–00: Door Latch Failure Results in Loss of Emergency Ventilation System Function

On August 18, 2014, with the plant in Mode 1 and operating at full power, a mechanical issue with latching mechanism for the door to No. 4 Mechanical Penetration Room in the auxiliary building occurred at approximately 7:25 p.m. when plant personnel used the door to exit the room. The inability of the door to properly latch in the closed position effectively resulted in a large breach in the shield building emergency ventilation system (EVS) physical pressure boundary, and rendered both trains of the shield building EVS inoperable. Minor maintenance was performed by licensee on-duty personnel on the door latch mechanism, and the door was restored to normal operation at approximately 7:35 p.m.

Initially, licensee personnel had determined that the event did not require any non-emergency notifications in accordance with 10 CFR 50.72 requirements. However, on the morning following the issue, licensee personnel reevaluated their decision in this

matter. On August 19, 2014, the licensee concluded that the loss of latching capability for the No. 4 Mechanical Penetration Room door in the auxiliary building, albeit for only a brief ten-minute period, constituted an event or condition that could have prevented the fulfillment of a safety function; and an eight-hour non-emergency report to the NRC per 10 CFR 50.72(b)(3)(v)(C and D) was required. The licensee completed this report, albeit several hours after the eight-hour time requirement had passed, on August 19, 2014, at 2:29 p.m.

On August 20, 2014, at approximately 4:13 a.m., the issue with the latching mechanism for the door to No. 4 Mechanical Penetration Room in the auxiliary building recurred, and both trains of shield building EVS were again rendered inoperable as a result. As with the earlier event on August 18, 2014, the licensee was able to utilize an on-duty technician to perform minor maintenance to the door latching mechanism and restore its functionality in short order. At approximately 4:19 a.m., on August 20, 2014, the subject minor repairs were completed and shield building EVS operability was restored. The licensee completed the requisite eight-hour non-emergency report to the NRC per 10 CFR 50.72(b)(3)(v)(C and D) in a timely manner in this instance by amending their earlier report to also include this similar event. That notification to the NRC was completed at approximately 10:27 a.m., on August 20, 2014. As an immediate interim corrective action, following this event the licensee restricted use of the door to No. 4 Mechanical Penetration Room to essential activities only. Entries were coordinated to minimize the usage of the door and an appropriately qualified technician was stationed at the door to perform any necessary repairs to the latching mechanism, if required, when any entries were being made.

The licensee conducted a formal root cause analysis for the event and determined that the mechanical issue with the No. 4 Mechanical Penetration Room door latching mechanism resulted from a design vulnerability that was inherent in the vendor-supplied latching mechanism. In coordination with the latching mechanism vendor, the licensee obtained a slightly different style latching mechanism and installed that mechanism into the No. 4 Mechanical Penetration Room door. The door was then subjected to a trial period of several days of normal usage without further latching mechanism failures before the licensee considered the issue to be resolved. The licensee had entered this issue into their CAP as CRs 2014-13211, 2014-13246, 2014-13278 and 2014-13432.

The inspectors had previously performed a review of this event and documented the results of that review in NRC Inspection Report 05000346/2014004, Section 4OA3.2 (ADAMS Accession No. ML14296A465). In addition to those actions previously performed, in response to receipt of this licensee event report (LER) the inspectors completed additional reviews that included, but were not limited to:

- The potential for any generic issues, including those potentially requiring reporting under 10 CFR Part 21;
- The licensee's completed root cause evaluation report and additional corrective actions associated with the event; and
- The accuracy of the information provided by the licensee in the LER.

An extent of condition review to determine what other plant door latching mechanisms may need to be replaced with the newer style mechanism now in use in the door to No. 4 Mechanical Penetration Room has been completed by the licensee. Additional corrective actions planned include completion of the replacement of these door latching

mechanisms, as well as the wholesale replacement of several plant doors that the licensee has determined to be problematic.

Documents reviewed as part of this inspection are listed in the Attachment. This LER is closed.

This event follow-up review by the inspectors constituted a single inspection sample as defined in IP 71153-05.

4OA5 Other Activities

1. (Closed) Temporary Instruction 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 verified that licensee's interim actions will perform their intended function for flooding mitigation.

Items independently verified by the inspectors included, but were not limited to:

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed;
- Reasonable simulation, if applicable to the site, was verified; and
- The 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. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings were identified.

4OA6 Management Meetings

1. Exit Meeting Summary

On January 15, 2015, the inspectors presented the inspection results to the Director of Site Operations, Mr. T. Summers, 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. Any proprietary material received during the inspection was returned to the licensee.

2. Interim Exit Meetings

Interim exits were conducted for:

- The results of a periodic EP program inspection were discussed with the EP Manager, Mr. J. Vetter, on October 3, 2014;
- The results of the inspectors' annual review of EP emergency action level and emergency plan changes with the licensee's EP Manager, Mr. J. Vetter, via telephone on December 1, 2014;
- The inspection results for the areas of radiological hazard assessment and exposure controls; and radiation monitoring instrumentation with the Operations Manager, Mr. B. Kremer, on December 5, 2014; and
- The results of the LORT program annual and biennial reviews with the Director of Site Operations, Mr. T. Summers, via telephone on December 23, 2014.

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

40A7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section 2.3.2 of the NRC Enforcement Policy for being dispositioned as an NCV.

Wrong Channel Error Renders Safety Features Actuation System Channel 2 Inoperable During Testing on Channel 4

Appendix B of 10 CFR Part 50, Criterion V, "Instructions, Procedures, Drawings" requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to this requirement, on November 3, 2014, two reactor operators failed to adequately perform procedure DB-SC-03113, "SFAS [Safety Features Actuation System] Channel 4 Functional Test." Specifically, the operators errantly began performing the test procedure on SFAS Channel 2 instead of SFAS Channel 4, as the procedure required. During the performance of the initial procedures steps, the operators placed the SFAS Channel 2 test trip bypass switch in the "reactor coolant pressure" position. This resulted in the "reactor coolant system pressure-low" and the "reactor coolant system pressure-low low" functions for SFAS Channel 2 being rendered inoperable and an unplanned entry into TS 3.3.5, Condition A. Shortly thereafter, the operators recognized that they were performing their actions on the wrong SFAS channel, stopped all associated activities, and reported the error to the on-shift unit supervisor in the control room. The operators were relieved from all licensed duties, and all SFAS test activities were halted. Within the hour, control room personnel had returned the SFAS Channel 2 test trip bypass switch to its normal position and restored all functions for SFAS Channel 2 to an operable status. The DB-SC-03113 procedure was successfully performed on SFAS Channel 4 on November 8, 2014.

The objective of the Mitigating Systems Cornerstone of Reactor Safety is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). A key attribute of this objective is human performance, and specifically, configuration control. In accordance with NRC IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," the

inspectors determined that the violation was of more than minor significance in that it had a direct impact on this cornerstone objective. The licensee's failure to complete DB-SC-03113 as written resulted in the unplanned inoperability of SFAS Channel 2 for the "reactor coolant system pressure-low" and the "reactor coolant system pressure-low low" functions. The licensee had entered this issue into their CAP as CRs 2014-16542, 2014-16919, 2014-17011, and 2014-17037. A full apparent cause evaluation was performed and corrective actions included, but were not limited to:

- A lessons learned communication was provided to each operating crew prior to their next shift, and a site-wide human performance communication on the issue was developed and promulgated;
- The cabinet door key for SFAS Channel 4, which unintentionally was able to open the SFAS Channel 2 door, was replaced and this physical vulnerability removed; and
- As part of the extent of condition, it was validated that the keys for other similar safety, control, and instrumentation cabinets in the control room functioned only in their proper and respective door locks.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Lieb, Site Vice President
K. Byrd, Director, Site Engineering
J. Chowdhary, Supervisor, Design Engineering
G. Cramer, Manager, Site Protection
J. Cuff, Manager, Training
J. Cunnings, Manager, Site Maintenance
A. Dawson, Manager, Chemistry
L. Griffith, Manager, Human Resources
D. Hartnett, Superintendent, Operations Training
J. Hook, Manager, Design Engineering
D. Imlay, Director, Site Performance Improvement
G. Kendrick, Manager, Site Outage Management
B. Kremer, Manager, Site Operations
G. Laird, Manager, Technical Services Engineering
B. Matty, Manager, Plant Engineering
P. McCloskey, Manager, Site Regulatory Compliance
D. Noble, Manager, Radiation Protection
W. O'Malley, Manager, Nuclear Oversight
R. Oesterle, Superintendent, Nuclear Operations
R. Patrick, Manager, Site Work Management
M. Roelant, Manager, Site Projects
D. Saltz, Director, Site Maintenance
J. Sturdavant, Regulatory Compliance
T. Summers, Director, Site Operations
L. Thomas, Manager, Nuclear Supply Chain
M. Travis, Superintendent, Radiation Protection
J. Vetter, Manager, Emergency Response
V. Wadsworth, Senior Nuclear Engineering Specialist, Regulatory Compliance
G. Wolf, Supervisor, Regulatory Compliance
K. Zellers, Supervisor, Reactor Engineering

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000346/2014005-01	URI	Additional Review of Medical Records Needed (Section 1R11.4)
05000346/2014005-02	NCV	Inadequate Procedural Guidance During Restoration From Valve Maintenance Results in Feedwater Heater System and Plant Power Transient (Section 1R13.1)

Closed

05000346/2014005-02	NCV	Inadequate Procedural Guidance During Restoration From Valve Maintenance Results in Feedwater Heater System and Plant Power Transient (Section 1R13.1)
05000346/2014-003-00	LER	Door Latch Failure Results in Loss of Emergency Ventilation System Function (Section 4OA3.2)
05000346, 2515/190	TI	Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations

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:

- 2014-16993; Multiple Freeze Protection Circuits Indicate Open on Doric Recorder
- 2014-16352; Freeze Protection Circuit 20 Has Local Open Thermocouple
- 2014-16390; Freeze Protection Circuit 126 Grounded

Procedures:

- DB-OP-06913; Seasonal Plant Preparation Checklist; Revision 26

Other:

- Site Certification Letter for Winter Readiness, 2014

1R04 Equipment Alignment

Procedures:

- DB-OP-06225; MDFFP Operating Procedure; Revision 21
- DB-OP-06316; Diesel Generator Operating Procedure; Revision 57

1R05 Fire Protection

Condition Reports:

- 2014-12175; Sprinkler Heads in CCW Pump Room Found Damaged

Procedures:

- DB-FP-00007; Control of Transient Combustibles; Revision 13
- DB-FP-00009; Fire Protection Impairment and Fire Watch; Revision 20
- DB-FP-00018; Control of Ignition Sources; Revision 12
- DB-FP-00005; Fire Brigade; Revision 8

Pre-Fire Plans:

- PFP-AB-105; ECCS Pump Rm 1-1, Room 105, Fire Area AB; Revision 4
- PFP-TB-336; Main Workshop, Supply Storage, Welding Area, Rooms 336, 336A, 336B, Fire Area II; Revision 4
- PFP-TB-MAINT; Maintenance Shop, Rooms 340, 340A, 341, Fire Area II; Revision 4
- PFP-AB-328; Component Cooling Water Heat Exchanger and Pump Room, Room 328, Fire Area T; Revision 4
- PFP-IS-52; Service Water Pump Room, Room 52, Fire Area BF; Revision 3

Other:

- Fire Hazard Analysis Report; Revision 25

1R06 Flood Protection Measures

Operations Standing Orders:

- 2014-006; Guidance to Address Doors in the Event of Flooding / High Water; Revision 0

Procedures:

- RA-EP-02830; Flooding; Revision 3
- RA-EP-02880; Internal Flooding; Revision 3

Work Orders:

- 200488039; Rebuild/Replace SW Pump No. 2; November 3, 2014

1R11 Licensed Operator Regualification Program and Licensed Operator Performance

Condition Reports:

- 2001-91861; Improvement Opportunity: Serious Station Fire Abnormal Implementation
- 2012-00526; Control Room Emergency Ventilation System Start Time per DBBP-OPS-1013 Not Satisfied
- 2013-16552; Licensed Operator Letter and NRC Form 396
- 2013-18474; Individual Failed Annual Regualification Exam
- 2013-18479; Licensed Operators Failed to Notify Health Services and Operations Training of Medical Status Change in a Timely Manner
- 2013-18929; Individual Signed on to Licensed Operator Requal Exam Security Agreement Performed an Observation on Licensed Operator
- 2013-19307; NRC Disagreement with Conclusion of CR-2013-16552 Regarding Licensed Operator Medical Documentation
- 2014-01665; NRC Minor Violation Regarding Required Notification/Submittal Date
- 2014-04899; Clarification of Licensed Operator Trial Period Prescription Usage
- 2014-06808; Improvements Needed in Maintenance of Licensed Operator Medical Qualification Processing
- 2014-12491; Licensed Operator Failed to Report Change in Medication
- 2014-12695; Licensed Operator Did Not Provide Medical Documentation in a Timely Manner
- 2014-13064; Notification of Change in Medical Condition for Reactor Operator
- 2014-13304; Licensed Operator Did Not Notify of Change in Medical Condition
- 2014-13305; Licensed Operator Did Not Comply with License Requirements
- 2014-13639; Trend CR for Timely Notification of Change in Medical Status of Licensed Operators
- 2014-13965; 2013 NRC Exam Found in Public Library after Request Submitted to Withhold Exam from Public View
- 2014-15816; Chemical Hazard to Control Room Operators
- 2014-16154; Exam Failure for SRO LOR Cycle 2014-04 NRC Biennial Written Exam
- 2014-18085; Records in Health Services Do Not Meet Expectations of NRC Inspection

Procedures:

- DB-OP-01101; Containment Entry; Revision 13
- DB-OP-06021; Spent Fuel Pool Operating Procedure; Revision 26
- DB-OP-06401; Integrated Control System Operating Procedure; Revision 23
- DB-OP-06902; Power Operations; Revision 46
- NOP-OP-1002; Conduct of Operations; Revision 9
- NT-OT-7001; Training and Qualification of Operations Personnel; Revision 14
- NOP-TR-1001; Conduct of Training; Revision 16

- NOP-TR-1008; FENOC Simulator Configuration Management; Revision 0
- NOP-TR-1010; Licensed Operator Requalification Exam Development; Revision 2
- NOP-OP-1013, Control of Time Critical Operator Actions, Revision 1
- NOP-LP-1020; Health Assessment; Revision 6
- NG-NT-00601; Control of the Plant-Referenced Simulator; Revision 3
- NG-DB-00319; Control of the Emergency Operating Procedure and Technical Bases; Revision 3

FENOC Business Practices:

- DBBP-TRAN-0014; License Requirements for Licensed Individuals; Revision 10
- DBBP-TRAN-0001; NRC Initial Operator License Exam Simulator Security; Revision 7
- DBBP-TRAN-0021; Simulator Configuration Control; Revision 4
- DBBP-TRAN-0025; Simulator Review Committee Charter; Revision 1
- DBBP-TRAN-0501; Conduct and Development of Job Performance Measures; Revision 7
- DBBP-TRAN-0502; Continuing Training Simulator Evaluations; Revision 11
- NOBP-TR-1112; FENOC Conduct of Simulator Training and Evaluation; Revision 2
- NOBP-TR-1122; Operating Crew Performance Critique; Revision 1
- NOBP-NF-1013; Maintenance of the Training Simulator Core Model Fidelity; Revision 6
- DBBP-OPS-1013; Control of Time Critical Actions; Revision 2
- DBBP-DBNA-0001; Completion of NRC Form 396 and Notification of Changes in Medical Condition; Revision 3
- NOBP-LP-3018; Heat Stress Prevention Practices; Revision 0

Simulator Training Certification Tests:

- 14TAB01; Manual Reactor Trip; Revision 7
- 14TAB02; Simultaneous Trip of All Main Feedwater Pumps; Revision 8
- 14TAB05; Trip of All RCPs [Reactor Coolant Pumps]; Revision 9
- 14TAB08; Double Ended Hot Leg Shear with a Coincident Loss of All Offsite Power; Revision 7
- 14TAB11; Maximum Power Load Rejection with No Reactor Trip; Revision 2
- 14T1A; Large LOCA; Revision 5
- 14N1B; Startup-Hot Shutdown to Hot Standby; Revision 5
- 14N2B; Shutdown-500 Degrees to Cold Shutdown; Revision 6
- 14SOL; Simulator Operating Limits; Revision 7
- 14T20C; Feedwater Line Break Inside Containment; Revision 5
- 14S5; Independent Offsite AC Sources Bus Transfer; Revision 3

Simulator Review Committee Meeting Minutes:

- March 25, 2014
- June 5, 2014
- August 12, 2014
- October 22, 2014

Training Curriculum Review Committee Meeting Agenda and Minutes:

- March 25, 2014
- May 15, 2014
- August 28, 2014
- November 6, 2014

Requalification Simulator Scenarios:

- ORQ-EPE-S112; Revision 11

- ORQ-EPE-S104; Revision 13
- ORQ-EPE-S139; Revision 6
- ORQ-EPE-S128; Revision 9
- ORQ-EPE-S112; Revision 11

Requalification Job Performance Measures (JPMs):

- OPS-JPM-268; Revision 0
- OPS-JPM-115; Revision 0
- OPS-JPM-226; Revision 0
- OPS-JPM-284; Revision 0
- OPS-JPM-017; Revision 2
- OPS-JPM-185; Revision 2

Licensed Operator Requalification Training (LORT) Cycle Requirements:

- OTLC-201404 DB; October 21, 2014
- OTLC-201404 DB; November 11, 2014
- OTLC-201404 DB; November 19, 2014
- OTLC-201404 DB; November 26, 2014
- OTLC-201404 DB; December 3, 2014

Other:

- 2014 Biennial RO Exam 3; November 10, 2014
- 2014 Biennial SRO Exam 3; November 10, 2014
- Performance Gap Analysis 13-OPS-06; 2012; Licensed Operator Continuing Training Annual Simulator Exam Analysis (Operator Fundamentals)
- Performance Gap Analysis 14-OPS-06; 2013; Licensed Operator Continuing Training Annual Simulator Exam Analysis (Operator Fundamentals)
- Operating Crew Performance Critique Form – Attachment 1; January 3, 2013
- Operating Crew Performance Critique Form – Attachment 1; February 8, 2013

1R12 Maintenance Effectiveness

Condition Reports:

- 2014-16330; Service Water Pump Motor No. 2 Stator Temperature Trending High
- 2014-16571; Service Water System Monitoring
- 2014-16628; Emergency Use Only Door Was Used in a Non-Emergency
- 2014-16877; Service Water Pump 2 Capability (P3-2)
- 2014-16955; Broken Screws in Door 509
- 2014-16964; Door 132 Does Not Secure After Use Each Time
- 2014-16965; Door 509 Is Not Closing Under Its Own Power
- 2014-16992; Loss of Communication Alarms Door No. 332
- 2014-18089; Door 509 Latch Bolts Hanging Up

Procedures:

- EN-DP-01511; Design Guidelines For Maintenance Rule Evaluation of Structures; Revision 3

Other:

- Davis-Besse System Health Report 2014 First Half
- MRPM; Maintenance Rule Program Manual; Revision 33

1R13 Maintenance Risk Assessments and Emergent Work Control

Condition Reports:

- 2014-17041; Feedwater Heater Trip During Restoration Of Clearance for HD291G (Level Controller 291A Secondary Isolation) Maintenance (Reactivity Management)
- 2014-17082; Human Performance Trend Identified In Plant Operations
- 2014-17724; NOBP-TR-1122 Operating Crew Performance Critique for HD291A 1-4 FW Heater Emergency Drain

Procedures:

- RA-EP-02830; Flooding; Revision 3
- RA-EP-02880; Internal Flooding; Revision 3

Work Orders:

- 200488039; Rebuild/Replace SW Pump No. 2; November 3, 2014

Operations Standing Orders:

- 2014-006; Guidance to Address Doors in the Event of Flooding / High Water; Revision 0

Other:

- Davis-Besse System Health Report 2014 First Half

1R15 Operability Determinations and Functionality Assessments

Condition Reports:

- 2014-13985; HPI Pump 2 Motor Doesn't Meet Purchase Order Requirements
- 2014-14296; Motor Characteristic Not Evaluated in "Equivalent" ECP
- 2014-14404; LPI/DH Pump 2 Motor Does Not Meet Purchase Order Requirements
- 2014-14406; MU Pump 1 Motor Does Not Meet Purchase Order Requirements
- 2014-15167; Results of Intake Canal and Forebay Silt Measurement
- 2014-15953; Pellet Thermal Conductivity Degradation Modeling: Non-Conservative
- 2014-16024; F_q and Imbalance Temporary Limitations Due to Pellet Thermal Conductivity Analyses
- 2014-16608; Core Operating Limits Report Update Required Prior to EOC 19 Withdrawal of APSRs
- 2014-16700; Past Operability Review for HPI No. 2 Motor Did Not Evaluate Pre-18RFO Aux Transformer Taps
- 2014-17576; Deficiency In Methodology Used for Emergency Core Cooling System Performance Requirements
- 2014-17296; 2014 NRC Mods/50.59 Inspection - Davis-Besse Does Not Have an Analysis to Satisfy Item 1 of RIS 2011-12

Procedures:

- DB-OP-03007; Miscellaneous Instrument Daily Checks; Revision 27
- DB-OP-06281; Service Water Operating Procedure; Revision 63
- DB-OP-06913; Seasonal Plant Preparation Checklist; Revision 25

Calculations:

- C-EE-004.01-010; Protective Relay Setpoint for High Pressure Injection Pump Motor 1-2 (AD111); Revision 2

- C-EE-004.01-049; 4.16 kV Bus C1/D1 Degraded Voltage, Loss of Voltage, and 27X-6 Relay Setpoints; Revision 15
- C-EE-015.03-007; Operating Load Inputs for AC Power System Analysis; Revision 2
- C-EE-015.03-008; AC Power System Analysis; Revision 6
- C-EE-024.01-011; Evaluation of Davis-Besse EDG Transient Response During Design Basis LOOP/LOCA, LOOP Only, and Appendix R Loading; Revision 2
- C-NSA-052.01-003; HPI Pump Acceptance Criteria; Revision 8
- C-NSA-064.02-036; DB-1 LOCA Summary Report; Revision 2
- C-NSA-009.05-001; Ultimate Heat Sink Volumes and Surface Areas; Revision 0

Other:

- Standing Order No. 14-010; Guidance to Address Low Forebay Level and Frazil Ice Conditions Based on POD for CR2014-15167

1R19 Post Maintenance Testing

Condition Reports:

- 2014-15931; Encountered Slight Delay Installing the EDG Air Start Motors: WW1443
- 2014-15950; A Piece of Gasket Material and Pieces of Drill Shaving Were Found in the South Aftercooler of EDG No. 1

Procedures:

- DB-MM-09098; AFPT Governor Maintenance; Revision 12
- DB-MM-09345; Emergency and Station Blackout Diesel Engine 6-Year Maintenance; Revision 2
- DB-MM-09346; Emergency and Station Blackout Diesel Engine 12-Year Maintenance; Revision 2
- DB-MM-09347; Emergency and Station Blackout Diesel Engine 2-Year Maintenance of Fuel Oil Filters and Various Inspections; Revision 4
- DB-MM-09320; Emergency and Station Blackout Diesel Engine Maintenance; Revision 36
- DB-OP-06316; Diesel Generator Operating Procedure; Revision 57
- DB-SC-03070; Emergency Diesel Generator Monthly Test; Revision 35

Work Orders:

- 200540286; Perform Inspections and Clean as Needed the Tube Side of the EDG No. 1 Aftercoolers E196-1B and E196-1A; October 20, 2014
- 200535216; PM 11089: Replace Breaker BE1261; October 20, 2014
- 200535220; PM 11094: Replace Breaker BE1258; October 20, 2014
- 200538963; Replace S206-01 and S206-02 Air Starter Motors and Self-Locking Nuts on EDG No. 1; October 20, 2014
- 200470897; PM 7200: Check & Adjust Relay 86-2 for EDG No. 1; October 20, 2014
- 200453954; Lower Air Motor Exhaust Hose Kinks DA30 Side; October 20, 2014
- 200535221; PM 11095: Test and Replace Breaker BE1289 as Necessary on MCC E12B; October 20, 2014
- 200535217; PM 11090: Test and Replace Breaker BE1259 as Necessary on MCC E12B; October 20, 2014
- 200536158; PM 6380: Replace Summer Oil and Filter F108-1 on EDG No. 1; October 20, 2014

1R22 Surveillance Testing

Procedures:

- DB-OP-03013; Containment Daily Inspection & Containment Closeout Inspection; Revision 10
- DB-MI-03108; Functional Test/Calibration of PT-2001 Containment Pressure Transmitter to SFAS Channel 2; Revision 8

1EP2 Alert and Notification System Evaluation

Procedures:

- RA-EP-00400; Prompt Notification System Maintenance; Revision 6

Other:

- FEMA ANS Letter for Backup ANS; December 21, 2011
- FEMA ANS Design Basis Report; July 28, 2014
- Davis Besse Evacuation Time Estimate by KLD; Revision 2
- Davis Besse Evacuation Time Estimate by KLD 2013 Population Update; October 2, 2013
- Davis Besse Evacuation Time Estimate by KLD 2014 Population Update; September 23, 2014
- Siren Testing and Maintenance Data; March 2012 through September 2014
- 2013 Emergency Information Calendar for Ottawa and Lucas Counties
- 2014 Emergency Information Calendar for Ottawa and Lucas Counties

1EP3 Emergency Response Organization Staffing and Augmentation System

Procedures:

- RA-EP-02220; Emergency Operations Facility Activation and Response; Revision 12
- RA-EP-00100; Emergency Plan Training Program; Revision 20
- RA-EP-00520; Emergency Response Organization; Revision 9
- RA-EP-00550; Computerized Automated Notification System; Revision 6

Other:

- EPLAN Appendix F; On Shift Staffing Analysis; Revision 0
- Current ERO Team Roster; Revision 123
- Emergency Response Organization Augmentation Call-in Drill Results; EOF Staffing Detail; March 2012 through September 2014
- Selected Station Emergency Response Personnel Training Records

1EP4 Emergency Action Level and Emergency Plan Changes

Procedures:

- DBRM-ER-1500A; Davis-Besse Emergency Action Level Basis Document; Revision 6
- DBRM-ER-5003; Equipment Important to Emergency Response; Revisions 10, 11, and 12
- RA-EP-01500; Emergency Classification; Revision 15
- RA-EP-02240; Offsite Dose Assessment; Revisions 6, 7, and 8
- NORM-LP-5001; FENOC Position on "Release in Progress" for Emergency Response Organization; Revisions 3 and 4

Other:

- Emergency Plan; Revision 29

1EP5 Maintenance of Emergency Preparedness

Condition Reports:

- 2012-04733; Stack Vent Flow issue
- 2012-04591; Drill DEP PI Failure Associated with Release
- 2013-04763; DEP PI Trend Issue
- 2013-05103; Drill DEP PI Failure Associated with Release
- 2013-11210; DEP PI Trend Issue
- 2013-13419; Evaluation Challenges Associated with Radiation Monitor Elimination
- 2013-17845; Issues with Compensatory Measures Associated with Off Site Dose Assessment
- 2013-18011; Fleet ERO Support Training Issue
- 2013-20012; Stack Vent Flow issue

Procedures:

- DN-OP-02544; Security Event and Threats; Revision 20
- RA-EP-01500; Emergency Classification; Revision 15
- RA-EP-1600; Unusual Event; Revision 8
- RA-EP-01700; Alert; Revision 08
- RA-EP-01800; Site Area Emergency; Revision 07
- RA-EP-01900; General Emergency; Revision 09
- RA-EP-02110; Emergency Notification; Revision 12
- RA-EP-02240; Offsite Dose Assessment; Revision 08
- RA-EP-02245; Protective Action Guidelines; Revision 05
- RA-EP-02870; Station Isolation; Revision 05
- RA-EP-02890; Emergency Response Organization Response to Security Events or Threats; Revision 01

Audit and Assessment Reports:

- MS-C-12-11-24; Fleet Oversight Audit Report; November 2012
- MS-C-13-11-24; Fleet Oversight Audit Report; November 2013
- SN-SA-2013-0023; EP Assessment; April 18, 2013
- SN-SA-2013-0081; March 05, 2013 EP Drill Assessment; June 28, 2013
- SN-SA-2013-0095; April 2, 2013 EP Drill Assessment; June 28, 2013
- SN-SA-2013-0131; May 14, 2013 EP Exercise Assessment; August 6, 2013
- SN-SA-2013-0231; September 10, 2013 EP Drill Assessment; 11/04/2013
- SN-SA-2013-0341; October 29, 2013 EP Drill Assessment; January 22, 2014
- SN-SA-2013-0031; November 14, 2013 EP Unannounced Drive In Drill; January 8, 2014
- SN-SA-2014-0530; July 8, 2014 Unusual Event Self-Assessment; August 13, 2014

Other:

- Emergency Plan; Revision 29

1EP6 Drill Evaluation

Condition Reports:

- 2014-15714; ERO PR Communicator Did Not Initially Respond to the 6666 Rapid Site Evacuation Declaration
- 2014-15742; EP Drill - Gaitronics Paging and Phone Issues in Simulator for E-Plan Drill
- 2014-15762; EP Drill - Station Alarm Tones Were Not Heard Over GAI-Tronics at the Lindsey ERF

- 2014-15765; EP Drill - Challenges Were Identified in Coordinating Resources to Return to Site During a Take Cover or Following a Rapid Site Evacuation
- 2014-16981; EP Drill – Controller Action Required to Stop Interjection of Incorrect Information Into the 11/12/2014 Drill Scenario

Procedures:

- RA-EP-02010; Emergency Management; Revision 17
- RA-EP-02220; Emergency Operations Facility Activation and Response; Revision 12
- RA-EP-01500; Emergency Classification; Revision 15

Other:

- Davis-Besse Emergency Preparedness 2014 Integrated Drill Manual; October 14, 2014
- Davis-Besse Emergency Preparedness 2014 Integrated Drill Manual; November 12, 2014
- DBRM-EMER-1500B; Hot EAL Wall Board, Revision 1
- DBRM-EMER-1500B; Cold EAL Wall Board, Revision 1

2RS1 Radiological Hazard Assessment and Exposure Controls

Condition Reports:

- 2014-00437; Faulty Electronic Dosimeter Cause Dose Rate Alarm
- 2014-04880; Bechtel Laborer Performing Fire-watch Received Dose Alarm
- 2014-05150; PCI Worker Receives an Accumulated Dose Alarm

Procedures:

- NOP-OP-4010; Determination of Radiological Risk; Revision 8
- NOP-OP-4101; Access Controls for Radiologically Controlled Areas; Revision 11

2RS5 Radiation Monitoring Instrumentation

Condition Reports:

- 2013-12592; Damaged Source CHP1.4.266, Technetium 99 4x4
- 2013-13468; Radiation Protection Instrument Quality Control Process Requirements not Consistently Met
- 2013-16662; Containment Purge Radiation Element Was Not Able to Pass the Functional Test
- 2013-17951; RE 8437 Alert Set-point Found Out of Acceptable Range
- 2014-02323; RE 4596A Detector Damaged
- 2014-05073; Air Leakages Found on Installed Valves Associated with Sample Line for RE 4597A
- 2014-05707; Suction Sample Line on RE 4597AA Failed to Meet the Required Pressure Test
- 2014-06757; RE 8421 Check Source Failed Response
- 2014-07761; RCM5052 for Containment Purge Has High Flow Alarm and Unable to Adjust to Lower This Flow
- 2014-10983; Station Effluent Radiation Monitor Sample Flow Computer Point During Function Test of RE 8433
- 2104-12492; RE1998 Detector Would Not Calibrate
- 2014-13940; JL Shepherd Model 89 Calibrator Requires Maintenance

Procedures:

- DB-HP-00010; Radiation Measuring and Test Equipment Calibration and Control Program; Revision 9

- DB-HP-01324, ACCUSCAN-II Whole Body Counter Calibration and Performance Checks; Revision 2
- DB-HP-01320; Operation of Whole Body Counters; Revision 11
- DB-HP-01322; Body Counter Calibration and Performance Testing; Revision 6
- DB-HP-01435; Calibration and Use of the Portal Monitor SPM 904C/SPM 906; Revision 3
- DB-HP-01447; Small Article Monitor Calibration; Revision 4
- DB-HP-01452; Air Sampler Calibration; Revision 7
- DB-HP-01455; Continuous Particulate Air Monitor AMS-3, Calibration and Use; Revision 6
- DB-HP-01456; Calibration of the Eberline AMS-4; Revision 2
- DB-HP-01457; MGP AMP 50/100/200 Calibration and Use; Revision 2
- DB-HP-01463; GEM-5 Gamma Exit Monitor Calibration and Use; Revision 0
- DB-HP-01464; Cronos-4 Object/Tool Monitor Calibration and Use; Revision 0
- DB-HP-01465; ARGOS-5 Personnel Contamination Monitor Calibration and Use; Revision 1
- DB-HP-06028; Radwaste Building Radiation Monitoring System; Revision 3
- NOP-OP-4413; PM-12 Calibration, Source Check and Use; Revision 0

Calibration Records:

- DB-HP-011322; FASCAN Efficiency Calibration Verification; February 4, 2014
- DB-0125-4; Small Article Monitor Calibration Data Sheet; SAM-11; August 28, 2014
- DB-0178-3; AMS-4 Calibration Record, LI 2.8.186; August 20, 2014
- DB-0178-3; AMS-4 Calibration Record, LI 2.8.214; August 15, 2014
- DB-0190-3; Portal Monitor Calibration Record, SPM-906, LI 2.12.82; November 14, 2014
- DB-0190-3; Portal Monitor Calibration Record, SPM-906, LI 2.12.54; December 12, 2013
- DB-0199-3; AMP-50/100/200, LI 2.7.500; November 6, 2014
- DB-0560-1; Air Sampler Calibration Sheet, LI 2.8.36E; November 11, 2014
- DB-0558-0; ASP-1NRD Calibration Record, LI 2.7.233; August 20, 2014
- DB-0774-0; Argos Calibration Record, LI 2.12.111; January 14, 2014
- DB-0787-0; Cronos-4 Calibration; September 13, 2014
- DB-0788-0; Gem-5 Calibration Data Sheet, LI 1.12.103; September 12, 2014
- DB-0789-0; Fluke 451P Calibration Record, LI 2.7.613; July 30, 2014
- NOBP-NF-3102; Davis-Besse CFP Material Log; April 27, 2014
- NOP-OP-4404-01; PCM Calibration; LI 2.12.58; September 30, 2014

Other:

- MS-C-13-08-03; Fleet Oversight Audit Report; October 10, 2013
- RadCal Corporation Report of Calibration Number 8379; December 27, 2013

40A1 Performance Indicator Verification

Condition Reports:

- 2014-16784; Discrepancies with values submitted for Monthly Maximum RCS Identified Leakage

Forms:

- NOBP-LP-4012-53; Reactor Coolant System Leakage; Revision 0

Procedures:

- DB-SP-03357; RCS Water Inventory Balance; Revision 19
- RA-EP-00200; Drill and Exercise Program; Revision 12
- RA-EP-00400; Prompt Notification System Maintenance; Revision 06
- RA-EP-00420; Response to Prompt Notification System Malfunction; Revision 06

- RA-EP-04400; Prompt Notification System Test Procedure, Revision 11
- DBBP-EMER-0002; NRC PI for ERO Drill Participation; Revision 8
- DBBP-EMER-0003; NRC PI for Alert and Notification System Reliability; Revision 7
- DBBP-EMER-0004; NRC PI for Drill/Exercise Performance; Revision 9

FENOC Business Practices:

- NOBP-LP-4012; NRC Performance Indicators; Revision 4

Other:

- Select Operator Logs covering the period of October 2013 through September 2014
- NRC Performance Indicator Data; Emergency Preparedness – Drill/Exercise Performance; 2nd Quarter 2013 through 2nd Quarter 2014
- NRC Performance Indicator Data; Emergency Preparedness – ERO Readiness 2nd Quarter 2013 through 2nd Quarter 2014
- NRC Performance Indicator Data; Emergency Preparedness – Alert and Notification System Reliability; 2nd Quarter 2013 through 2nd Quarter 2014

40A2 Problem Identification and Resolution

Condition Reports:

- 2014-00804; Door 105 Replacement For Frame Gap
- 2014-03079; Bechtel Laborer Fell Off Ladder in West D-Ring, Elevation 565'
- 2014-02680; Door 322 Latch Fingers Not Releasing Consistently
- 2014-03381; Door 105 Won't Latch Shut
- 2014-03451; Door 406 Found Open During Safety Observation
- 2014-03512; Door 406 Observed Open Due to Ventilation and Lack of Self-Check/Challenge
- 2014-04386; Fire Door 406 Found Ajar – Replicate of Bechtel CR 736
- 2014-04618; Door 406 Found Open/Unlatched
- 2014-04733; NA'd PM Step – Door 308
- 2014-05877; Door 308 Not Functioning Properly
- 2014-06464; Door 105 Sweeper
- 2014-06702; Door 308 Mechanical Issues – Fingers Extracted Will Not Secure
- 2014-09810; Common Cause on 18RFO OSHA Recordable Safety Performance
- 2014-12886; Door 428 (Low Voltage Switchgear No. 1) Will Not Unlock from Turbine Building Side
- 2014-12937; Door 308 (Mechanical Penetration Room No. 4) Closure Defective
- 2014-13211; Door 308 – Broken Door Latch
- 2014-13278; Door 308 Failed to Latch Closed
- 2014-13432; Door 308 Did Not Operate Properly
- 2014-14966; Door No. 406 (Spent Fuel Pool Corridor) Was Found Open
- 2014-16481; Door 427 Found in a Severely Degraded Condition
- 2014-16628; Emergency Use Only Door Was Used in a Non-Emergency
- 2014-16955; Broken Screws in Door 509
- 2014-16964; Door 132 Does Not Secure After Use Each Time
- 2014-16965; Door 509 Is Not Closing Under Its Own Power
- 2014-16992; Loss of Communication Alarms Door No. 332
- 2014-17092; Door 509 Experiencing Loss of Communication Error
- 2014-18089; Door 509 Latch Bolts Hanging Up

Procedures:

- NOP-LP-2001; Corrective Action Program; Revision 35

Licensee Performance Indicators:

- D-RPO-15; Reliable Plant Operations – Control Room Deficiencies; November 2014
- D-RPO-16; Reliable Plant Operations – Operator Workarounds; November 2014
- D-RPO-17; Reliable Plant Operations – Operator Burdens; November 2014

Other:

- Operations Log of Control Room Deficiencies, Work Arouns, Burdens; December 22, 2014
- Operations Loss of Function List; December 22, 2014
- Operations Log of Fire Protection System Issues; December 22, 2014
- Operations Log of Degraded Equipment Important to Emergency Response; December 22, 2014
- Chemistry Burdens List; December 21, 2014
- Select Operator Logs covering the period of July 2014 through December 2014
- Davis-Besse Injury Log; 2014

40A3 Followup of Events and Notices of Enforcement Discretion

Condition Reports:

- 2014-13211; Door 308 – Broken Door Latch
- 2014-13246; Reportability Determination of Door 308 Condition to NRC Revised
- 2014-13278; Door 308 Failed to Latch Closed
- 2014-13432; Door 308 Did Not Operate Properly
- 2014-15953; Pellet Thermal Conductivity Degradation Modeling: Non-Conservative
- 2014-16024; F_q and Imbalance Temporary Limitations Due to Pellet Thermal Conductivity Analyses
- 2014-16608; Core Operating Limits Report Update Required Prior to EOC 19 Withdrawal of APSRs
- 2014-17576; Deficiency In Methodology Used for Emergency Core Cooling System Performance Requirements

NRC Event Notification System (ENS) Forms:

- 50639: Non-Conservatism In Methodology Used for Emergency Core Cooling System Performance Requirements; November 25, 2014

Other:

- Select Operator Logs covering the period of April 2014 through December 2014

40A5 Other Activities

Condition Reports:

- 2014-05239; NRC Questioned Why No Interim Actions Were Taken in their Fukushima Response to Flooding Issue
- 2014-16147; Flooding Hazard Reanalysis Software Error
- 2014-16382; NRC Identified Issues with EDG 2 Outside Door 362
- 2014-16619; Door 361 and 362 Supplemental Flooding Walkdown

Procedures:

- RA-EP-01500; Emergency Classification; Revision 15
- RA-EP-02810; Tornado or High Winds; Revision 11
- RA-EP-02830; Flooding; Revision 3
- RA-EP-02870; Station Isolation; Revision 5

- RA-EP-02880; Internal Flooding; Revision 3

Business Practices:

- DBBP-OPS-0012; Guidance on Operation of Spent Fuel Pool Train Bay (Door No. 300) and North Train Bay Rollup Door (Door No. 334); Revision 4

Operations Standing Orders:

- 2014-006; Guidance to Address Doors in the Event of Flooding / High Water; Revision 0

Licensee Docketed Correspondence:

- L-14-235; Supplement to Flood Hazard Reevaluation Report in Response to Near-Term Task Force Recommendation 2.1; July 17, 2014
- L-14-170; FENOC Supplemental Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3 of the Near-Term Task force Review of Insight from the Fukushima Dai-ichi Accident; July 30, 2014
- L-14-256; Response to Request for Additional Information Regarding the Near-Term Task Force Recommendation 2.1 Flood Hazard Reevaluation Report (TAC No. MF3721); August 25, 2014

4OA7 Licensee-Identified Violations

Condition Reports:

- 2014-16542; Misposition During the Performance of DB-SC-03113, SFAS Channel 4 Functional Test
- 2014-16553; SFAS Channel 4 Door Key Can Unlock SFAS Channel 2 Door
- 2014-17011; Control Room Equipment Cabinet Key Discrepancies

Procedures:

- DB-SC-03110; SFAS Channel 1 Functional Test; Revision 20
- DB-SC-03111; SFAS Channel 2 Functional Test; Revision 16
- DB-SC-03112; SFAS Channel 3 Functional Test; Revision 15
- DB-SC-03113; SFAS Channel 4 Functional Test; Revision 16

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
ANS	Alert and Notification System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DG	Diesel Generator
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
EVS	Emergency Ventilation System
FENOC	FirstEnergy Nuclear Operating Company
HP	High Pressure
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LORT	Licensed Operator Requalification Training
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
OWA	Operator Workaround
PARS	Publicly Available Records System
PCT	Peak Cladding Temperature
PI	Performance Indicator
PMT	Post-Maintenance Testing
RFO	Refueling Outage
RP	Radiation Protection
SDP	Significance Determination Process
SFAS	Safety Features Actuation System
SRO	Senior Reactor Operator
SW	Service Water
TI	Temporary Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report
URI	Unresolved Item
WO	Work Order

R. Lieb

-2-

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (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/

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

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

Enclosure:
Inspection Report 05000346/2014005
w/Attachment: Supplemental Information

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