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

October 23, 2014

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 05000346/2014004

Dear Mr. Lieb:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Davis-Besse Nuclear Power Station. The enclosed report documents the results of this inspection, which were discussed with you and other members of your staff on October 7, 2014.

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

If you contest the subject or severity of any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555–0001, with a copy to the Regional Administrator, 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 Inspectors' Office at the Davis-Besse Nuclear Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS)

component of NRC's Agencywide Documents Access and Management System (ADAMS), 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 05000346/2014004
w/Attachment: Supplemental Information

cc w/encl: Distribution via LISTSERV®

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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| Docket No: | 50–346 |
| License No: | NPF–3 |
| Report No: | 05000346/2014004 |
| Licensee: | FirstEnergy Nuclear Operating Company (FENOC) |
| Facility: | Davis-Besse Nuclear Power Station |
| Location: | Oak Harbor, OH |
| Dates: | July 1 through September 30, 2014 |
| Inspectors: | D. Kimble, Senior Resident Inspector<br>T. Briley, Resident Inspector<br>M. Mitchell, Health Physicist<br>P. Smagacz, Resident Inspector–Fermi Station |
| Approved by: | J. Cameron, Chief<br>Branch 4<br>Division of Reactor Projects |

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000346/2014004; 7/1/14–9/30/14; Davis-Besse Nuclear Power Station; Fire Protection; Follow-Up of Events and Notices of Enforcement Discretion.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. Both findings were also considered non-cited violations (NCVs) of NRC regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (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 Finding

### Cornerstone: Initiating Events

- Green. An NRC-identified finding of very low safety significance (Green) and associated NCV of Technical Specification (TS) 5.4.1(d) were identified when the licensee failed to properly implement station procedures for fire protection impairments and fire watches. Specifically, a required compensatory fire watch on numerous occasions did not enter a room for which fire impairments had existed because of a door problem. Upon identification the licensee entered the issue in the corrective action program and implemented corrective actions including modification of fire protection software to track administrative impairments and placing a camera in the room until the door was repaired.

  This finding was determined to be of more than minor safety significance because it was associated with the Initiating Events cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the impairments so that the site's ability to promptly detect and suppress a fire would be maintained. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Phase 1–Initial Screening and Characterization of Findings." Because the finding involved fire protection, the inspectors transitioned to IMC 0609, Appendix F, "Fire Protection Significant Determination Process." The finding was characterized according to IMC 0609, SDP, Appendix F, Attachment 1, "Fire Protection SDP Phase 1 Worksheet," dated September 20, 2013. This issue screened as low safety significance per Attachment 1, Question 1.3.1.A, because it did not affect the ability of the reactor to reach and maintain safe shutdown. This finding had a cross-cutting aspect in the area of human performance associated with conservative bias such that individuals use decision making practices that emphasize prudent choices over those that are simply allowable. In particular, the shift manager made an inaccurate assessment of existing fire impairments by only checking the fire protection software and not the fire watch log, which was readily available. The shift manager also made the decision to not document

the approval for modifying how the compensatory fire watch was being performed such that on-coming personnel would be aware of the change. (H.14) (Section 1R05.1)

**Cornerstone: Mitigating Systems**

- Green. An NRC-identified finding of very low safety significance and an associated Severity Level IV NCV of the reporting requirements of 10 CFR 50.72(b)(3)(xiii) were identified following the inspectors' review of licensee corrective actions for a previous occurrence of a reportable condition that took place on May 26, 2014. That event was reported to the NRC as required (Event Notification 49546), and the licensee developed applicable corrective actions within their Corrective Action Program (CAP). While reviewing the circumstances surrounding that issue, the inspectors identified that on May 21, 2014, the licensee's control room overhead annunciator system had suffered a similar malfunction. The licensee's initial reviews of the May 21, 2014, issue, however, determined that the matter was not reportable, and no report to the NRC Operations Center was made at that time. The event was eventually reported to the NRC (Event Notification 50252) on July 3, 2014, following discussions with the inspectors.

  The finding was determined to be of more than minor significance because it was associated with the Mitigating Systems cornerstone and directly impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inspectors had previously determined that the underlying technical issue surrounding this event involved a finding of very low safety significance, and documented that finding in NRC IR 05000346/2014003 (FIN 05000346/2014003–05; ADAMS Accession No. ML14212A468). That issue, involving the licensee's failure to assign appropriate work priority to corrective actions associated with their annunciator system, resulted in additional malfunctions of the control room overhead annunciator system, one of which was the event that occurred on May 21, 2014. The inspectors evaluated the finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings-At-Power.” Using Exhibit 2, which contains the screening questions for the Mitigating Systems cornerstone of reactor safety, the inspectors determined that the finding screened as very low safety significance because all screening questions were, answered ‘No.’

  This finding was determined to have a cross-cutting aspect in the area of human performance, documentation, because the licensee's reference material related to NRC event reporting that was available to the on-shift operations crew on May 21, 2014, did not contain comprehensive guidance relative to the event that occurred. (H.7) (Section 4OA3.3)

## REPORT DETAILS

### Summary of Plant Status

The unit began the inspection period operating at full power and, with the exception of small power maneuvers (e.g., reductions of 10 percent power or less) to facilitate planned evolutions and testing, remained operating at or near full power for the balance of the inspection period.

### 1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Condition–Severe Area Thunderstorms

a. Inspection Scope

On September 4, 2014, a series of severe thunderstorm watches and warnings were issued for the Northwest Ohio area near the station as a severe weather front passed through the local area. The inspectors reviewed the licensee's overall preparations/ protection for the impending severe weather conditions.

Just prior to the onset of the inclement weather conditions, the inspectors walked down the areas in and around the switchyard, under the site's high voltage lines and near transformers, and the licensee's emergency power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee's preparations against the site's procedures to determine whether or not the actions performed were adequate. The inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during tornados or other high wind conditions. The inspector's evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

The inspectors also reviewed a sample of CAP items to verify that the licensee had identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station procedures. Specific documents reviewed during this inspection are listed in the Attachment to this report.

These reviews conducted by the inspectors in response to the September 4, 2014 series of severe thunderstorm watches and warnings constituted a single readiness for impending adverse weather inspection sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Condition–Tornado Watches and Warnings

a. Inspection Scope

On September 10, 2014, a series of storms passing through the local area near the station generated several tornado watches and warnings for the Northwest Ohio area near the station. The inspectors reviewed the licensee's overall preparations/protection for the impending severe weather conditions.

Just prior to the onset of the inclement weather conditions, the inspectors walked down the areas in and around the switchyard, under the site's high voltage lines and near transformers, and the licensee's emergency power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee's preparations against the site's procedures to determine whether or not the actions performed were adequate. The inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles in the event of a tornado or other high wind conditions. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

The inspectors also reviewed a sample of CAP items to verify that the licensee had identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station procedures. Specific documents reviewed during this inspection are listed in the Attachment to this report.

These reviews conducted by the inspectors in response to the September 10, 2014, local Northwest Ohio tornado watches and warnings constituted a single readiness for impending adverse weather inspection sample as defined in IP 71111.01–05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Alignment Verifications

a. Inspection Scope

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

- Low pressure injection (LPI) Train 2 when LPI Train 1 was out-of-service for planned maintenance during the week ending July 5, 2014;
- Emergency Diesel Generator (EDG) No. 2 when the Station Blackout Diesel Generator was out-of-service for planned maintenance during the week ending July 19, 2014; and
- Station Blackout Diesel Generator when EDG No. 1 was out-of-service for planned maintenance during the week ending September 27, 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, Updated Safety Analysis Report (USAR), technical specification (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 three partial system alignment verification inspection samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Alignment Verification

a. Inspection Scope

During the period of July 21, 2014, through July 31, 2014, the inspectors performed a complete system alignment inspection of the station's water-based fire protection and suppression system to verify the functional capability of the system. This system was selected because it was considered both important to safety and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the licensee's CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted a single annual complete system alignment verification inspection sample as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours

a. Inspection Scope

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

- No. 1 Mechanical Penetration Room–Fire Area AB (Rooms 202, 208, and 208C);
- No. 3 Mechanical Penetration Room–Fire Area AB (Rooms 303 and 303PC);
- No. 4 Mechanical Penetration Room–Fire Area A (Room 314);
- High Voltage Switchgear Room 'A'–Fire Area S (Room 325);
- High Voltage Switchgear Room 'B'–Fire Area Q (Room 323); and
- Service Building No. 2.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan.

The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's individual plant examination of external events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

Failure to Properly Perform Required Fire Watch

Introduction

An NRC-identified finding of very low safety significance (Green) and an associated NCV of TS 5.4.1(d) were identified when the licensee failed to properly implement station procedures for fire protection impairments and fire watches. Specifically, a required compensatory fire watch on numerous occasions did not enter a room for which fire impairments had existed.

Description

On August 11, 2014, a security officer performing an hourly roving fire watch patrol in Mechanical Penetration Room 4 (Room 314) in the auxiliary building was unable to operate the normal entrance and exit door (Door 308) due to failure of the door closure mechanism. Maintenance personnel were able to open the door a short time later and removed the defective door closure mechanism. To avoid further use of the door, site security personnel had inquired if the hourly fire watch could be performed by checking the exterior of the door (one side of the fire barrier) without observing the interior of the room. The operations shift manager performed an assessment of current fire impairments by reviewing the station fire protection software. No impairments were listed in the software for Room 314 and approval was granted by the shift manager to perform the hourly fire watch by checking the exterior of the door without observing the interior of the room.

The shift manager had performed an inadequate assessment of Room 314 fire impairments by not reviewing the fire watch log, which documented a pre-existing fire impairment that had been in effect since February 14, 2013. The impairment was administrative in nature since it involved inadequate separation of instrumentation circuitry. This condition was documented in CR 2013–02276 and recommended an hourly fire watch in Room 314. The fire protection software did not have the capability to track administrative impairments, therefore none were listed.

On August 20, 2014, during a licensee meeting to discuss a non-related Door 308 issue, the security shift supervisor indicated that security officers continued to perform the hourly fire watch for Room 314 by only checking the exterior of the door. This was determined to be inappropriate as multiple fire impairments had existed at the time that required a compensatory fire watch:

- On February 14, 2013, there was an administrative impairment for potential condition associated with safe shutdown circuitry (CR 2013–02276);
- On August 11, 2014, the door closure mechanism for Door 308 failed and was removed by maintenance personnel (CR 2014–12937);
- On August 18, 2014, the licensee identified missing caulking allowing air to leak through a seal for a shield building blow out panel (CR 2014–13175); and
- On August 19, 2014, six out of twenty-two smoke detectors in Room 314 were removed from service to support two valves to be cut out and replaced (minimum is twenty smoke detectors in service to have detection functionality).

Consequently, from August 11, 2014, to August 20, 2014, the hourly fire watch for Room 314 was routinely performed from outside the room despite multiple impairments that had existed inside the room requiring direct observation. CR 2014–13381 was generated by the licensee to document the issue.

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 properly implement plant procedures for performing compensatory fire watches was 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 the finding was associated with the Initiating Events cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the impairments so that the site's ability to promptly detect and suppress a fire would be maintained.

The inspectors evaluated the finding using IMC 0609, Attachment 4, "Phase 1–Initial Screening and Characterization of Findings." Because the finding involved fire protection, the inspectors transitioned to IMC 0609, Appendix F, "Fire Protection Significant Determination Process." The finding was characterized according to IMC 0609, SDP, Appendix F, Attachment 1, "Fire Protection SDP Phase 1 Worksheet," dated September 20, 2013. The issue screened as of very low safety significance (Green), per Attachment 1, Question 1.3.1.A, because it did not affect the ability of the reactor to reach and maintain safe shutdown.

This finding had a cross-cutting aspect in the area of human performance associated with conservative bias such that individuals use decision making practices that emphasize prudent choices over those that are simply allowable. In particular, the shift manager made an inaccurate assessment of existing fire impairments by only checking the fire protection software and not the fire watch log, which was readily available. The shift manager also made the decision to not document the approval for modifying how the compensatory fire watch was being performed, such that on-coming personnel would be aware of the change. (H.14)

Enforcement

Plant TS 5.4.1(d), requires, in part, the licensee to establish, implement, and maintain applicable written procedures covering fire protection program implementation. The fire protection program was implemented, in part, by Davis-Besse Procedure DB–FP–00009, "Fire Protection Impairment and Fire Watch," Revision 20. Procedure DB–FP–00009, Step 6.3.4, states: "Roving Fire Watches shall observe the assigned patrol area(s)/room(s)/panel(s) which is (are) to be observed as related to the impairment, for example, room associated with impaired door, damper, penetration seal, detector, etc." Contrary to this requirement, between August 11, 2014, and August 20, 2014, the licensee failed to observe the interior of Mechanical Penetration Room 4 when multiple fire impairments had existed. Because this finding is of very low safety significance (Green), had been entered into the licensee's CAP, and the licensee had taken or planned corrective actions under CR 2014–13381, 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 include, but are not limited to, modification of the fire protection software to track administrative impairments and placing a camera in Mechanical Penetration Room 4 until the door was repaired.

1R06 Flood Protection Measures (71111.06)

.2 Internal Flooding

a. Inspection Scope

During the period of August 11 to September 19, 2014, the inspectors conducted an internal flooding review for the lower levels of the auxiliary building, with specific emphasis on the No. 1 and No. 2 Emergency Core Cooling System (ECCS) Rooms. 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 the auxiliary feedwater 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 No. 1 and No. 2 ECCS Rooms 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. 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.

.3 Underground Bunkers/Manholes

a. Inspection Scope

During the period of August 11–15, 2014, the inspectors conducted a review of underground bunkers/manholes subject to flooding that contained electrical cables. The inspectors' reviews included the following underground bunkers/manholes subject to flooding:

- Electrical Manhole 3041; and
- Electrical Manhole 3042.

The inspectors checked for submerged cables, that splices were intact, and that appropriate cable support structures were in place. In those areas where dewatering devices were used, such as sump pumps, the inspectors verified that the devices were functional and that any level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submergence conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues to verify the adequacy of the corrective actions. Specific documents reviewed during this inspection are listed in the Attachment to this report.

The inspectors' reviews of these underground bunkers/manholes constituted a single inspection sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

.1 Annual Resident Inspector Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's testing of Component Cooling Water (CCW) Heat Exchanger Number 2 to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this document.

This annual review of heat sink performance by the inspectors constituted a single inspection sample as defined in IP 71111.07–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Simulator Training

a. Inspection Scope

On August 8, 2014, the inspectors observed a crew of licensed operators in the plant's simulator during a graded simulator scenario. 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 graded scenario 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.

.2 Resident Inspector Quarterly Observation of Control Room Activities

a. Inspection Scope

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

- The licensee's response to a fire alarm in containment with the unit operating at full power, and the subsequent declaration of a Notice of Unusual Event (NOUE) per the site's emergency plan during the week ending July 12, 2014;
- Normally scheduled testing of EDG No. 1 and steam and feed water rupture control system testing during the week ending August 2, 2014;
- Normally scheduled main turbine valve testing during the week ending September 13, 2014; and
- Normally scheduled control rod drive (CRD) exercise testing and associated unit power maneuvers during the week ending September 13, 2014.

The inspectors evaluated the following areas during the course of the control room 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 constituted a single quarterly inspection sample as defined in IP 71111.11–05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- The containment shield building and its condition/performance monitoring program; and
- The performance of plant doors, hatches, and associated equipment.

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 (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

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:

- Licensee actions in response to emergent issues associated with fire detection in containment during the week ending July 12, 2014 (see also Section 4OA3.1 of this report);
- Scheduled work activities involving setpoint adjustments to steam generator operating levels during the week ending August 9, 2014;
- Licensee actions in response to the failure of Reactor Coolant System (RCS) Loop 1 hot leg temperature instrumentation during the week ending August 16, 2014;
- Licensee actions in response to the failure of Mechanical Penetration Room No. 4 door latch mechanism (Door 308), which rendered both trains of the shield building emergency ventilation system (EVS) inoperable during the week ending August 23, 2014 (see also Section 4OA3.2 of this report); and
- Planned work associated with the rigging and heavy load lift/removal of the station's abandoned primary water storage tank during the week ending September 20, 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 five inspection samples as defined in IP 71111.13–05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Operability of the service water (SW) system following identification of missing material internal to valve SW 37, "No. 3 CCW Heat Exchanger Service Water Outlet Flow Control/Isolation Valve," as documented in CR 2014–13288, during the week ending August 23, 2014;
- Operability of High Pressure Injection (HPI) Pump No. 2 following identification that the installed motor was not capable of meeting all specifications associated with its purchase order, as documented in CR 2014–13985, during the week ending September 13, 2014;
- Operability evaluation associated with No. 2 CCW Heat Exchanger eddy current tube indications, as documented in CR 2014–13977, during the week ending September 13, 2014; and
- Operability of Reactor Protection System (RPS) Channel No. 4 following a spurious trip of the channel, as documented in CR 2014–14450, during the week ending September 20, 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 four 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:

- Functional testing of the electric fire pump following planned maintenance during the week ending September 6, 2014;
- Functional testing of the diesel fire pump following planned maintenance during the week ending September 13, 2014;
- Operational and functional testing of Auxiliary Feed Pump No.1 following emergent repairs to the turbine governor speed changer motor during the week ending September 20, 2014; and
- Operational and functional testing of No. 1 EDG following a planned and scheduled maintenance work window during the week ending September 27, 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 four PMT inspection samples as defined in IP 71111.19–05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

The inspectors reviewed the 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 steam and feedwater rupture control system functional testing for Logic Channels 1 and 3 during the week ending August 23, 2014 (Routine);
- Routine quarterly containment at-power inspections during the week ending August 30, 2014 (Routine);
- Normal periodic main turbine valve testing during the week ending September 13, 2014 (Routine); and
- Normal periodic monthly testing of No. 2 EDG during the week ending September 13, 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 four routine surveillance testing inspection samples as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on August 19, 2014, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Operations Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06–05.

b. Findings

No findings were identified.

## 2. RADIATION SAFETY

**Cornerstones: Occupational and Public Radiation Safety**

2RS7 Radiological Environmental Monitoring Program (71124.07)

The inspectors' activities documented in subsections 2RS7.1 through 2RS7.3 below constituted one complete inspection sample as defined in IP 71124.07–05.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to assess whether the Radiological Environmental Monitoring Program was implemented in accordance with the TS and Offsite Dose Calculation Manual. This review included reported changes to the Offsite Dose Calculation Manual with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, Inter-Laboratory Comparison Program, and analysis of data.

The inspectors reviewed the Offsite Dose Calculation Manual to identify locations of environmental monitoring stations.

The inspectors reviewed the USAR for information regarding the Environmental Monitoring Program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection "smart samples." The inspectors also reviewed audits and technical evaluations performed on the vendor laboratory if used.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report, to determine whether the licensee was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings were identified.

.2 Site Inspection

a. Inspection Scope

The inspectors walked down select air sampling stations and dosimeter monitoring stations to determine whether they were located as described in the Offsite Dose Calculation Manual and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and dosimeters were selected based on the most risk significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and dosimeters selected, the inspectors reviewed the calibration and maintenance records to evaluate whether they demonstrated adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors assessed whether the licensee had initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from

different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to determine whether environmental sampling was representative of the release pathways as specified in the Offsite Dose Calculation Manual and if sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the USAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler, lost dosimeter, or anomalous measurement to determine if the licensee had identified the cause and had implemented corrective actions. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

The inspectors selected SSCs that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and assessed whether the licensee had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection were retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the Offsite Dose Calculation Manual as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to evaluate whether the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to TS/Offsite Dose Calculation Manual where used for counting samples (i.e., the samples meet the TS/Offsite Dose Calculation Manual required lower limits of detection). The licensee uses a vendor laboratory to analyze the Radiological Environmental Monitoring Program samples so the inspectors reviewed the results of the vendor's quality control program, including the inter-laboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's inter-laboratory comparison program to evaluate the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the inter-laboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors

reviewed the licensee's determination of any bias to the data and the overall effect on the Radiological Environmental Monitoring Program.

b. Findings

No findings were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors assessed whether problems associated with the Radiological Environmental Monitoring Program were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. Additionally, they assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the Radiological Environmental Monitoring Program.

b. Findings

No findings were identified.

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

The inspectors' activities documented in subsections 2RS8.1 through 2RS8.7 below constituted one complete inspection sample as defined in IP 71124.08–05.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the USAR, the Process Control Program, and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of quality assurance audits in this area since the last inspection to gain insights into the licensee's performance and inform the "smart sampling" inspection planning.

b. Findings

No findings were identified.

.2 Radioactive Material Storage

a. Inspection Scope

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

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

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

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

b. Findings

No findings were identified.

.3 Radioactive Waste System Walkdown

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in the USAR, Offsite Dose Calculation Manual, and Process Control Program.

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

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the USAR were reviewed and documented in accordance with 10 CFR 50.59 as appropriate and to assess the impact on radiation doses to members of the public.

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

The inspectors evaluated whether the tank recirculation procedures provided sufficient mixing for select systems.

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

b. Findings

No findings were identified.

.4 Waste Characterization and Classification

a. Inspection Scope

The inspectors selected the following radioactive waste streams for review:

- Dry active waste;
- Solid spent resins; and
- Miscellaneous liquid.

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

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

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

b. Findings

No findings were identified.

.5 Shipment Preparation

a. Inspection Scope

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

b. Findings

No findings were identified.

.6 Shipping Records

a. Inspection Scope

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

- Shipment 2013–1006; B/W Water Filtration Skid; October 31, 2013;
- Shipment 2013–1011; Duraktek Filters; December 20, 2013;
- Shipment 2014–1042; Spent Resin Storage Tank Water; December 6, 2013;
- Shipment 2014–3028; WSI Equipment; March 11, 2014; and
- Shipment 2014–3062; Pipe Pieces; May 20, 2014.

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

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

## 4. OTHER ACTIVITIES

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

## 4OA1 Performance Indicator Verification (71151)

### .1 Mitigating Systems Performance Index–Heat Removal System

#### a. Inspection Scope

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

The inspectors' reviews constituted a single MSPI–Heat Removal System PI inspection sample as defined in IP 71151–05.

#### b. Findings

No findings were identified.

### .2 Mitigating Systems Performance Index–Residual Heat Removal System

#### a. Inspection Scope

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

The inspectors' reviews constituted a single MSPI–Residual Heat Removal System PI inspection sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index–Cooling Water Systems

a. Inspection Scope

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

The inspectors' reviews constituted a single MSPI–Cooling Water Systems PI inspection sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity PI for the period from the third 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 RCS chemistry samples, TS requirements, CRs, event reports, and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine whether any problems had been identified with the PI data collected or transmitted for this indicator, and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze an RCS sample. Documents reviewed are listed in the Attachment to this report.

The inspectors' reviews constituted a single RCS Specific Activity PI inspection sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness PI for the period from the third 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 assessment of the PI for occupational radiation safety to determine whether the indicator related data was adequately assessed and reported. The inspectors discussed with the radiation protection staff, the scope, and breadth of its data review, and the results of those reviews, to assess the adequacy of the licensee's PI data collection and analyses. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

The inspectors' reviews constituted a single Occupational Exposure Control Effectiveness PI inspection sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.6 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences PI for the period from the third 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 CAP database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

The inspectors' reviews constituted a single Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences 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 that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: 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.

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

.1 Event Notification 50263: Unusual Event Due to Smoke Alarm in Containment

a. Inspection Scope

On July 8, 2014, with the plant operating at full power, control room operators received a single smoke alarm from detector DS8676C located inside containment in an accessible passageway outside the steam generator enclosures at 9:25 a.m. Although there were no additional fire or smoke alarms, or any other plant parameters indicative of an actual fire or abnormal condition within containment, the control room crew was required by procedure to enter the site's emergency plan and declare an Unusual Event due to the inability to access the containment and confirm or deny the presence of an actual fire within 15 minutes. The NOUE was made by the licensee and state and local government officials notified at approximately 9:35 a.m.

The NRC Senior Resident Inspector and Resident Inspector both responded to the control room within minutes of the initial smoke alarm and immediately established telephone contact with NRC management personnel at NRC Headquarters in Maryland and at the NRC Region III office in Illinois. Based on the information provided by the inspectors at the site, NRC management personnel concluded that the event could be adequately handled within the NRC's normal inspection process, and that no escalated or enhanced NRC response was immediately required. The licensee quickly assembled a containment entry team to investigate and, following the necessary preparations and precautions, the team entered the containment at approximately 12:37 p.m. The NRC Resident Inspector accompanied the licensee's team during this containment entry. The containment entry team proceeded immediately to the area covered by smoke detector DS8676C, and found no signs of smoke, fire, or other abnormal containment conditions. The NOUE was terminated, and the licensee exited their emergency plan at approximately 1:28 p.m.

The inspectors reviewed the plant and licensee response to this event, including but not limited to:

- Status and performance of plant equipment;
- Emergency notifications made to state and local government agencies as required by 10 CFR 50.72; and
- Development and implementation of licensee response actions.

A licensee causal investigation into the event revealed that the most probable cause of the smoke detector DS8676C false alarm was likely due to a combination of dust and dirt buildup on the photoelectric smoke detector and some degradation of the photoelectric smoke detector due to cumulative radiation exposure. The licensee had entered this issue into their CAP under CR 2014–11432. Initial actions taken by the licensee included removal of smoke detector DS8676C from the fire alarm circuitry. The inspectors independently verified that the removal of this smoke detector from the alarm circuitry would require no additional compensatory measures by the licensee, as there

remained a sufficient number of working detectors in the area to satisfy the plant's fire hazards analysis. Long-term corrective actions planned by the licensee included the establishment of a periodic maintenance activity to proactively replace photoelectric smoke detectors located in higher radiation fields within containment on a more frequent (i.e., every other refueling outage, etc.) basis. 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.

b. Findings

No findings were identified.

.2 Event Notification 50381: Shield Building Boundary Door Failed to Latch

On August 18, 2014, with the plant in Mode 1 and operating at full power, a mechanical issue with the 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 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 re-evaluated 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 10-minute period, constituted an event or condition that could have prevented the fulfillment of a safety function and an 8-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 8-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 8-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 inspectors reviewed the response to this event, including but not limited to:

- Status and performance of plant equipment;
- Non-emergency notifications made to state and local government agencies as required by 10 CFR 50.72; and
- Development and implementation of licensee repair actions.

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. Further corrective actions planned by the licensee include 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.

In reviewing the event and the subsequent associated information, the inspectors determined that the design vulnerability that was inherent in the vendor-supplied latching mechanism that had been the cause of the problem did not constitute a performance deficiency that was reasonably within the licensee's ability to foresee or prevent. Consequently, there was no finding associated with the event.

As discussed in the NRC Enforcement Policy dated July, 9, 2013, Section 2.2.1, "Factors Affecting Assessment of Violations," Subsection (c), the severity level of a violation involving the failure to make a required report to the NRC depends largely on the significance and circumstances surrounding the matter that should have been reported. Additionally, the severity level of an untimely report, in contrast to no report, may be reduced. With respect to the 8-hour non-emergency report per the requirements of 10 CFR 50.72(b)(3)(v)(C and D) that was made several hours after the event on August 18, 2014, the inspectors determined that the untimely nature of the report constituted a minor violation of NRC requirements due to the minor safety significance of the underlying issue. Specifically, the loss of function of both trains of shield building EVS for approximately 10 minutes was determined by the inspectors to have been an event of minor safety significance; plant TS specifically allow for both trains of shield building EVS to be rendered inoperable for up to 24 hours by the inoperability of the shield building EVS pressure boundary. Violations of minor safety significance, such as this, are not subject to formal enforcement action in accordance with Section 2.3 of the NRC Enforcement Policy. 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.

.3 Event Notification 50252: Control Room Overhead Annunciator Malfunction

a. Inspection Scope

The inspectors reviewed the plant's response to a station annunciator system malfunction that caused all control room annunciator indications to be without power on May 21, 2014. This condition resulted in a loss of normal audible and visual plant condition assessment capabilities and was assessed as being a significant loss of assessment capabilities by the licensee. Backup assessment capability was maintained by functionality of the control room alarm printer.

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

- Status of plant equipment and plant condition backup assessment capability;
- Non-emergency notifications made to state and local government agencies as required by 10 CFR 50.72; and
- Development and implementation of licensee repair plans.

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.

b. Findings

Failure to Make a Timely 8-Hour Event Report Per 10 CFR 50.72(b)(3)(xiii)

Introduction

An NRC-identified finding of very low safety significance (Green) and an associated Severity Level IV NCV of the reporting requirements of 10 CFR 50.72(b)(3)(xiii) were identified following the inspectors' review of licensee corrective actions for a previous occurrence of a reportable condition that took place on May 26, 2014. That event was reported to the NRC as required (Event Notification 49546), and the licensee developed applicable corrective actions within their CAP. While reviewing the circumstances surrounding that issue, the inspectors identified that on May 21, 2014, the licensee's control room overhead annunciator system had suffered a similar malfunction. The licensee's initial reviews of the May 21, 2014, issue, however, determined that the matter was not reportable, and no report to the NRC Operations Center was made at that time.

Description

On May 21, 2014, at 3:36 a.m., the control room overhead annunciators malfunctioned during the performance of an approved maintenance activity intended to isolate the preferred (i.e., normal) annunciator power supply. A failure with a disconnect switch prevented the annunciator alternate power supply from powering the overhead annunciator system, and all power to the annunciators was lost. Control room personnel successfully restored the annunciator preferred power supply at 3:49 a.m., clearing the condition.

Licensee personnel initially determined the event to not be reportable in accordance with 10 CFR 50.72(b)(3)(xiii), as an event that had resulted in a major loss of emergency assessment capability. Following discussions with the inspectors, the licensee reevaluated their initial assessment and determined that the issue had met the reporting requirements of 10 CFR 50.72(b)(3)(xiii), as an event that had resulted in a major loss of emergency assessment capability. The licensee completed the required event notification to the NRC at 10:34 a.m., on July 3, 2014, significantly after the 8-hour time required by the regulations. During the short period that the control room overhead annunciator system was disabled, backup assessment capability was determined to have been functional and provided by the control room alarm printer, as described in the licensee's procedures.

The licensee had entered the event that occurred on May 21, 2014, into their CAP as CR 2014–09280, but initially determined that the event did not meet any NRC reporting requirements. The licensee entered the event that occurred on May 26, 2014, into their CAP as CR 2014–09494, but did not identify the May 21, 2014, event as also reportable during their extent-of-condition review. Following discussions with the inspectors, the licensee revised their initial assessment regarding the reportability of the May 21, 2014, event and entered that issue into their CAP as CR 2014–11234. Corrective actions planned by the licensee include the performance of a gap analysis in the area of regulatory reportability and additional regulatory reportability training for licensed operators and other key members of the licensee's plant staff.

Analysis

The inspectors determined that, per IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” the licensee's failure to initially determine that the loss of control room annunciators on May 21, 2014, represented a major loss of emergency assessment capability and was reportable under the requirements of 10 CFR 50.72(b)(3)(xiii). This constituted a performance deficiency that was reasonably within the licensee’s ability to foresee and correct and that should have been prevented. Because the performance deficiency involved a violation that could have impacted the regulatory process, the violation was dispositioned by the inspectors using the traditional enforcement process.

The inspectors determined that the performance deficiency was of more than minor safety significance because the underlying technical issue, which affected the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, was of more than minor safety significance. Specifically, the inspectors had previously determined that the underlying technical issue surrounding this event involved a finding of very low safety significance (Green), and documented that finding in NRC IR 05000346/2014003 (FIN 05000346/2014003–05; ADAMS Accession No.ML14212A468). That issue, involving the licensee's failure to assign appropriate work priority to corrective actions associated with their annunciator system, resulted in additional malfunctions of the control room overhead annunciator system, one of which was the event that occurred on May 21, 2014.

The inspectors evaluated the finding using IMC 0609, Appendix A, “The Significance Determination Process for Findings-At-Power.” Using Exhibit 2, which contains the screening questions for the Mitigating Systems cornerstone of reactor safety, the

inspectors determined that the finding screened as very low safety significance (Green) because:

- It was not a deficiency affecting the design or qualification of the control room overhead annunciator alarm system;
- Since the backup alarm functions provided by the control room alarm printer and plant computer system were unaffected and remained intact, the deficiency did not represent a total loss of system or function;
- It did not represent the loss of function for any TS system, train, or component beyond the allowed TS outage time; and
- It did not represent an actual loss of function of any non-TS trains of equipment designated as high safety significant in accordance with the licensee's maintenance rule program.

This finding was determined to have a cross-cutting aspect in the area of human performance, documentation, because the licensee's reference material related to NRC event reporting that was available to the on-shift operations crew on May 21, 2014, did not contain comprehensive guidance relative to the event that occurred. (H.7)

Enforcement

Title 10 CFR 50.72(b)(3)(xiii) requires, in part, that operating reactor licensees shall notify the NRC within 8-hours of the occurrence of any event or condition that represents a major loss of emergency assessment capability. Contrary to this requirement, on May 21, 2014, the licensee failed to report within 8-hours the loss of power to the station's overhead annunciator system, which constituted a major loss of emergency assessment capability. Because the performance deficiency involved a violation that could have impacted the regulatory process, it is dispositioned using the traditional enforcement process.

As discussed in the NRC Enforcement Policy dated July, 9, 2013, Section 2.2.1, "Factors Affecting Assessment of Violations," Subsection (c), the severity level of a violation involving the failure to make a required report to the NRC depends largely on the significance and circumstances surrounding the matter that should have been reported. Additionally, the severity level of an untimely report, in contrast to no report, may be reduced. With respect to NRC Event Notification 50252, the 8-hour non-emergency report per the requirements of 10 CFR 50.72(b)(3)(xiii) that was made on July 3, 2014, several weeks after the event on May 21, 2014, the inspectors determined that the untimely nature of the report constituted a violation of NRC requirements of very low safety significance due to corresponding very low safety significance of the underlying issue. Specifically, consistent with the "Violation Examples" in Section 6.0 of the NRC Enforcement Policy, a failure to make a report to the NRC required under 10 CFR 50.72 is a Severity Level IV violation. (NRC Enforcement Policy dated July, 9, 2013, Section 6.9(d)(9))

Because this violation was of very low safety significance and it was entered into the licensee's CAP as CR 2104–11234, the violation is being treated as a Severity Level IV NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000346/2014004–02; Failure to Properly Perform Required Fire Watch (Section 1R05.1))**

.4 (Closed) Licensee Event Report 05000346/2014–001–00: Manual Initiation of the Reactor Protection System Due to Unexpected Indication of Control Rod Movement

On May 4, 2014, the plant was in Mode 3 with various control CRD pre-startup tests being performed. Group 8 axial power shaping rods, which are not part of the RPS and do not insert following a reactor trip signal, were being manipulated from the control room for CRD program verification testing. With CRD 8–8 selected for manipulation at the reactor controls, plant operators observed outward movement on the position indication for CRD 4–9 instead of CRD 8–8 when a "rods out" command was initiated. Control room operators immediately halted the test evolution and gave a "rods in" command at the reactor controls to return the indication for CRD 4–9 to the fully inserted position. The decision was then made by the control room crew to conservatively de-energize the CRD system by manually tripping the reactor from the control room. There was no control rod response; and none was expected following the initiation of the reactor trip, as all Group 1 through 7 CRD mechanisms were already fully inserted.

After the event, troubleshooting revealed that five control rods had improper indication, such that the position indication for CRD 'x' would show movement during the manipulation of CRD 'y' instead. Further investigation by the licensee revealed that this issue could be traced back to maintenance that had been performed during the course of the current refuel outage on electrical instrumentation containment penetration PCC5V. Licensee technicians rewiring the penetration had inadvertently mixed the signals passing through the penetration for five CRD position indication channels. The licensee entered the issue into their CAP as CR 2014–08263, and initial corrective actions were developed by the licensee and the wiring in question was reworked. The following day, on May 5, 2014, operations personnel satisfactorily completed the CRD program verification testing that had been interrupted.

Initially, licensee personnel had determined that the event did not require any non-emergency notifications in accordance with 10 CFR 50.72 requirements. However, following their decision to report the event that occurred on May 5, 2014, (see Section 4OA3.5 below) under the requirements of 10 CFR 50.72(b)(3)(iv)(A) as a valid actuation of the plant's RPS, licensee personnel reevaluated their decision in this matter. On May 8, 2014, the licensee concluded that the control room crew's initiation of a manual reactor trip on May 4, 2014, also constituted a valid actuation of the plant's RPS and an 8-hour non-emergency report to the NRC per 10 CFR 50.72(b)(3)(iv)(A) was required. The licensee completed this report (NRC Event Notification No. 50097), albeit several days after the 8-hour time requirement had passed, on May 8, 2014, at 5:46 p.m.

The inspectors previously performed a review of this event and documented the results of that review in NRC IR 05000346/2014003, Section 4OA3.2 (ADAMS Accession No. ML14212A468). 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 performance of plant operators in the Control Room and in the field;
- The potential for any generic issues, including those potentially requiring reporting under 10 CFR Part 21;
- The licensee's termination from their trip response procedures and transition to normal shutdown plant operations;

- The licensee's completed cause evaluation report and additional corrective actions associated with the event; and
- The accuracy of the information provided by the licensee in the LER.

Additional corrective actions planned or taken by the licensee included the establishment of additional guidance in the site's post-maintenance test manual regarding the need for functional testing of CRD containment penetrations after maintenance, as well as additional training for licensed operators and other key plant personnel on regulatory reporting requirements.

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.

.5 (Closed) Licensee Event Report 05000346/2014–002–00: Manual Initiation of the Reactor Protection System Due to Disconnected Cooling of a Control Rod Drive

On May 5, 2014, the reactor was in a hot shutdown (Mode 3) condition and performance of control rod assembly insertion time testing was in progress. In parallel with this activity, maintenance personnel were working in containment on a position indication tube for the control rod in core location N12. Due to the congested nature of the work location, the maintenance personnel had to move the flexible stainless steel cooling water hoses for several CRD mechanisms in order to gain proper access to the work area. During this activity, a quick disconnect unknowingly became disengaged and cooling water flow to nearby CRD 4–3 in core location L14 was isolated. The fitting, albeit now loose, stayed together and an integral double check valve design ensured that water did not leak from either end.

Plant operators in the control room quickly identified a rapidly rising temperature on CRD 4–3. With CRD 4-3 temperature at 180°F and still rising, control room operators initiated a manual reactor trip to de-energize the CRD mechanism and arrest the temperature rise in accordance with plant procedures. Only safety Group 2 control rods were partially withdrawn for the testing that was being performed; all other control rods were fully inserted at the time of the event. Upon initiation of the manual reactor trip, all partially withdrawn control rods fully inserted as expected. The highest temperature noted on CRD 4–3 was 189°F. Operations personnel, suspecting that the quick disconnect in the cooling line for CRD 4–3 had become disengaged, entered containment and restored the cooling water to CRD 4–3 in short order by resetting the connection. Within several minutes of having the cooling water restored, CRD 4–3 temperatures were back to nominal values and consistent with the other CRDs in its group. The licensee entered the issue into their CAP as CR 2014–08344.

Several hours after the event, the inspectors engaged with licensee management to discuss the licensee's conclusions regarding the need for any non-emergency notifications per applicable 10 CFR 50.72 requirements. Following these discussions, the licensee revised their conclusions and determined that the event required an 8-hour non-emergency report to the NRC per 10 CFR 50.72(b)(3)(iv)(A), as a valid actuation of the plant's RPS. This report (NRC Event Notification No. 50086) was completed by the

licensee at 9:17 p.m. on the day of the event, and within the 8-hour timeframe specified by NRC requirements.

The inspectors previously performed a review of this event and documented the results of that review in NRC IR 05000346/2014003, Section 4OA3.1 (ADAMS Accession No. ML14212A468). In addition to those actions previously performed, in response to receipt of this LER the inspectors completed additional reviews that included, but were not limited to:

- The performance of plant operators in the Control Room and in the field;
- The potential for any generic issues, including those potentially requiring reporting under 10 CFR Part 21;
- The licensee's termination from their trip response procedures and transition to normal shutdown plant operations;
- The licensee's completed cause evaluation report and additional corrective actions associated with the event; and
- The accuracy of the information provided by the licensee in the LER.

Additional corrective actions planned or taken by the licensee included the establishment of additional guidance in the maintenance instructions for working on CRD position indication tubes discussing the susceptibility for losing CRD cooling and additional actions for the restoration of cooling should it be interrupted.

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.

## 4OA6 Management Meetings

### .1 Exit Meeting Summary

On October 7, 2014, the inspectors presented the inspection results to the Site Vice President, Mr. R. Lieb, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection period was returned to the licensee.

### .2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the area of Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation with Mr. K. Byrd, Director of Site Engineering, on July 11, 2014; and
- The inspection results for the areas of Radiological Environmental Monitoring; and RCS Specific Activity, Occupational Exposure Control Effectiveness, and Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences PI Verifications with Mr. T. Summers, Director of Site Operations, on September 11, 2014.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

R. Lieb, Site Vice President
K. Byrd, Director, Site Engineering
G. Cramer, Manager, Site Protection
J. Cuff, Manager, Training
J. Cunnings, Manager, Site Maintenance
A. Dawson, Manager, Chemistry
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
T. Summers, Director, Site Operations
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
G. Wolf, Supervisor, Regulatory Compliance
K. Zellers, Supervisor, Reactor Engineering

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

| | | |
|---|---|---|
| 05000346/2014004–01 | NCV | Failure to Properly Perform Required Fire Watch (Section 1R05.1) |
| 05000346/2014004–02 | NCV | Failure to Make a Timely 8-Hour Event Report Per 10 CFR 50.72(b)(3)(xiii) (Section 4OA3.3) |

Closed

| | | |
|---|---|---|
| 05000346/2014004–01 | NCV | Failure to Properly Perform Required Fire Watch (Section 1R05.1) |
| 05000346/2014004–02 | NCV | Failure to Make a Timely 8-Hour Event Report Per 10 CFR 50.72(b)(3)(xiii) (Section 4OA3.3) |
| 05000346/2014001–00 | LER | Manual Initiation of the Reactor Protection System Due to Unexpected Indication of Control Rod Movement (Section 4OA3.4) |
| 05000346/2014002–00 | LER | Manual Initiation of the Reactor Protection System Due to Disconnected Cooling of a Control Rod Drive (Section 4OA3.5) |

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:
- 2011-89062; K Bus Lost Due to Sheet Metal Debris in Switchyard

Procedures:
- NOP-OP-1012; Material Readiness and Housekeeping Inspection Program; Revision 7
- RA-EP-02810; Tornado or High Winds; Revision 11

1R04 Equipment Alignment

Condition Reports:
- 2012-17857; Valve Wrench Used on FP206
- 2013-02126; Excessive Corrosion on Fire Protection Piping
- 2013-13262; Hose Station 36 (HCS36) Damaged From Hose Being Charged
- 2013-13443; Fire Protection Valves Leaking By After Performing Fire Protection System Flushing
- 2013-13462; Unplanned Activation of Fire System Deluge Sprinklers at the ERF Power Structure High Voltage Switchgear and Diesel Rooms
- 2013-13809; Portions of the Fire Protection System Could not Be Flushed as Required by DB-FP-04033 Due to Continuing Maintenance Condition of FP133
- 2014-01140; SBODG Lube Oil Cooler, Oil Leak
- 2014-00983; BD Transformer Deluge Actuated During Testing of Seal Oil Deluge System
- 2014-09184; SBODG Has Oil Leak From Crank Case Cover
- 2014-10945; DB-E214, SBODG Lube Oil Cooler Minor Oil Leaks
- 2014-10106; FP329 Has a Large Packing Leak
- 2014-10489; Diesel Fire Pump Coolant Leak
- 2014-10537; #2 EDG has Oil Leak on Governor Casing
- 2014-11888; 4P Batteries Capacity Dropped by More than 10%
- 2014-11948; BF1801 Motor Starter Carbon Discoloration
- 2014-11955; Oil Leak Found on SBODG
- 2014-12504; Fire Protection 5-Year Flow Test Results Do Not Meet Acceptable Range For 'C' Value
- 2014-12175; Sprinkler Heads in CCW Pump Room Found Damaged
- 2014-13024; PA-DB-14-02: Large Number of Priority 600 Orders Associated with Fire Protection System Are Unscheduled
- 2014-13026; PA-DB-14-02: Fire Protection Valve Leaking Above a Cable Tray BLWD20
- 2014-14636; SBODG Oil and Coolant Temperature Low – Breaker BF8101 Scorching

Procedures:
- DB-FP-04001; Annual Fire Hydrant Inspection; Revision 8
- DB-FP-04002; Fire Hose House Inspections; Revision 6
- DB-FP-04007; Semi-Annual Fire Hydrant Inspection; Revision 4

- DB-FP-04012; 3-Year Fire Hose Station / Connection Valve Operability; Revision 4
- DB-FP-04014; Fire Hose Station Inspections; Revision 9
- DB-FP-04015; Fire Hose Hydrostatic Tests, Rerack, and Visual Inspections; Revision 9
- DB-FP-04031; Quarterly Fire Valve Alignment Verification; Revision 10
- DB-FP-04033; Annual Fire Protection System Flush; Revision 9
- DB-FP-04047; Diesel Fire Pump Test; Revision 14
- DB-FP-04048; Electric Fire Pump Test; Revision 12
- DB-FP-04049; Diesel Fire Pump Tests; Revision 14
- DB-FP-04050; Electric Fire Pump Tests; Revision 8
- DB-OP-06012; Decay Heat and Low Pressure Injection System Operating Procedure; Revision 61
- DB-OP-06316; Diesel Generator Operating Procedure; Revision 56
- DB-OP-06334; Station Blackout Diesel Generator Operating Procedure; Revision 22
- DB-OP-06610; Station Fire Suppression Water System; Revision 32
- DB-SC-04000; Station Blackout Diesel Generator Lined-Up To Supply Essential Bus; Revision 4

Drawings and Prints:
- OS-0004; Sheet 1; Decay Heat Removal / Low Pressure Injection System; Revision 52
- OS-0004; Sheet 2; Decay Heat Removal / Low Pressure Injection System; Revision 7
- OS-041A; Sheet 1; Emergency Diesel Generator Systems; Revision 32
- OS-041A; Sheet 2; Emergency Diesel Generator Systems; Revision 32
- OS-041B; Emergency Diesel Generator Air Start/Engine Air System; Revision 42
- OS-041C; Emergency Diesel Generator Diesel Oil System; Revision 16
- OS-041D; Station Blackout Diesel Generator Lube Oil and Jacket Water; Revision 14
- OS-041E; Station Blackout Diesel Generator Air Start/Engine Air System; Revision 17
- OS-041F; Station Blackout Diesel Generator Electrical Control and Fuel Oil System; Revision 5
- OS-0047A; Sheet 1; Station Fire Protection System; Revision 25
- OS-0047A; Sheet 2; Fire Protection System; Revision 18
- OS-0047A; Sheet 3; Fire Protection System; Revision 5
- OS-0047A; Sheet 4; Fire Protection System; Revision 12
- OS-0047A; Sheet 5; Station Fire Protection System; Revision 17
- OS-0047B; Sheet 1; Fire Suppression System; Revision 5
- OS-0047B; Sheet 2; Fire Suppression System; Revision 6
- OS-0047B; Sheet 3; Fire Suppression System; Revision 5
- OS-0047B; Sheet 4; Fire Suppression System; Revision 20
- OS-0047B; Sheet 5; Fire Suppression System; Revision 15
- OS-0047B; Sheet 6; Fire Suppression System; Revision 10
- OS-0047B; Sheet 7; Fire Suppression System; Revision 1
- M-017A; Diesel Generators; Revision 19
- M-017B; Diesel Generators Air Start; Revision 47
- M-017C; Fuel Oil; Revision 30
- M-017D; Station Blackout Diesel Generator; Revision 16
- M-033B; Decay Heat Train 1; Revision 56
- M-033C; Decay Heat Train 2; Revision 27
- M-036A; Component Cooling Water System; Revision 30
- M-036B; Component Cooling Water System; Revision 39

Notifications:
- 600722225; C3024 Electric Fire Pump Panel Has Low Battery; 11/30/2011

- 600773943; C3024 Display Shows "Replace Battery"; 8/30/2012
- 600797805; FP206 Leaks By – Valve Wrench Ineffective; 11/16/2012
- 600828707; Oil Leak Electric Fire Pump Thermocouple; 4/12/2013
- 600834071; Electric Fire Pump: No Cover on Inboard Shaft; 5/10/2013
- 600869574; Water Leaking Into Diesel Fire Pump Room; 12/18/2013
- 600885219; Electric Fire Pump PI20092 Not Indicating Properly; 3/13/2014

1R05 Fire Protection

Condition Reports:
- 2013-02276; Loss of Indication and/or Make-Up System Valves Required for Safe Shutdown as a Result of Changes from ECP 11-0512
- 2014-12937; Door 308 (Mechanical Penetration Room 4) Closure Defective
- 2014-12976; Safety Related Fire Brigade Equipment Missing from Service Building No. 2
- 2014-13175; Penetration 314-E-044 / 326-W2-015 Unsatisfactory
- 2014-13362; Ceramic Fiber on Cable Tray BLF C09 is Loose or Missing. Located in No. 1 Mechanical Penetration Room
- 2014-13381; The Station Did Not Complete Required Fire Watch Posts on Several Occasions Between 11 August and 20 August 2014
- 2014-13647; Fire Watch for Room 406 Not Completed Within Procedural Timeframe
- 2014-13816; Leaking 9V Battery Received from Vendor

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-04005; Fire Brigade Equipment Quarterly Inspection; Revision 13
- DB-ME-09500; Installation and Termination of Electrical Cables; Revision 28
- DB-ME-09512; Installation Procedure for Raceways Carrying Electrical Cables; Revision 5

Pre-Fire Plans:
- PFP-AB-208; No. 1 Mechanical Penetration Room and Pipeway Area, Rooms 202, 208 and 208C, Fire Area AB; Revision 6
- PFP-AB-303; No. 3 Mechanical Penetration Room, Rooms 303 and 303PC, Fire Area AB; Revision 6
- PFP-AB-314; No. 4 Mechanical Penetration Room, Rooms 115CC, 314 and 314CC, Fire Area A; Revision 8
- PFP-AB-323; High Voltage Switchgear Room B, Room 323, Fire Area Q; Revision 5
- PFP-AB-325; High Voltage Switchgear Room A, Room 325, Fire Area S; Revision 5

Drawings:
- A-222F; Fire Protection General Floor Plan El. 565'-0"; Revision 11
- A-223F; Fire Protection General Floor Plan El. 585'-0"; Revision 24

FENOC Business Practices:
- DBBP-OPS-0036; B.5.b Equipment Inventory; Revision 3

Other:
- Fire Hazard Analysis Report; Revision 25

1R06 Flood Protection Measures

Condition Reports:
- 2014-12781; Sump Pump Removed From Electrical Manhole MH3005 Did Not Function
- 2014-13025; Sump Pump in Electrical Manhole MNH3041 Found Not Working
- 2014-13340; Unsat Manhole Inspection
- 2014-13343; Unsat Manhole Inspection
- 2014-13344; Manhole Inspection Unsat
- 2014-13346; Manhole Inspection Unsat
- 2014-13347; Unsat Manhole Inspection
- 2014-13348; Unsat Manhole Inspection

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

Work Orders:
- 200557622; Replace Sump Pump in Electrical Manhole MH3041; 8/13/2014
- 200557623; Replace Sump Pump in Electrical Manhole MH3042; 8/15/2014

Prints and Drawings:
- E-0304; Electrical Site Plan; Revision 44

Reference Manuals:
- NORM-ER-3112; Cable Monitoring; Revision 2

1R07 Heat Sink Performance

Condition Reports:
- 2014-08999; Rescheduling of the Cleaning/Inspection and Eddy Current Testing of E22-2 Component Cooling Water Heat Exchanger 2
- 2014-12460; CCW Heat Exchanger Performance Test DB-PF-04706 Did Not Meet Initial Conditions
- 2014-13977; Eddy Current Testing Identified Tube Indications in the Component Cooling Water Heat Exchanger No. 2 Requiring Plugging

Procedures:
- DB-PF-04705; Component Cooling Water System Heat Exchanger 2; Revision 10
- DB-OP-06262; Component Cooling Water System Procedure; Revision 35

Work Orders:
- 200352460; PM 6579 E22-2 Eddy Current Inspection; 8/25/2014
- 200423683; PM 6584 E22-1 Eddy Current Test; 8/25/2014
- 200470004; PM 0077 E22-2 Clean & Inspect CCW HX 2; 8/25/2014
- 200472616; PF4705-001 05.001 E22-2 CCW HX 2 Perform; 8/14/2014

Prints and Drawings:
- M-036A; Component Cooling Water System; Revision 30
- M-036B; Component Cooling Water System; Revision 40
- M-036C; Component Cooling Water System; Revision 32
- M-041A; Service Water Pumps and Secondary Service Water System; Revision 30

- M-041B; Primary Service Water System; Revision 71
- M-041C; Service Water System For Containment Air Coolers; Revision 47

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

Condition Reports:
- 2014-11238; ODMI: Operational Guidance with Axial Power Shaping Rod (APSR) 8-2 (Core Location D-10) Uncoupled, Revision 01
- 2014-11432; Containment Fire Alarm: Containment East Passage FDZ–410 DS8676C CB–410 Is In Alarm
- 2014-12980; Simulator Computer Point Not On Scan
- 2014-14588; LCO 3.3.18 Not Initially Entered Upon Discovery of the Loss of AFP 1 Governor Control

Procedures:
- PFP-CB-410; Containment Building, East Elevation 603' and Valve Room Elevation 636', Fire Area 'D'; Revision 4
- DB-OP-01101; Containment Entry; Revision 12
- DB-OP-02501; Serious Station Fire; Revision 23
- DB-OP-06401; Integrated Control System Operating Procedure; Revision 23
- DB-OP-06621; Simplex Fire Alarm Panels; Revision 6
- DB-OP-06902; Power Operations; Revisions 45 and 46
- DB-MI-03014; Channel Functional Test of Reactor Trip Breaker 'C', RPS Channel 4 Reactor Trip Module Logic, and ARTS Channel 4 Output Logic; Revision 29
- DB-MI-03211; Channel Functional Test of SFRCS Actuation Channel 1 Logic for Mode 1; Revision 19
- DB-MI-03245; Channel Functional Test and Device Calibration of SFRCS Steam Generator Level Inputs 83C–ISLSP9A6, A7, B8, and B9 to Actuation Channel 1; Revision 16
- DB-SC-03070; Emergency Diesel Generator 1 Monthly Test; Revision 35
- DB-SC-03272; Control Rod Exercising Test; Revision 4
- DB-SS-04150; Main Turbine Stop Valve Test; Revision 13
- DB-SS-04151; Main Turbine Control Valve Test; Revision 15
- DB-SS-04152; Main Turbine Combined Intermediate Valves Test; Revision 10
- RA-EP-01600; Unusual Event; Revision 8
- NOP-OP-1002; Conduct of Operations; Revision 9
- NOP-OP-1015; Event Notifications; Revision 0
- 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

FENOC Business Practices:
- DBBP-TRAN-0014; License Requirements for Licensed Operators; Revision 10
- DBBP-TRAN-0021; Simulator Configuration Control; Revision 4
- DBBP-TRAN-0502; Development of Continuing Training Simulator Evaluation; Revision 11
- NOBP-TR-1112; FENOC Conduct of Simulator Training and Evaluation; Revision 2
- DBBP-OPS-1013; Control of Time Critical Actions; Revision 2

1R12 Maintenance Effectiveness

Condition Reports:
- 2013-14097; Shield Building Laminar Crack Extends
- 2014-12414; Appendix R Fire Door Needs Replacement
- 2014-12886; Door 428 (Low Voltage Switch Gear 1) Will Not Unlock From Turbine Building Side
- 2014-12937; Door 308 (Mechanical Penetration Room # 4) Closure Defective
- 2014-13180; Door 138 Not Functioning As Designed
- 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
- 2014-13391; Trend CR Only on Vital Area Doors Not Being Secured as Part of SN-SA-2014-0541
- 2014-13432; Door 308 Did Not Operate Properly
- 2014-13481; Door Electric Strike and Mortise Lock UL Compatibility Issue
- 2014-13487; Door 308 – Replacement Door Unit Procurement
- 2014-13507; Door 119A Does Not Latch
- 2014-13754; Door 323 (A High Voltage Switchgear Room 325) Will Not Secure
- 2014-13773; Door 111 (Water Treatment Building To SW Tunnel) Not Working as Designed
- 2014-13805; Door 493 Not Operating as Designed
- 2014-13933; Discrepancy Between Installed and Specified Swing of Door 219
- 2014-14352; Door 111 Will Not Close Under Its Own Power

Procedures:
- EN-DP-01511; Design Guidelines For Maintenance Rule Evaluation of Structures; Revision 2

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:
- 2013-13278; Door 208 Failed to Latch Closed
- 2013-14306; Door 308 Mechanical Penetration Room 4 Door Lock Not Working
- 2014-05877; Door 308 Not Functioning Properly
- 2014-06702; Door 308 Mechanical Issues Fingers Extracted Will Not Secure
- 2014-08772; SG Operate Levels High
- 2014-11432; Containment Fire Alarm: Containment East Passage FDZ–410 DS8676C CB-410 Is In Alarm
- 2014-12605; Computer Point T720 RC Loop 1 HLG NR Temp RC3B3 Failed Low
- 2014-12937; Door 308 (Mechanical Penetration Room 4) Closure Defective
- 2014-13211; Door 308, Broken Door Latch
- 2014-13278; Door 308 Failed to Latch Closed
- 2014-13353; Door 308 Door Pulls Not Identified in Specification B-011N
- 2014-13432; Door 308 Did Not Operate Properly
- 2014-13481; Door Electric Strike and Mortise Lock UL Compatibility Issue
- 2014-13487; Door 308 – Replacement Door Unit Procurement

Procedures:
- PFP-CB-410; Containment Building, East Elevation 603' and Valve Room Elevation 636', Fire Area 'D'; Revision 4
- DB-MI-04213; String Check of 63A-ISLSP09A1 Steam Generator 2 Operate Level; Revision 7
- DB-MI-04215; String Check of 63A-ISLSP09B1 Steam Generator 1 Operate Level; Revision 7
- DB-OP-01101; Containment Entry; Revision 12
- DB-OP-02501; Serious Station Fire; Revision 23
- DB-OP-06401; Integrated Control System Operating Procedure; Revision 23
- DB-OP-06621; Simplex Fire Alarm Panels; Revision 6
- RA-EP-01600; Unusual Event; Revision 8

Drawings:
- C-1596; Door Functional List; Revision 6
- J-107; Sheet 4; Reactor Coolant Temp Monitor Channel A NNI Channel 3 RPS; Revision 2
- M-530-437-3, Sheet 1; SASS Wiring Loop 1 T–Hot; Revision T3

FENOC Business Practices:
- NOBP-OP-0007; Conduct of Infrequently Performed Tests or Evolutions; Revision 5

Engineering Change Packages (ECPs):
- 13-0195-001; Removing the Primary Water Storage Tank; Revision 0
- 14-0376-000; Change SFRCS High Level Trip and ICS High Level Limit on Steam Generators; Revision 0
- 14-0376-009; Change Integrated Control System High Level Limit from 90% to 92%; Revision 0
- 14-0550-000; ECP 14-0550-001 and 002 TM Computer Point T720, TERC3B3 Input, TM to Disconnect Loop 1 Hot Leg RTD; Revision 0
- 14-0550-001; Install TM: Disconnect TERC3B3 from TTRC3B3

Notifications:
- 600433356; Smoke Detector DS8676C; 1/1/2008

Work Orders:
- 200295229; DS8676C – Replace Detector; 1/20/2008
- 200599567; SUB013-14 Contingent Door Repair; 8/12/2014
- 200602828; ECP 14-0376-009: Setpt Chgs: ICS/NNI; 8/6/2014
- 200609920; Remove Primary Water Storage Tank; 9/17/2014
- 200614350; T720 TTRC3B3 Failure Low; 8/11/2014
- 200614442; Install TM ECP 14-0550-001 to Remove Input Signal to TTRC3B3; 8/12/2014

Other:
- Davis-Besse System Health Report 2014 First Half
- Fire Detector – Radiation Exposure Testing; The University of Michigan Electronics Services Test Report

1R15 Operability Determinations and Functionality Assessments

Condition Reports:
- 2014-09117; SW 37 Show Significant Leak By
- 2014-13172; Spur Gear Box Housing Cracked During Disassembly of SW37 Valve Limitorque

- 2014-13288; Half of SW37 Valve Liner was Discovered Missing When Disassembled (Unrecovered FME)
- 2014-13293; CR Not Initiated in Timely Fashion for SW37 Valve Liner
- 2014-13503; SW37 External Position Scale Discrepancy Could Cause Confusion or Leak By
- 2014-13977; Eddy Current Testing Identified Tube Indications in the Component Cooling Water Heat Exchanger No. 2 Requiring Plugging
- 2014-14077; CCW Train 2 Exceeded Maintenance Rule Limit
- 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
- 2014-14450; Reactor Protection System (RPS) Channel 4 Tripped on High Flux

Procedures:
- DB-PF-04705; Component Cooling Water System Heat Exchanger 2; Revision 10
- DB-PF-06703; Miscellaneous Operating Curves; Revision 22

Drawings:
- M-0041A; Service Water Pumps and Secondary Service Water System; Revision 30
- M-0041B; Primary Service Water System; Revision 72
- OS-0020; Sheet 1; Service Water System; Revision 94
- OS-0020; Sheet 2; Service Water System; Revision 51

Notifications:
- 600724048; Provide Tube Plugging Criteria; 12/11/2011
- 600918745; Simple Troubleshooting For RPS Channel 4 High Flux Trip; 9/17/2014

Work Orders:
- 200352460; PM 6579 E22-2 Eddy Current Inspection; 8/25/2014
- 200423683; PM 6584 E22-1 Eddy Current Test; 8/25/2014
- 200470004; PM 0077 E22-2 Clean & Inspect CCW HX 2; 8/25/2014
- 200604679; SW37 Replace Valve; 8/25/2014

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

1R19 Post-Maintenance Testing

Condition Reports:
- 2014-13816; Leaking 9V Battery Received from Vendor
- 2014-14198; Diesel Fire Pump Engine Oil Filter Housing Leaking

- 2014-14402; WW1437 Diesel Fire Pump Maintenance Outage Post Maintenance Improvement Opportunities
- 2014-14548; HIS520A Not Controlling AFPT 1 Governor
- 2014-14620; PA-DB-14-03: Operations Response to Unplanned Unavailability of AFPT 1
- 2014-14628; AFP 1 – Identified Additional Spring in Spare Governor Not Found in Installed Governor
- 2014-14733; EDG 1 – Cylinder Head to Liner Gasket Area Conditions of Refurbished Power Packs
- 2014-14735; EDG 1 – Cabinet C3617 Rear Cover Mounting Hole Missing Threads
- 2014-14770; Missing Flat Washer on Over Speed Trip Mechanism for EDG 1 Cylinder No. 8
- 2014-14772; Broken Button Clips on 5 Injector Rocker Arms
- 2014-14806; EDG No. 1 Fuel Injector Button Clips Hardware Nonconformance Resolution
- 2014-14808; Shoulder Gap on Bolt for EDG 1 Turbocharger Scroll to Air Duct Flange
- 2014-14839; Discrepancy Between LT 4891 (emergency Diesel Generator Fuel Oil Storage Tank 1-1 Level) and Manual Measurement
- 2014-14844; Bent Piston Cooling Pipe Found During Once Through Inspection on EDG No. 1
- 2014-14908; EDG No. 1 Fuel Leak on DO34, Diesel Generator 1 DC Motor-Driven Fuel Pump Check Valve, When System Was Started
- 2014-14913; Testing of EDG 1 Sequencer for SFAS Channel 3 Failed Acceptance Criteria
- 2014-14927; EDG 1 Time Pressure
- 2014-14936; EDG 1 Locked Out Due to Failure to Start During Post-Maintenance Testing
- 2014-14957; EDG 1 Cylinders 2 and 9 Reading Low Temperatures on the ALNOR
- 2014-14973; Procedural Enhancement Needed for Resetting EDG Lockout After Failure to Start

Procedures:
- DB-FP-04047; Diesel Fire Pump Test; Revision 14
- DB-FP-04048; Electric Fire Pump Test; Revision 12
- 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 35
- DB-OP-02043; Emergency Diesel Generator 1 Alarm Panel 43 Annunciators; Revision 13
- DB-OP-06316; Diesel Generator Operating Procedure; Revision 57
- DB-SP-04150; AFP 1 Monthly Test; Revision 15

Notifications:
- 600828707; Oil Leak Electric Fire Pump Thermocouple; 4/12/2013
- 600912509; FP2984 Has Solid Stream Leak By; 8/7/2014

Work Orders:
- 200490938; P5-1 – Inspect/Repack;9/2/2014
- 200518911; FP4048-004 04.001 P5-1 EFP 15 Min Run; 9/4/2014
- 200538802; PM 1380 P5-1 & MP5-1 Lubricate & Vibrations for EFP; 9/2/2014
- 200618017; Troubleshoot and Repair AFW Turbine 1 Governor; 9/19/2014
- 200540158; PM 0727: K5-1 Clean & Inspection EDG 1; 9/22/2014

- 200539767; PM 1352: EDG 6-Year Maintenance Activities in Accordance with DB-MM-09345; 9/22/2014
- 200538983; Replace S206-03 and S206-04 Air Starter Motors and Self Locking Nuts on EDG 1; 9/22/2014
- 200530118; Obtain EDG 1 Engine Analysis Data; 9/22/2014
- 200422695; Complete EDG 12-Year Maintenance Activities in Accordance with DB-MM-09346 and DB-MM-09320; 9/22/2014
- 200537933; Replace Gaskets on P205-1 (Engine Driven Fuel Oil Pump); 9/22/2014
- 200559834; Replace P147-3 (EDG 1 AC Turbo Oil Pump); 9/22/2014
- 200505854; Various EDG 1 Checks/Inspections. Drain and Refill Jacket Water System; 9/22/2014
- 200511800; Support Clamp Missing / Fuel Hose Rubbing on EDG 1; 9/22/2014
- 200578096; Replace No. 11 Cylinder Test Cock Assembly on EDG 1; 9/22/2014
- 200537830; Retorque No. 11 Cylinder Test Cock Assembly on EDG 1; 9/22/2014
- 200535163; Perform 24-Month Maintenance on EDG 1 Per DB-MM-09347; 9/22/2014
- 200495462; PM 7257: K5-1 Replace Adjuster RA-70 on EDG 1; 9/22/2014
- 200491346; PM 7487: K5-1 Replace KPD13 Style Relays on EDG 1; 9/22/2014
- 200540157; PM 0714: K5-1 Replace Miscellaneous Relays and Sockets on EDG 1; 9/22/2014
- 200542092; PM 10970: K5-1 Replace Selector Switch Seals on EDG 1; 9/22/2014

Drawings:
- E-45B; Sheet 11A; Elementary Wiring Diagram – AFPT and MFPT Control and Auxiliaries, AFPT Control; Revision 15
- E-578; Sheet 1B; Connection Diagram – Auxiliary Shutdown Panel, C3630 Channel 1; Revision 5
- M-016A; Station Fire Protection System; Revision 54
- OS-047A; Sheet 1; Station Fire Protection System; Revision 25

1R22 Surveillance Testing

Condition Reports:
- 2014-13663; Radiation Detection Instrument Failed During Containment Entry
- 2014-13667; Material Found in CTMT During Quarterly Inspection
- 2014-13671; Green Dust Observed During Quarterly Entry
- 2014-13720; Increase Temperatures in Containment

Procedures:
- DB-MI-03205; Channel Functional Test/Calibration and Response Time of RCP Monitor (RC3601) to SFRCS LCH 1 and RPS CH 1; Revision 20
- DB-MI-03206; Channel Functional Test/Calibration and Response Time of RCP Monitor (RC3603) to SFRCS LCH 3 and RPS CH 3; Revision 23
- DB-OP-03013; Containment Daily Inspection & Containment Closeout Inspection; Revision 10
- DB-SC-03071; Emergency Diesel Generator 2 Monthly Test; Revision 34
- DB-OP-06902; Power Operations; Revision 46
- DB-SS-04150; Main Turbine Stop Valve Test; Revision 13
- DB-SS-04151; Main Turbine Control Valve Test; Revision 15
- DB-SS-04152; Main Turbine Combined Intermediate Valves Test; Revision 10

Work Orders:
- 200518848; DB-MI3205-001; 8/21/2014
- 200518849; DB-MI3206-001; 8/21/2014

1EP6 Drill Evaluation

Condition Reports:
- 2014-13325; EP Drill – Protective Action Recommendation Did Not Match Drill Scenario
- 2014-13326; EP Drill – Alternate TSC Activation Guidance Needed
- 2014-13334; EP Drill – Evaluate Potential Knowledge Gap Regarding Disbursement of Personnel During a Rapid Site Evacuation
- 2014-13338; EP Drill – Need Procedure Guidance for OSC Activation at Lindsey

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; 8/19/2014

2RS7 Radiological Environmental Monitoring Program

Procedures:
- DB-CN-00015; Radiological Environmental Monitoring Program; Revision 2
- DB-CN-03004; Radiological Monitoring Quarterly, Semiannual and Annual Sampling; Revision 7
- DB-CN-03005; Radiological Monitoring Weekly, Semimonthly and Monthly Sampling; Revision 4
- DB-CN-03023; Annual Land Use Census; Revision 2
- DB-CN-10101; Radiological Environmental Monitoring Program Enhancement Sampling; Revision 4
- EN-DP-00103; Meteorological Monitoring Program; Revision 5

Other:
- Offsite Dose Calculation Manual; Revision 29
- 2012 Annual Radiological Environmental Operating Report; May 2013
- 2013 Annual Radiological Environmental Operating Report; May 2014

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

Condition Reports:
- 2013-13314; High Integrity Containers not Dewatered as Described in DB-HP-01502
- 2014-10790; Unexpected Receipt of Annunciator 7-1-D (Miscellaneous Waste System Out Radiation High) Prior to Initiating Liquid Release
- 2014-11467; Radioactive Material Tag on the Ground Next to Sea-Van SL-14
- 2014-11489; Missing Sealant on Old Reactor Head
- 2014-11491; White Staining on Ceiling of Old Steam Generator Storage Building Along East Wall
- 2014-11553; Low Level Radioactive Waste Storage Facility Radiation Element Plastic Sample Tubing has Indentation
- 2012-12437; Inadequate Radiological Waste Processing System
- 2012-14527; Shipment Container Contents Damaged During Transit

- 2013-13195; MS-C-13-08-03: Radwaste Shipping Documentation Not Maintained in Proper Records
- 2013-16475; Water Leak from Sea-Land Container
- 2014-00967; Storage of Radioactive Material Sea-Land Container Did not Satisfy Standards Described in NOP-OP-4102
- 2014-05376; Procedure/Training Discrepancy with NOP-OP-5201, Shipment Radioactive Material Waste and Training

Notifications:
- 600904708; Monitor Tank Filters do not Appear Effective; 6/24/14
- 600907446; WM244 Rust Stains and Leakage; 7/9/2014

Work Orders:
- 200292853; 10CFR61 Analysis; 12/30/2012
- 200306165; 10CFR61 Analysis; 3/16/2012
- 200336459; 10CFR61 Analysis; 10/29/2013

Procedures:
- DBBP-RP-1010; Routine Radiological Surveys; Revision 27
- DB-HP-1190; Radiological Controls For the New Steam Generator Storage Facility; Revision 0
- DB-HP-1106; Radiation Protection Procedure Processing Changes to the Process Control Program; Revision 2
- DB-HP-1152; Performance of High Exposure Work; Revision 17

Shipments:
- 2013-1006; B/W Water Filtration Skid; 10/31/2013
- 2013-1011; Duratek Filters; 12/20/2013
- 2014-1042; Spent Resin Storage Tank Water; 12/6/2013
- 2014-3028; WSI Equipment; 3/11/2014
- 2014-3062; Pipe Pieces; 5/20/2014

Internal Assessments:
- DB-PA-13-01; Nuclear Oversight Trimester Report, 1st Trimester 2013; 6/7/2013
- DB-PA-13-02; Nuclear Oversight Trimester Report, 2nd Trimester 2013; 10/7/2013
- DB-PA-14-01; Nuclear Oversight Trimester Report, 1st Trimester 2014; 6/2/2014
- Filter Characterization Report 12-005; 3/20/2012
- SN-SA-2014-0025; Self-Assessment Solid Radwaste Processing and Material Handling, Storage; 5/12/2014
- Survey 14-00404; Investigate Potential Leak Near WM244; 7/9/2014

Other:
- Annual Radiological Environmental Operating Report; May 2014
- Davis-Besse Nuclear Power Station; Process Control Program; Revision 9

4OA1 Performance Indicator Verification

Condition Reports:
- 2014-12799; Failure to Report MSPI Failure

Forms:
- NOBP-LP-4012-48; MSPI Heat Removal System (AFW); Completed Forms for July 2013 through June 2014
- NOBP-LP-4012-49; MSPI Residual Heat Removal System (LPI); Completed Forms for July 2013 through June 2014
- NOBP-LP-4012-50; MSPI Support Cooling System, Component Cooling Water; Completed Forms for July 2013 through June 2014
- NOBP-LP-4012-51; MSPI Support Cooling System, Service Water; Completed Forms for July 2013 through June 2014
- NOBP-LP-4012-52; Reactor Coolant System Specific Activity; Revision 0
- NOBP-LP-4012-57; Occupational Exposure Control Effectiveness; Revision 0
- NOBP-LP-4012-58; RETS/ODCM Radiological Effluent Occurrence; Revision 0

Procedures:
- NOBP-LP-4012; NRC Performance Indicators; Revision 4
- DB-CH-01815; Dose Equivalent Iodine-131 Determination; Revision 3
- DB-CH-03000; Primary Coolant System Radiochemistry; Revision 9
- NOP-OP-4205; Dose Assessment; Revision 4

Other:
- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 7
- Select Operator Logs covering the period of April 2013 through June 2014
- Maintenance Rule Unavailability Database covering the period of July 2013 through June 2014
- Mitigating System Performance Index Basis Document, Davis-Besse Nuclear Power Station; Revision 4

4OA2 Problem Identification and Resolution

Condition Reports:
- 2014-13288; Half of SW37 Valve Liner Was Discovered Missing When Disassembled
- 2014-13391; Trend CR Only on Vital Area Doors Not Being Secured
- 2014-14293; CR Not Initiated in Timely Fashion for SW37 Valve Liner

Procedures:
- NOP-LP-2001; Corrective Action Program; Revision 33

Other:
- Select Operator Logs covering the period of July 2014 through September 2014

4OA3 Followup of Events and Notices of Enforcement Discretion

Condition Reports:
- 2014-08263; Unexpected Control Rod 4-9 Indication
- 2014-08344; Manual Reactor Trip Due to High CRD Temperature >180 °F
- 2014-08555; Late Reporting of Manual Reactor Trip Per 10 CFR 50.72
- 2014-09230; Crew Performance Critique for CR 2014-08555: Late Reporting of Manual Reactor Trip Per 10 CFR 50.72
- 2014-09280; Backup Annunciator Power Supply Did Not Work
- 2014-09494; Control Room Annunciators Fast Flash and Can't Be Acknowledged when Alarm Received
- 2014-11234; Missed Report of Annunciator Malfunction

- 2014-11238; ODMI: Operational Guidance with Axial Power Shaping Rod (APSR) 8-2 (Core Location D-10) Uncoupled, Revision 01
- 2014-11432; Containment Fire Alarm: Containment East Passage FDZ-410 DS8676C CB-410 Is In Alarm
- 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
- 2014-13638; PA-DB-14-02: Reporting Requirement Trend

Procedures:
- PFP-CB-410; Containment Building, East Elevation 603' and Valve Room Elevation 636', Fire Area 'D'; Revision 4
- DB-OP-01101; Containment Entry; Revision 12
- DB-OP-02501; Serious Station Fire; Revision 23
- DB-OP-06621; Simplex Fire Alarm Panels; Revision 6
- RA-EP-01600; Unusual Event; Revision 8
- NOP-OP-1015; Event Notifications; Revision 0
- NOP-LP-5004; Equipment Important to Emergency Response; Revision 1
- RA-EP-01500; Emergency Classification; Revision 15

FENOC Business Practices and Reference Manuals:
- NOBP-OP-1015; Event Notifications; Revision 00
- DBRM-EMER-1500A; Davis-Besse Emergency Action Level Basis Document; Revision 6
- DBRM-EMER-1500B; Hot and Cold EAL Wall Board; Revision 1
- DBRM-EMER-1500C; Davis-Besse Emergency Action Level Reference Manual; Revision 0
- DBRM-EMER-5003; Equipment Important to Emergency Response; Revision 11

NRC Event Notification System (ENS) Forms:
- 50086: Manual Reactor Scram with Rod Motion While Shutdown; 5/5/2014
- 50097: Manual Initiation of the Reactor Protection System While Shutdown; 5/8/2014
- 50143; Control Room Overhead Annunciator Malfunction; 5/26/2014
- 50252; Control Room Overhead Annunciator Malfunction; 7/2/2014
- 50263; Unusual Event Due to Smoke Alarm in Containment; 7/8/2014
- 50381; Shield Building Boundary Door Failed to Latch; 8/20/2014

Other:
- Fire Hazard Analysis Report; Revision 25
- Select Operator Logs covering the period of April 2014 through September 2014

## LIST OF ACRONYMS USED

| | |
|---|---|
| ADAMS | Agencywide Document Access Management System |
| ALARA | As-Low-As-Is-Reasonably-Achievable |
| CAP | Corrective Action Program |
| CCW | Component Cooling Water |
| CFR | Code of Federal Regulations |
| CR | Condition Report |
| CRD | Control Rod Drive |
| DRP | Division of Reactor Projects |
| ECCS | Emergency Core Cooling System |
| EDG | Emergency Diesel Generator |
| EP | Emergency Preparedness |
| EVS | Emergency Ventilation System |
| FW | Feedwater |
| HPI | High Pressure Injection |
| IMC | Inspection Manual Chapter |
| IP | Inspection Procedure |
| IR | Inspection Report |
| ISI | Inservice Inspection |
| LER | Licensee Event Report |
| MSPI | Mitigating Systems Performance Index |
| NCV | Non-Cited Violation |
| NEI | Nuclear Energy Institute |
| NOUE | Notice of an Unusual Event |
| NRC | U.S. Nuclear Regulatory Commission |
| PARS | Publicly Available Records System |
| PI | Performance Indicator |
| PMT | Post-Maintenance Testing |
| RCS | Reactor Coolant System |
| RPS | Reactor Protection System |
| SDP | Significance Determination Process |
| SRO | Senior Reactor Operator |
| SSC | Systems, Structures, and Components |
| SW | Service Water |
| TS | Technical Specification |
| USAR | Updated Safety Analysis Report |
| WO | Work Order |

component of NRC's Agencywide Documents Access and Management System (ADAMS), 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

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