



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

February 11, 2016

Mr. David Hamilton  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Perry Nuclear Power Plant  
P. O. Box 97, 10 Center Road, A-PY-290  
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT NRC INTEGRATED INSPECTION REPORT  
05000440/2015004

Dear Mr. Hamilton:

On December 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed a baseline inspection at your Perry Nuclear Power Plant. On January 14, 2016, the NRC inspectors discussed this inspection with you and members of your staff. The inspectors documented the results of this inspection in the enclosed inspection report.

The NRC inspectors documented two findings of very low safety significance (Green) in this report. The findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs), consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or the significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) Regional Administrator, Region III; (2) Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector Office at the Perry Nuclear Power Plant.

In addition, if you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Perry Nuclear Power Plant.

D. Hamilton

-2-

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter 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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Billy Dickson, Chief  
Branch 5  
Division of Reactor Projects

Docket No. 50-440  
License No. NPF-58

Enclosure:  
IR 05000440/2015004

cc: Distribution via LISTSERV®

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-440  
License No: NPF-58

Report No: 05000440/2015004

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Perry Nuclear Power Plant

Location: North Perry, Ohio

Dates: October 1 through December 31, 2015

Inspectors: M. Marshfield, Senior Resident Inspector  
J. Nance, Resident Inspector  
M. Bielby, Senior Operator Licensing Examiner  
T. Go, Health Physicist  
G. Hansen, Senior Emergency Preparedness Inspector  
B. Kemker, Fermi Senior Resident Inspector  
K. Kolaczyk, Nine Mile Point Senior Resident Inspector  
P. Lee, Health Physicist

Approved by: B. Dickson, Chief  
Branch 5  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY.....	2
REPORT DETAILS.....	4
Summary of Plant Status.....	4
1. REACTOR SAFETY.....	4
1R01 Adverse Weather Protection (71111.01).....	4
1R04 Equipment Alignment (71111.04).....	5
1R05 Fire Protection (71111.05).....	6
1R06 Flooding (71111.06).....	9
1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11).....	10
1R12 Maintenance Effectiveness (71111.12).....	12
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13).....	13
1R15 Operability Determinations and Functional Assessments (71111.15).....	13
1R19 Post-Maintenance Testing (71111.19).....	14
1R22 Surveillance Testing (71111.22).....	15
1EP4 Emergency Action Level and Emergency Plan Changes (IP 71114.04).....	16
2. RADIATION SAFETY.....	17
2RS5 Radiation Monitoring Instrumentation (71124.05).....	17
4. OTHER ACTIVITIES.....	19
4OA1 Performance Indicator Verification (71151).....	19
4OA2 Identification and Resolution of Problems (71152).....	20
4OA5 Other Activities.....	24
4OA6 Management Meetings.....	24
SUPPLEMENTAL INFORMATION.....	1
Key Points of Contact.....	1
List of Items Opened, Closed, and Discussed.....	2
List of Documents Reviewed.....	3
List of Acronyms Used.....	10

## SUMMARY

Inspection Report (IR) 05000440/2015004; 10/01/2015–12/31/2015; Perry Nuclear Power Plant; Fire Protection, and Problem Identification and Resolution.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two findings were identified by the inspectors that were considered Green non-cited violations (NCVs) of the U.S. Nuclear Regulatory Commission (NRC) regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," Revision 5, dated February 2014.

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

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

Green. The inspectors identified a finding of very low safety significance and an associated NCV of Perry Operating License Condition 2.C(6), Fire Protection, for the licensee's failure to maintain a three-hour fire barriers as required by the Updated Safety Analysis Report (USAR). Specifically, the inspectors identified a through-wall hole, approximately two feet wide and two feet tall in the common wall between the Unit 2, Division 1 and Division 2, direct current (DC) switchgear rooms and another hole, approximately one foot wide and one foot tall between the Unit 2, Division 2 DC switchgear room and the outside hallway.

The two through-wall holes were determined to be a performance deficiency associated with compliance to the licensee's fire protection program because the walls are described in the USAR as three-hour fire barriers for the rooms in question. The performance deficiency was more than minor; and thus a finding, because it was associated with the Protection Against External Factors attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance through analysis of the issue as a fire confinement problem and the fact that the reactor would still be able to reach and maintain safe shutdown despite the deficiency. The inspectors identified no cross-cutting issues associated with this finding because the condition has existed since at least July 2011, and therefore, is not indicative of current plant performance. (Section 1R05.1)

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1, "Procedures," was self-revealed on November 4, 2015 when operators failed to follow procedures and caused an increase in level of the suppression pool. Specifically, during the process of recovering the "B" RHR system in accordance with system operating instruction SOI–E12, "Residual Heat Removal System," the operators failed to follow an "If/Then" statement and did not isolate the alternate keep-fill system prior to starting the RHR pump to sweep voids into the suppression pool. This

resulted in the condensate transfer system remaining lined up to “B” RHR train and transfer of an estimated 15,000 gallons of condensate water to the suppression pool. The resultant increasing suppression pool level caused a suction swaps for both HPCS and RCIC to the suppression pool. The licensee took immediate actions to suspend the evolution, restored the suppression pool level to the middle of the acceptable band, and restored the suction sources for HPCS and RCIC to the condensate storage tank. A human performance event response investigation was conducted and the operating crew was remediated. The issue was entered into the licensee’s CAP as CR 2015–15089.

The operator’s failure to follow the procedure was a performance deficiency that was determined to be more than minor; and thus a finding, because it was associated with the Mitigating Systems Cornerstone attribute of equipment performance and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance because it did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significance in accordance with the licensee’s Maintenance Rule Program for greater than 24 hours. This finding has a cross-cutting aspect in the area of problem identification and resolution, problem resolution, because the licensee had not solved a similar issue in third quarter of 2015 that involved the same contributing factors of poor maintenance supervision, inadequate pre-job briefs and poor shift management oversight. [P.3] (Section 4OA2.2)

## REPORT DETAILS

### Summary of Plant Status

The plant began the inspection period at 100 percent power and remained at full power the remainder of the reporting period with the exceptions of minor reductions in power to support routine surveillances.

#### 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—High Wind Conditions

##### a. Inspection Scope

Since high winds associated with the remnants of Hurricane Patricia were expected to potentially impact the Perry local area and high winds were forecast in the vicinity of the facility for October 28–29, 2015, the inspectors reviewed the licensee’s overall preparations/protection for the expected weather conditions. On October 27, 2015, the inspectors walked down the emergency service water system and safety-related system areas, in addition to the licensee’s emergency alternating current (AC) power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff’s preparations against the site’s procedures and determined that the staff’s actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee’s procedures used to respond to specified adverse weather conditions. The inspectors toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspector’s evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report.

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

##### b. Findings

No findings were identified.

## .2 Winter Seasonal Readiness Preparations

### a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the USAR and performance requirements for systems selected for inspection and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues: emergency service water system heat tracing, condensate transfer piping protection, and licensee temporary heating to areas in use in the Unit 2 buildings.

This inspection constituted one winter seasonal readiness preparations sample as defined in IP 71111.01–05.

### b. Findings

No findings were identified.

## 1R04 Equipment Alignment (71111.04)

### Quarterly Partial System Walkdowns

#### a. Inspection Scope

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

- Division 1 emergency diesel generator;
- Annulus exhaust gas treatment "B"; and
- Unit 2 startup transformer.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, USAR, Technical Specification (TS) requirements, outstanding work orders (WOs), 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 constituted three partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire zone 1DG–1A, Unit 1–division 2 diesel generator building 620’6” and 646’6” elevations, and fire zone DG–1D, diesel generator building hallway 620’6” and 646’6” elevations;
- Fire zones 0EW–1a and 0EW–1b, emergency service water pump house;
- Fire zones 2CC–4c, 2CC–4d, 2CC–4g, and 2CC–4h, unit 2–division 1 & 2 cable spreading rooms, 125 VDC distribution rooms, and battery rooms 638’6” elevation and fire zone 1CC-5A, unit 1 control room 654’6” elevation;
- Fire zone 0IB–4, intermediate building 654’6” and 665’ elevations and fire zone 0IB-5, intermediate building 682’ elevation; and
- Fire zones 1CC–4a, 1CC–4e, and 1CC–4i, unit 1 cable spreading rooms division 1 and 2 and the computer room on control complex 638’6” elevation.

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

The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant’s Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant’s ability to respond to a security event. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers,

and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

Failure to Ensure Required Three Hour Fire Barriers Were In-Place

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of License Condition 2.C(6), Fire Protection, for failure to maintain three-hour fire barriers as required by the USAR. Specifically, the inspectors identified a through-wall hole, approximately two feet wide and two feet tall in the common wall between the Unit 2, Division 1 and 2 DC switchgear rooms and a second hole, approximately one foot wide and one foot tall, between the Unit 2, Division 2 DC switchgear room and the outside hallway.

Description: On December 17, 2015, the inspectors performed a fire protection walkdown of the Unit 2, Division 1 and 2 battery rooms and their respective DC switchgear rooms. The Unit 2, Division 1 and 2 batteries and their respective DC switchgear serve as backups for the Unit 1, Division 1 and 2 batteries and associated DC switchgear. The inspectors identified a hole in the gypsum wall board through the wall separating the Unit 2, Division 1 and 2 switchgear rooms. The hole was approximately two feet wide and two feet tall and impacts all six layers of gypsum wall board. The wall was designed to have a three-hour fire resistance rating. The three-hour fire rated wall was clearly depicted in Perry fire protection documents that implemented the fire protection plan. The unobstructed two foot by two foot hole through the wall provided no resistance to fire, smoke, or heat passing between two trains of equipment that could be connected at the same time to the Unit 1 safety-related equipment. Additionally, the inspectors identified a through-wall hole, approximately one foot wide and one foot tall, between the Unit 2, Division 2 DC switchgear room and the outside hallway.

The licensee's fire protection program, as described in the USAR sections 9A.4.4.4.2.3.1 and 9A.4.4.4.2.7 for fire area 2CC-4c (Unit 2, Division 2 125 VDC distribution/switchgear room) and fire area 2CC-4g (Unit 2, Division 1 125 VDC distribution/switchgear room), respectively, requires in part, that, "Walls, floor and ceiling have a three-hour fire resistance rating." The USAR further states in section 9A.2.2.3, in part, that "Walls are assigned fire resistance ratings based upon their construction. Gypsum board wall assemblies are used as rated fire barriers, both for separation of safe shutdown equipment and as internal partitions within designated Fire Areas/Zones." Procedures SOI-R42 (Div. 1), "Div 1 DC Distribution, Buses ED-1-A and ED-2-A. Batteries, Chargers, and Switchgear," and SOI-R42 (Div. 2), "Div 2 DC Distribution, Buses ED-1-B and ED-2-B. Batteries, Chargers, and Switchgear," allow both divisions of Unit 2 batteries to be placed in service to maintain operability of their respective Unit 1 DC buses at the same time. As a clarification to the operators, the licensee issued a Standing Order, "Placing Unit 2 Safety-Related Batteries in Service to Unit 1," on December 23, 2015, which states, in part, that "If an emergent issue requires BOTH Unit 2 batteries to be placed in service to maintain operability of their respective Unit 1

DC buses: Place the batteries in service in accordance with SOI-R42 (Div. 1), Section 7.16 or 7.19 and SOI-R42 (Div. 2), Section 7.11 or 7.14 as appropriate;” and “Establish a new Barrier Impairment for Both Batteries in service to Unit 1 in accordance with the above SOI sections.” The licensee also implemented an interim compensatory measure to conduct hourly fire watches of the DC switchgear rooms until corrective actions are completed.

Analysis: The inspectors determined that the failure to maintain three-hour barriers as specified in the USAR was a performance deficiency that warranted further evaluation. Using guidance in IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” dated September 7, 2012, the inspectors determined that the issue was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Table 3 of Attachment 4 of IMC 0609, “The SDP for Findings at Power,” dated June 19, 2012, the inspectors answered “yes” to the fire protection question, “Does the finding involve: (2) Fixed fire protection systems or the ability to confine a fire?” By answering “yes,” the inspectors were directed to evaluate the significance using IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” dated September 20, 2013. In Appendix F, Attachment 1, Step 1.2, “Category of Fire Inspection Finding,” the inspectors assigned Category 1.4.3, “Fire Confinement,” to the finding. The inspectors then answered “yes” to question 1.3.1 A, because the reactor would be able to reach and maintain safe shutdown (either hot or cold) condition and thereby determined the issue to be of very low safety significance (Green). The inspectors reviewed operating logs from January 1, 2012 through December 31, 2015 and determined that at no time during that period were both divisions of Unit 2 125 VDC batteries/switchgear used to support Unit 1 Division 1 and 2 125 VDC buses at the same time. The inspectors identified no cross-cutting issues associated with this finding because the condition has existed since at least July 6, 2011, by photographic evidence and is not indicative of current plant performance.

Enforcement: License Condition 2.C(6) requires the licensee to “implement and maintain in effect all provisions of the approved fire protection program as described in the USAR, as amended, and as approved through Safety Evaluation Report (NUREG-0887) dated May 1982 and supplemental numbers 1 through 10.” Section 9A of the USAR describes the approved fire protection program. In section 9A.4.4.4.2.3 and 9A.4.4.4.2.7, the USAR describes the fire protection for fire area 2CC-4c and fire area 2CC-4g and requires in part, “Walls, floor and ceiling have a three-hour fire resistance rating.” Contrary to the above, on December 17, 2015, the inspectors identified that the licensee failed to ensure that all walls maintained the required three-hour fire rating. Specifically, a through-wall hole, approximately two feet wide and two feet tall, in the common wall between the Unit 2, Division 1 and 2 DC switchgear rooms and another through-wall hole, approximately one foot wide and one foot tall, between the Unit 2, Division 2 DC switchgear room and the outside hallway, violated the required three-hour rated fire barriers. Because this violation was of very low safety significance and was entered into the licensee’s CAP as CR 2015-16959 and the licensee initiated hourly fire watches as compensatory measures for the affected fire areas, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000440/2015004-01, Failure to Ensure Required Three-Hour Fire Barriers Were In-Place)**

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On October 6, 2015, the inspectors observed a fire brigade activation for a simulated fire in the auxiliary boiler fuel oil pump house. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were:

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

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the USAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the auxiliary building and the emergency core cooling rooms to verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

Documents reviewed during this inspection are listed in the Attachment to this report. This inspection constituted one internal flooding sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

.2 Underground Vaults

a. Inspection Scope

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

- Electrical manhole #1, east vault division 3 safety-related circuits and west vault division 2 safety-related circuits; and
- Electrical manhole #4, east vault division 1 / unit 2 safety-related circuits and west vault division 1 / unit 1 safety-related circuits.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11)

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

a. Inspection Scope

On November 19, 2015, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;

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

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

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11-05 and satisfied the inspection program requirement for the resident inspectors to observe a portion of an in-progress annual requalification operating test during a training cycle in which it was not observed by the NRC during the biennial portion of this IP.

b. Findings

No findings were identified.

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

a. Inspection Scope

On November 25, 2015, the inspectors observed control room personnel conducting electrical plant bus transfers and overseeing the replacement of the last of 114 Rosemount 710DU trip units based on a 10 CFR Part 21 issued on June 21, 2012, as Event Number 48042. The trip unit replaced was for the drywell high pressure channel 'A' instrument. These were activities that required heightened awareness or were related to increased risk. The inspectors evaluated the following areas:

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

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

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

b. Findings

No findings were identified.

.3 Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, administered by the licensee from the week of November 2, 2015 through the week of December 14, 2015, as required by 10 CFR 55.59(a). The results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's Licensed Operator Requalification Training program to meet the requirements of 10 CFR 55.59.

This inspection constituted one annual licensed operator requalification examination results sample as defined in IP 71111.11-05.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- Division 1 emergency diesel generator and fuel oil storage tank;
- Emergency service water system; and
- Control rod drive system.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance

effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the conditions or 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:

- Division 2 preferred breaker, EH1212 replacement;
- Drywell high pressure Rosemount trip unit replacement;
- Reactor protection system 'A' motor-generator set output breaker replacement; and
- Preparations for a rod sequence exchange including rod timing tests and restoration activities.

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

These maintenance risk assessments and emergent work control activities constituted four samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:



- Division 1 emergency diesel generator fuel oil storage tank exceeding diesel fuel oil specifications;
- Diesel driven fire pump fuel oil tank exceeded fuel oil specifications;
- Containment airlock inboard equalizing valves not tested in accordance with TS surveillance requirements;
- Prompt operability determination for removal of motor operators and gagging shut the service water supply and return isolation valves for spent fuel pool cooling heat exchanger A;
- Prompt operability determination for pipe supports for spent fuel pool instrumentation;
- Upper containment airlock inner door inoperable; and
- Operator Workarounds.

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 determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

The inspectors also reviewed the licensee's management of operator workarounds (OWAs). The inspectors verified that the licensee was identifying OWAs at an appropriate threshold, entering them in the corrective action program, and planning or taking appropriate corrective actions. The inspectors evaluated whether there were excessive number of OWAs and whether their individual and cumulative impacts adversely affected the operators' and/or SSCs' responses to an emergency or transient conditions.

Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted seven samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- Diesel driven fire pump engine rebuild post-maintenance test;
- Unit 2 inter-bus transformer LH-2-B post-maintenance test;
- Control room ventilation 'B' post-maintenance tests;
- Hydrogen analyzer 'A' maintenance post-maintenance test;
- Division 2 preferred breaker, EH1212, replacement post-maintenance test; and
- Hotwell pump "C" motor replacement post-maintenance test.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted six post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- Surveillance instruction (SVI)-E12-T2001; RHR 'A' pump and valve operability test (Inservice Testing);
- SVI-R43-T1318; diesel generator start and load division 2 (Routine);
- SVI-B21-T0369-A; SRV [safety relief valve] and low-low set pressure actuation channel functional for 1B21-N668A (Routine);
- SVI-E51-T2001; RCIC pump and valve operability test (Routine); and
- SVI-M56-T5418; hydrogen igniter operability test (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;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing (IST) activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted four routine surveillance testing samples, and one in-service test sample as defined in IP 71111.22-02 and -05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The regional inspectors performed an in-office review of the latest revisions to the Emergency Plan and Emergency Action Levels (EALs).

The licensee transmitted the Emergency Plan and EAL revisions to the U.S. Nuclear Regulatory Commission pursuant to the requirements of Title 10, *Code of Federal Regulations*, Part 50, Appendix E, Section V, "Implementing Procedures." The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection.

This EAL and Emergency Plan Changes inspection constituted one sample as defined in IP 71114.04–05.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

**Cornerstones: Public and Occupational Radiation Safety**

2RS5 Radiation Monitoring Instrumentation (71124.05)

The inspection activities supplement those documented in IR 05000440/2014003, and constitute one complete sample as defined in IP 71124.05–05.

.1 Walkdowns and Observations (02.02)

a. Inspection Scope

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

b. Findings

No findings were identified.

.2 Calibration and Testing Program (02.03)

(1) Process and Effluent Monitors

a. Inspection Scope

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

The inspectors assessed whether the effluent monitor alarm setpoints were established as provided in the ODCM and station procedures.

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

b. Findings

The inspectors identified that the efficiency calibration for the liquid effluent radiation monitor, 0D17-K0606, could not be located. The licensee performed a new efficiency determination on the monitor during digital modification upgrade on 2006 for all effluent monitors. According to the licensee, the calculated count rate using a new standard National Institute of Standards and Technology traceable sources indicated a close approximation to the liquid detector count rates data determined during the detector initial (primary) calibration. To date, the licensee was unable to provide the initial calibration paperwork indicating that the calibration count rates for the detector efficiency determinations were correlatable. The inspectors attempted to assess whether the original standard count rates for efficiency determination were correlatable to the initial calibration paperwork; however, this assessment could not be completed within this inspection period. The issue remains under review by the U.S. Nuclear Regulatory Commission (NRC) pending further information from the licensee, and is categorized as an Unresolved Item (URI) pending completion of that NRC review **(URI 05000440/2015004-02; Liquid Effluent Calibration)**.

(2) Laboratory Instrumentation

a. Inspection Scope

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

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

b. Findings

No findings were identified.

(3) Whole-Body Counter

a. Inspection Scope

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

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

b. Findings

No findings were identified.

(4) Post-Accident Monitoring Instrumentation

a. Inspection Scope

Inspectors selected containment high-range monitors and reviewed the calibration documentation since the last inspection.

The inspectors assessed whether an electronic calibration was completed for all range decades above 10 rem/hour, and whether at least 1 decade at or below 10 rem/hour was calibrated using an appropriate radiation source.

The inspectors assessed whether calibration acceptance criteria were reasonable; accounting for the large measuring range and the intended purpose of the instruments.

The inspectors selected effluent/process monitors that were relied on by the licensee in its emergency operating procedures as a basis for triggering EALs and subsequent emergency classifications, or to make protective action recommendations during an accident. The inspectors evaluated the calibration and availability of these instruments.

The inspectors reviewed the licensee's capability to collect high-range, post-accident iodine effluent samples.

As available, the inspectors observed electronic and radiation calibration of these instruments to assess conformity with the licensee's calibration and test protocols.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

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

40A1 Performance Indicator Verification (71151)

Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage Performance Indicator (PI) for the fourth quarter 2014 through the third quarter 2015. To determine the accuracy of the PI data reported, definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, was used. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports and NRC integrated IRs to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to

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

This inspection constituted one reactor coolant system leakage (BI02) sample as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, "Procedures," was self-revealed on November 4, 2015, when operators failed to follow procedures and caused an increase in level of the suppression pool. Specifically, during the process of recovering the "B" residual heat removal (RHR) system in accordance with system operating instruction SOI-E12, "Residual Heat Removal System," the operators failed to follow an "If/Then" statement and did not isolate the alternate keep-fill system prior to starting the RHR pump to sweep voids into the suppression pool. This resulted in the condensate transfer system remaining lined up to "B" RHR train and the transfer of an estimated 15,000 gallons of condensate water to the suppression pool. The resultant increasing suppression pool level caused a suction swaps for both high pressure core spray (HPCS) and reactor core isolation cooling (RCIC) to the suppression pool.

Description: During performance of a post maintenance system recovery process for the "B" RHR train, operators failed to follow an "If/Then" statement in procedure SOI-E12, "Residual Heat Removal System," and incorrectly assumed that the alternate keep-fill lineup would be secured later in the procedure. Additionally, the operators failed to understand the impact of not securing the alternate keep-fill lineup prior to starting the "B" RHR pump. The licensee started the "B" RHR pump in recirculation lineup to sweep away voids in the system which may have developed during the maintenance period and reduce possibilities for future water-hammer events. However, with the alternate keep-fill system in service, the RHR system took a suction from both the condensate makeup and transfer system as well as the suppression pool. This lineup allowed additional makeup water to enter the RHR "B" system because of the pump suction effect and resulted in a transfer of approximately 15,000 gallons of water from the condensate makeup system to the suppression pool. Indications identified in the control room during the event by the operators included, all three condensate makeup pumps automatically started and running with a rising level indicated in the suppression pool. This was a proper response by the condensate makeup system but not an expected result of starting the "B" RHR pump. Therefore, the shift manager ordered the pump stopped and terminated the evolution. As a result of the unplanned water transfer to the suppression pool, a high level alarm was received for the suppression pool, but the suppression pool did not exceed its maximum allowed TS value for level. However, the event did cause the HPCS and RCIC suctions to swap from the condensate storage tank to the suppression pool. The resulting restoration of suction for HPCS to the condensate storage tank required the HPCS system to be declared inoperable directly leading to an unplanned loss of safety system availability because of the procedural error made by the operators.

Analysis: The inspectors determined that the operator's failure to follow the procedure steps in procedure SOI-E12 for restoration of the RHR system was a performance deficiency warranting further review. Using the guidance in IMC 0612, "Power Reactor IRs," Appendix B, "Issue Screening," dated September 7, 2012, the inspectors determined that the performance deficiency was more than minor; and thus, a finding because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding could be evaluated using the significance determination process in accordance with IMC 0609,



Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, dated June 19, 2012. The inspectors reviewed the Mitigating Systems Screening Questions in Exhibit 2 and answered "no" to the question, "Does the finding represent an actual loss of function of one or more non-Technical Specification Trains of equipment designated as high safety-significant in accordance with the licensee's Maintenance Rule Program for greater than twenty-four hours?" Therefore, the finding screened as very low safety significance (Green).

The finding has a cross-cutting aspect in the area of problem identification and resolution, resolution, for the licensee's failure to take corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, the licensee's evaluation to a NCV issued in the third quarter of 2015 for failing to complete two procedural steps to isolate RCIC identified that poor maintenance supervision, inadequate pre-job briefs and poor shift management oversight were contributors to the previous event. However, the license ascribed the CAP identified information to only the instrument and controls division in the maintenance department. Those contributors were also present in this event, but they were not corrected or even directed for information purposes to the plant operators thus significantly contributing to the likelihood of this repeat occurrence of a similar type event. [P.3]

Enforcement: TS 5.4.1, "Procedures," requires in part, that written procedures and instructions be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, Section 4, states, in part, that instruction for energizing, filling, venting, draining, startup, shutdown, and changing modes of operation should be prepared as appropriate for shutdown cooling and reactor vessel head spray system. Further, procedure NOP-OP-1002, "Conduct of Operations," requires operators to control plant evolutions in accordance with approved and up-to-date procedures, clearances, and other documents as appropriate to maintain proper configuration control and reduce the potential for operational events. Contrary to these requirements, on November 4, 2015, while performing a system restoration of RHR "B" train, the licensee failed to correctly implement the steps outlined in the procedure causing an unplanned transfer of an estimated 15,000 gallons of condensate water to the suppression pool and resulting in an unplanned unavailability and TS entry for HPCS during restoration from the event.

Following the unplanned transfer of water caused by the evolution, the licensee took immediate actions to restore suppression pool level to the middle of the programmed band and restored normal system lineups for HPCS and RCIC. A human performance event response investigation was conducted. The operating crew was removed from duties and remediated, and training was scheduled for the operations department on the causes of this event. The issue was entered into the licensee's CAP as CR 2015-15089. Because this violation was of very low safety significance and it was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000440/2015004-03, Failure to Properly Implement System Operating Instructions to Restore RHR "B" to Service)**

.3 Annual Follow-up of Selected Issues: Reviewed Licensee Corrective Actions for Preconditioning Which Had Previously Been Identified by a NCV

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors reviewed a corrective action item (CR 2015–07331) documenting the licensee's failure to resolve the cross-cutting aspect in work management, identified by the inspectors in NRC integrated inspection report 05000440/2014005, dated February 13, 2015. In this IR, NCV 05000440/2014–01, "Unevaluated Preconditioning of Emergency Service Water Motor-Operated Valves and Check Valves Prior to Conducting As-Found Inservice Surveillance Testing" was issued. The inspectors made the following observations of other instances when preconditioning occurred that was not evaluated prior to integrated system testing maintenance.

The licensee's procedure, NORM–ER–2001, "Preconditioning Structures, Systems and Components," revision 01, paragraph 4.1.2.6, states in part, that "As long as a routine maintenance activity is performed at an interval approximately four times longer than the applicable IST exam the performance of that maintenance before the IST may be evaluated to determine that it is acceptable preconditioning." The inspectors identified two instances where the licensee failed to evaluate the maintenance being performed as acceptable preconditioning prior to IST.

- The inspectors identified that maintenance on diesel generator auxiliary systems that started on November 9, 2015, was unevaluated preconditioning. The licensee scheduled numerous items of preventive maintenance work during a divisional allowed outage window prior to the monthly Division 2 diesel generator as-found surveillance test. No engineering evaluation was conducted prior to the maintenance work being performed nor prior to the IST.
- The inspectors identified that maintenance conducted on November 20, 2015, on an electrical breaker which supplies the emergency bus associated with the Division 1 diesel generator resulted in unevaluated preconditioning. The post maintenance testing for the breaker work required running the diesel prior to the scheduled monthly run of the diesel four days later. Specifically, the licensee scheduled preventive maintenance work on breaker EH1115, "Alternate Preferred Source Breaker to EH11." The Division 1 diesel generator start and load surveillance for IST was performed on November 24, 2015. No engineering evaluation was conducted prior to the breaker maintenance work or the IST being completed.

The inspectors concluded that both of these were minor findings based on the licensee's engineering evaluations, which concluded that pre-conditioning was not impacted by licensee scheduling. The evaluations were completed after the IST testing was performed.

Additionally, the inspectors observed that CR 2015–07331 was downgraded from a full apparent cause evaluation, to a limited apparent cause evaluation. Because preconditioning has been an ongoing issue at Perry Nuclear Power Plant since at least July 2010, the inspectors observed that the CAP program would have provided better input to the process if a full apparent cause evaluation was completed. The licensee's

continuing challenges in this area are indicators to the inspectors that the problem of maintenance scheduling resulting in unevaluated, and in some cases, actual preconditioning of systems important to safety has not been fixed by the licensee.

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

b. Findings

No findings were identified.

4OA5 Other Activities

Temporary Instruction 2515/190-Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendations 2.1 Flooding Hazard Evaluations

a. Inspection Scope

The inspectors independently verified that the licensee's proposed interim actions would perform their intended function for flooding mitigation. Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed were conducted. Reasonable simulation conducted by the licensee was reviewed and flood protection feature functionality was determined using either visual observation or by review of other documents.

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

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 14, 2016, the inspectors presented the inspection results to Mr. D. Hamilton, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the area of radiation monitoring instrumentation with Mr. D. Hamilton, Director of Site Operations, December 7, 2015;
- The inspection results for the annual review of Emergency Plan changes with Mr. R. O'Connor, Emergency Preparedness Manager, via telephone on December 16, 2015; and
- The 2015 licensed operator annual operator test results with Mr. M. Brogan, Operations Training Supervisor, via telephone on December 14, 2015.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

E. Harkness, Site Vice-President  
D. Hamilton, Site Operations Director  
T. Brown, Performance Improvement Director  
J. Ellis, Maintenance Director  
D. Reeves, Site Engineering Director

#### U.S. Nuclear Regulatory Commission

B. Dickson, Chief, Reactor Projects Branch 5

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened and Closed

05000440/2015004-01	NCV	Failure to Ensure Required 3 Hour Fire Barriers (gypsum board walls) Were In-Place (Section 1R05)
05000440/2015004-03	NCV	Failure to Properly Implement System Operating Instructions to Restore RHR "B" to Service (Section 4OA2.2)

### Opened

05000440/2015004-02	URI	Liquid Effluent Calibration (2R24)
---------------------	-----	------------------------------------

## 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

- eSOMS–Plant Narrative Logs; Dated October 28, 2015
- ONI–R10; Loss of AC Power; Revision 13
- ONI–S11; Hi/Low Voltage; Revision 10
- ONI–ZZZ–1; Tornado or High Winds; Revision 25
- NOP–OP–1003; Grid Reliability Protocol; Revision 7
- PAP–0102; Interface with the Transmission System Owner; Revision 14
- NORM–ER–3105; FENOC Switchyard; Revision 5
- CR 2015–14358; Perry Transmission Yard entry Requirements are Unclear; Dated October 21, 2015
- CR 2015–14733; Gap Identified for Entry Requirements to Perry Switchyard / Substation; Dated October 28, 2015
- GEN–MNT–0001; Control of Switchyard Activities; Revision 00
- Management Alignment and Ownership Meeting Package; Dated October 30, 2015
- CR 2015–15108; NRC Identified–Winter Readiness Item Not Complete; Dated November 4, 2015
- Perry Site Certification Letter for Winter Readiness 2015; Dated October 27, 2015
- NOP–WM–2001; Work Management Scheduling, Assessment and Seasonal Readiness Processes; Revision 18
- WO 200420744; Hydrant 31 Appears to be Leaking/CR 10–78440; September 25, 2015
- Notification 600989718; 0P54F3552 has a 120 DPM Packing Leak; September 4, 2015
- Notification 600997310; U2 TPC Radiant Heaters; Dated October 19, 2015

### 1R04 Equipment Alignment

- VLI–R44; Division 1 and 2 Diesel Generator Starting Air System (Unit1); Revision 6
- VLI–R45; Division 1 and 2 Diesel Generator Fuel Oil System (Unit 1); Revision 5
- VLI–R46; Division 1 and 2 Diesel Generator Jacket Water Systems (Unit 1); Revision 4
- VLI–R47; Division 1 and 2 Diesel Generator Lube Oil; Revision 7
- VLI–R48; Division 1 and 2 Diesel Generator Exhaust, Intake, and Crankcase Systems; Revision 6
- VLI–M15; Annulus Exhaust Gas Treatment System (Unit 1); Revision 4
- Perry USAR; Section 6.5; Fission Product Removal and Control Systems: Revision 13
- SOI–M15; Annulus Exhaust Gas Treatment System; Revision 11
- D 912–0605–00000; Reactor Building Annulus Exhaust Gas Treatment; Revision X
- ELI–S11; Power Transformer; Revision 8
- 1R05 Fire Protection
- Fire Drill Planning Guide; Scenario FDU–1500–100615; October 1, 2015
- FPI–FOP; Fuel Oil Pump House and Storage Tank; Revision 1
- PAP–1910; Fire Protection Program; Revision 33
- FPI–A–B02; Fire Brigade Drills; Revision 8
- Fire Drill Critique; FDU–1500–100615; Dated October 6, 2015

- CR 2015-13474; 2015 NRC Fire Protection Inspection: NRC Concerns During Triennial Fire Inspection Activities; Dated October 7, 2015
- FPI-1DG; Diesel Generator Building; Revision 7
- FPI-SB; Service Building; Revision 3
- FPI-A-A01; Preparation, Review, and Approval of Pre-Fire Plan and Fire Protection Instructions; Revision 4
- Drawing 131-0002-00000; Architecture Service Building First Floor and Second Floor Plans; Revision L
- Drawing 131-0003-00000; Architectural Service Building 3rd Floor Plan and Details; Revision H
- Drawing 131-0015-00000; Architectural Service Building TSC Plan at EL. 603'-6" and Schedules; Revision M
- FPI-0EW; Emergency Service Water Pumphouse; Revision 6
- FPI-0CC; Control Complex; Revision 9
- FPI-0IB; Intermediate Building; Revision 8
- Perry Updated Final Safety Analysis Report; Revision 19; Dated December 1, 2015
- eSOMS Plant Narrative Logs; Dated April 3 and 24, 2012, September 7 and 15, 2012, April 30, 2014, May 11, 2014, and December 2 and 9, 2014
- SSC-001; Appendix R Evaluation: Safe Shutdown Capability Report; Revision 5

#### 1R06 Flooding

- WO 200647955; Inspect and Dewater Manholes 1,2,3,4, and 18; Dated October 27, 2015
- PDB-H0055; Equipment Associated with Electrical Manholes; Revision 0
- Drawing 215-0711-00000; Electrical Conduit Layout Manholes and Underground Duct Runs-Plans; Revision S
- Drawing 302-0861-00000; Plant Foundation Underdrain System; Revision T
- D 921-616; Auxiliary Building Floor and Equipment Drains; Revision E
- D 911-0617-00000; Auxiliary Building Drains; Revision H
- D 921-0617-00000; Auxiliary Building Floor and Equipment Drains; Revision H
- PRA-PY1-FP-R0b; Probabilistic Risk Assessment Internal Flooding Notebook; Dated December 20, 2012
- CR 2014-00139; CR 2013-10119 and 2013-10825 did not Fully Evaluate NRC NCV 05000440/2013008-04; Dated January 6, 2014

#### 1R11 Licensed Operator Regualification Program

- Scenario Guide OT-3070-RP2D; Revision 0
- Scenario Guide OT-3070-PC1A; Revision 2
- Scenario Guide OT-3070-RP1D; Revision 0
- NOBP-TR-1112; FENOC Conduct of Simulator Training and Evaluation; Revision 2
- eSOMS Plant Narrative Log; Dated November 25, 2015
- NOP-OP-1002; Conduct of Operations; Revision 10

#### 1R12 Maintenance Effectiveness

- Perry Nuclear Power Plant, Plant Health Report 2015-01-Division 1 Standby Diesel and Fuel Oil Storage Tank
- Division 1 Diesel Fuel Oil Monthly and Annual Sample Results From May 30, 2012-September 29, 2015
- CHI-0005; Miscellaneous Sampling Systems; Revision 18



- CHI-0028; Color, Clear & Bright, API/Specific Gravity; Revision 5
- CHI-0043; Total Particulate Contamination in Diesel Fuel; Revision 9
- Perry Nuclear Power Plant, Plant Health Report 2015-01-Emergency Service Water
- ESW 'A' Pump-Total Flow Throttled (GPM) Graphs from May 25, 2004 Through September 25, 2015
- ESW 'B' Pump-Total Flow Throttled (GPM) Graphs from June 3, 2004 Through October 3, 2015
- ESW 'C' Pump-Total Flow Throttled (GPM) Graphs from April 1, 2005 Through December 1, 2015
- SOI-C11; Control Rod Drive Hydraulic System; Revision 25
- VLI-C11; Control Rod Drive Hydraulic System (CRDH); Revision 16
- Plant Health Committee Meeting Notes for "CRD Pump 'A' Pressure is Degrading"; Dated December 21, 2015

#### 1R13 Maintenance Risk Assessments and Emergent Work Control

- NOP-OP-1010; Operational Decision Making; Revision 5
- NOP-OP-1010; Operational Decision Making; Revision 6
- NOP-OP-1007; Risk Management; Revision 21
- NOP-OP-1007; Risk Management; Revision 22
- eSOMS Plant Narrative Logs; Dated October 21 and 22, 2015
- eSOMS Plant Narrative Logs; Dated November 25, 2015
- Perry Work Implementation Schedule; Week 09, Period 2, Non-Divisional; From 1200 Friday, 11/20/15 to 1200 Monday, 11/23/15
- WO 20047426; Replace Circuit Breaker
- Notification 600705163; Replace Circuit Breaker

#### 1R15 Operability Determinations and Functionality Assessments

- CR 2015-13758; Out of Spec Water and Sediment on Division 1 Fuel Oil Storage Tank Annual Sample; Dated October 12, 2015
- Delaval Engine and Compressor Division Vendor Manual; Enterprise Engine Instruction Manual; Appendix VIII
- Drawing 31-0225-00000; Standby Diesel Generator Fuel Oil Storage Tanks Assembly and Details; Revision A
- WO 200550462; Remove Water From Fuel Storage Tanks; Dated August 30, 2015
- ASTM D975; Standard Specification for Diesel Fuel Oils; Dated October 15, 2015
- REC-0104; Chemistry Specifications; Revision 38
- CR 2015-14435; Fuel Oil Sample, From the Fire Diesel FO Storage Tank, Failed on Water and Sediment; Dated October 22, 2015
- CR 2014-18715; Water in Bottom of Fire Diesel Storage Tank; Dated December 27, 2014
- CR 2014-18758; Back-up Samples Show Signs of Water from the Diesel Fire Pump Fuel Oil Storage Tank; Dated December 29, 2014
- CR 2015-14428; Some Containment Equalizing Valves Are Not Tested in the Accident Direction; Dated October 22, 2015
- PAP-1924; Risk-Informed Safety Assessment and Risk Management; Revision 8
- eSOMS Plant Narrative Logs Dated October 22 and 23, 2015
- Failure Mode Analysis; Fire Diesel Fuel Storage Tank; Dated October 14, 2015
- CR 2015-13759; Fire Diesel Fuel Oil Storage Tank Out of Spec for Water and Sediment; Dated October 12, 2015

- Calculation No. 0P42–0111; Self Weight Excitation Review of Hangers for Emergency Closed Cooling System; Addendum A–02
- Calculation No. 0P42–0111; Self Weight Excitation Review of Hangers for Emergency Closed Cooling System; Addendum A–01
- Condition Report 2015–10400; 2015 NRC PI & R Inspection Interim 10 CFR Part 21 Report Deviations While Utilizing Bentley Software STAAD.PRO on Safety Related Calculations; Dated August 4, 2015
- SVI–P53–T7312; Upper Containment Airlock Pneumatic System Leak Test, PEN #312; Dated October 28, 2015
- SOI–P53; Personnel Air Locks; Revision 10
- CR 2015–14746; Entry into Technical Specification 3.6.1.3 Condition E for Containment Upper Inner Airlock Door; Dated October 29, 2015
- CR 2015–14725; Upper Primary Containment Airlock Inner Door Pneumatic System (Small Seal) Would Not Stabilize; Dated October 28, 2015
- eSOMS Plant Narrative Log; Dated October 28, 2015
- Prompt Operability Determination CR 2015–12258; Evaluate Operability of the Emergency Service Water ‘A’ Subsystem with 0P42F0260A and 0P42F0265A Closed, Gagged, and Actuators Removed; Revision 0
- Perry Nuclear Power Plant USAR; Section 9.2.1; Emergency Service Water System; Revision 14
- Perry Nuclear Power Plant USAR; Section 9.1.3.3.4; Safety Evaluation Prior to Unit 2 Operation; Revision 14
- Perry Nuclear Power Plant USAR; Section 9.2.2.6; Cross-Tie Between Emergency Service Water and Unit 2 Emergency Closed Cooling; Revision 14
- Perry Nuclear Power Plant Technical Specifications; Section 3.7.1; Emergency Service Water System–Divisions 1 and 2; Revision 71

#### 1R19 Post-Maintenance Testing

- PTI–P54–P0036; Diesel Fire Pump Flow Data and Control Panel Functional Test; Dated October 3, 2015
- CR 2015–13238; Diesel Fire Pump Demonstrating Degraded Performance–PTI–P54–P0036; Dated October 3, 2015
- WO 200597039; Inspect All Low Voltage Terminal Boxes for Moisture Intrusion or Corrosion; Dated October 8, 2015
- WO 200588927; Add Oil to Transformer LH–2–B, approximately 70–80 Gallons; Dated October 8, 2015
- WO 200545197; Control Room Emergency Recirculation Fan ‘B’ Lubrication of Motor Bearings, Fan Shaft Bearings, and Coupling; Dated October 8, 2015
- WO 200545611; Lubricate and Inspect Control Room HVAC Supply Fan ‘B’; Dated October 8, 2015
- WO 200581801; Inspect and Cycle Control Room HVAC ‘B’ Discharge Tornado Damper; Dated October 8, 2015
- WO 200364308; Inspect Control Room Emergency Recirculation ‘B’ HVAC Duct Access Doors; Dated October 8, 2015
- WO 200581800; Replace Springs and Conduct Visual Inspection of Control Room HVAC Suction Tornado Damper; Dated October 8, 2015
- WO 200545204; Lubricate and Inspect Control Room HVAC Return Fan ‘B’; Dated October 8, 2015

- WO 200518367; H2 Analyzer 'A' Vertical Panel 5-year Panel Maintenance; Dated October 21, 2015
- WO 200422171 Hydrogen Analyzer (accident monitoring) Division 1 Calibration; Dated October 21, 2015
- PTI-M51-P0001; Hydrogen Analyzer (accident monitoring) Division 1 Calibration; Dated October 21, 2015
- SVI-M51-T0321A; Combustible Gas Control System Hydrogen Analyzer 'A' Calibration for 1H51-P022A; Dated October 21, 2015
- SOI-M51/56; Combustible Gas Control System and Hydrogen Igniters; Revision 26
- WO 200290987; Breaker EH1212 Overhaul; Dated October 21, 2015
- SOI-R43; Division 1 and 2 Diesel Generator System; Revision 45
- WO 200390813; Replace Hotwell Pump "C"; Dated November 2, 2015
- SOI-N21; Condensate System; Revision 24
- GEI-0049; AC and DC Motor Testing; Revision 8
- CR 2013-17076; MS-C-13-10-08: Finding Continued M&TE Program Non-Compliance; Dated December 24, 2013

#### 1R22 Surveillance Testing

- SVI-E12-T2001; RHR 'A' Pump and Valve Operability Test; Dated September 29, 2015
- SVI-E12-T2001; RHR 'A' Pump and Valve Operability Test; Dated October 1, 2015
- WO 200578459; (24M) RHR 'A' Pump and Valve Operability Test (PI); Dated September 29, 2015
- SVI-R43-T1318; Diesel Generator Start and Load Division 2; Dated October 8, 2015
- WO 200626159; SRV Pressure Actuation Channel 'A' Functional for 1B21-N668A; Dated October 28, 2015
- SVI-B21-T0369-A; SRV and Low-Low Set Pressure Actuation Channel Functional for 1B21-N668A; Dated October 28, 2015
- CR 2015-14729; Faulty Test Equipment Delayed Surveillance; Dated October 28, 2015
- WO 200549433; RCIC Pump and Valve Operability Test; Dated October 28, 2015
- SVI-E51-T2001; RCIC Pump and Valve Operability Test; Dated October 28, 2015
- WO 200562575; Hydrogen Igniter Operability Test; Dated April 21, 2015
- SVI-M56-T5418; Hydrogen Igniter Operability Test; Dated April 21, 2015
- CR 2015-03258; During Hydrogen Igniter Operability Test per SVI-M56-T5418 Several Igniters Were Found Failed; Dated March 12, 2015
- CR 2014-05780; Identified Non-conformance with Equipment Qualification Program Replacement for PY-M56 System; Dated March 27, 2014
- CR 2013-06685; Preventive Maintenance Task Inappropriately Assigned Grace; Dated May 28, 2013
- Perry Nuclear Power Plant Technical Specifications; Section 3.6.3.2; Primary Containment and Drywell Hydrogen Igniters; Revision 71

#### 1EP4 Emergency Action Level and Emergency Plan Changes

- Emergency Plan for Perry Nuclear Power Plant; Revisions 44 and 45
- Perry Nuclear Plant On-Shift Staffing Analysis Report; Revision 0
- KLD TR-481; Perry Nuclear Plant Development of Evacuation Time Estimates; Dated October 2012
- EPI-A2; Emergency Actions Based on Event Classification; Revisions 18 and 19
- EPI-A7; Operations Support Center Activation; Revisions 21 and 22
- EPI-B8; Protective Actions and Guides; Revisions 16 and 17

- EPI-B13; Determination of Core Damage Under Accident Conditions; Revisions 9 and 10
- NOP-LP-5002; Evaluation of Changes to Emergency Plans and Supporting Documents 10 CFR 50.54(q); Revision 6
- NOP-LP-5010; FENOC WebEOC; Revisions 0 and 1
- NOP-LP-5011; Emergency Response Drill and Exercise Program; Revisions 5, 6 and 7
- NOP-LP-5015; Field Monitoring Team-Radiation Monitoring Team Field Surveys; Revisions 1 and 2
- NOP-LP-5400; FENOC MIDAS Dose Assessment Software; Revisions 0 and 1
- PSI-0017; Drills and Exercises for Emergency Planning; Revisions 14, 15 and 16
- PY-2014-016-00; 10 CFR 50.54(q) Screen for EPI-A2 – “Emergency Actions Based on Event Classification” Revision; Dated November 19, 2014
- PY-2014-017-00; 10 CFR 50.54(q) Screen for NOP-LP-5400 – “FENOC MIDAS Dose Assessment Software” Revision; Dated November 13, 2014
- PY-2014-018-00; 10 CFR 50.54(q) Screen for NOP-LP-5015 – “Field Monitoring Team-Radiation Monitoring Team Field Surveys” Revision; Dated November 13, 2014
- PY-2014-019-00; 10 CFR 50.54(q) Screen for EPI-B0008 – “Protective Actions and Guides” Revision; Dated December 3, 2014
- PY-2014-020-00; 10 CFR 50.54(q) Screen for PSI-0017 – “Drills and Exercises for Emergency Planning” Revision; Dated December 3, 2014
- PY-2014-021-00; 10 CFR 50.54(q) Screen for NOP-LP-5010 – “FENOC WebEOC” Revision; Dated December 17, 2014
- PY-2015-002-00; 10 CFR 50.54(q) Screen for EPI-A7 – “Operations Support Center Activation” Revision; Dated January 29, 2015
- PY-2015-003-00; 10 CFR 50.54(q) Screen for NOP-LP-5011 – “Emergency Response Drill and Exercise Program” Revision; Dated March 17, 2015
- PY-2015-004-00; 10 CFR 50.54(q) Screen for EPI-B13 – “Determination of Core Damage Under Accident Conditions” Revision; Dated April 23, 2015
- PY-2015-005-00; 10 CFR 50.54(q) Screen for PSI-0017 – “Drills and Exercises for Emergency Planning” Revision; Dated June 12, 2015
- PY-2015-006-00; 10 CFR 50.54(q) Screen for “Emergency Plan for Perry Nuclear Power Plant” Revision; Dated May 1, 2015
- PY-2015-10-00; 10 CFR 50.54(q) Screen for NOP-LP-5011 – “Emergency Response Drill and Exercise Program” Revision; Dated June 29, 2015

## 2RS5 Radiation Monitoring Instrumentation

- Perry Operation Manual; Offsite Dose Calculation Manual; Dated 3/7/13
- Perry Nuclear Power Plant Annual Environmental and Effluent Release Report 2014
- SVI-G50-T5266; Liquid Radwaste Release Permit; Revision 20; Dated 3/27/15
- SVI-G50-T5266; Liquid Radwaste Release Permit; Revision 20; Dated 10/23/14
- SVI-G50-T5266; Liquid Radwaste Release Permit; Revision 20; Dated 1/24/13
- CHI-0006; Radiation Monitoring Setpoint Determination; Revision 19
- Perry Annual Environmental and Effluent Release Report 2014
- Perry Offsite Dose Calculation Manual; Dated 02/07/13
- SVI-D17-T8031; Unit-1 Vent Noble Gas Radiation Monitor Calibration for 1D17-K86; Revision 9
- PY-SVI-D17T8033; Unit-1 Vent Sampler Flow Rate Monitor 1H51-PO86 Calibration
- PY-SVI-D17T8031; Unit-1 Noble Gas Radiation Monitor Calibration for 1D17-K786
- PY-SVI-D17T8002; LRW to ESW Radiation Monitor Channel Calibration for D17-K606; Dated 11/6/13

- CHI-0007; Attachment 3: Liquid Effluent Post-Release Dose Data Log; Dated 11/10/14 to 05/02/15
- 4OA1 Performance Indicator Verification
- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 7
- NOBP-LP-401-10; Reactor Coolant System Leakage; October 2014 Through September 2015; Revision 2
- eSOMS Plant Narrative Logs; Dated October 1, 2014 Through September 30, 2015

#### 4OA2 Problem Identification and Resolution

- CR 2015-15089; Received HPCS and RCIC Suction Swap During RHR B Recovery; Dated November 4, 2015
- CR 2015-10501; Unexpected RCIC Isolation During SVI-E31T5395B; Dated August 5, 2015
- NOP-OP-1002; Conduct of Operations; Revision 10
- "Yellow" News Flash; Inadvertent Addition of Water to the Suppression Pool During System Restoration; Undated
- SOI-E12; Residual Heat Removal System; Revision 66
- SOI-E22A; High Pressure Core Spray System; Revision 36
- eSoms Plant Narrative Logs; Dated November 4, 2015
- CR 2015-15101; Schedule Change Required for Preconditioning Concern; Dated November 4, 2015
- NORM-ER-2001; Preconditioning Structures, Systems and Components; Revision 1
- CR 2015-15368; NRC ID: NRC Resident Inspector Identified Preconditioning Concern for Division 2 Diesel Generator; Dated November 10, 2015
- CR 2015-15795; Potential to Precondition Division 1 Diesel Generator for Performance of SVI-R43-T1317; Dated November 20, 2015
- WO 200636966; (31D) Diesel Generator Start and Load Division 2; Dated November 11, 2015
- CR 2015-07331; CR 2015-00628 Did Not Fully Evaluate NRC NCV 05000440/2014005-01 Unevaluated Preconditioning; Dated May 21, 2015
- CR 2015-13001; Preconditioning Evaluation of Standby Liquid Control Pump A Motor Lubrication PM; Dated September 30, 2015
- WO 200290987; Breaker EH1212 Overhaul; Dated October 23, 2015
- eSOMS Plant Narrative Logs; Dated November 8, 16, 23, 2015
- CR 2012-10238; Part 21 Event Number 48042: Reliability Degradation of Resistors in Trip Units and Readout Assemblies; Dated June 25, 2012

#### 4OA5 Other Activities; TI 2515/190

- DCR Notification 600962768; ONI-ZZZ-1, Include Sand Bag Doors; Dated April 17, 2015
- CR 2015-05079; External Flooding during a Probable Maximum Flooding Event (West Side of Plant); Dated April 12, 2015
- ECP 13-0802; Minor Stream Modification
- CR 2015-08036; PFA Needed for Site Flooding Issues; Dated June 8, 2015
- Prompt Functionality Assessment for External Plant Flooding Issues; Dated June 12, 2015
- Prompt Functionality Assessment for Maximum Precipitation/Flooding Event; Dated April 18, 2015

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
CR	Condition Report
DC	Direct Current
EAL	Emergency Action Levels
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IST	Inservice Testing
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OWA	Operator Workaround
PARS	Publicly Available Records System
PI	Performance Indicator
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
SRV	Safety/Relief Valve
SVI	Surveillance Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report
WO	Work Order

D. Hamilton

-2-

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter 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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Billy Dickson, Chief  
Branch 5  
Division of Reactor Projects

Docket No. 50-440  
License No. NPF-58

Enclosure:  
IR 05000440/2015004

cc: Distribution via LISTSERV®

**DISTRIBUTION:**

Kimyata MorganButler  
RidsNrrPMPerry Resource  
RidsNrrDorLpl3-2 Resource  
RidsNrrDirslrib Resource  
Cynthia Pederson  
Darrell Roberts  
Richard Skokowski  
[ROPreports.Resource@nrc.gov](mailto:ROPreports.Resource@nrc.gov)

Allan Barker  
Carole Ariano  
Linda Linn  
DRPIII  
DRSIII  
Jim Clay  
Carmen Olteanu

ADAMS Accession Number: ML16042A640

Publicly Available     Non-Publicly Available     Sensitive     Non-Sensitive

OFFICE	RIII	RIII	RIII	RIII
NAME	BDickson for RNg:bw	BDickson		
DATE	02/11/16	02/11/16		

**OFFICIAL RECORD COPY**