



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

January 30, 2017

EA-13-068

Mr. Bryan C. Hanson  
Senior VP, Exelon Generation Co., LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3—NRC INTEGRATED  
INSPECTION REPORT 05000237/2016004; 05000249/2016004;  
05000237/2016501 AND 05000249/2016501

Dear Mr. Hanson:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Dresden Nuclear Power Station, Units 2 and 3. On January 13, 2017, the NRC inspectors discussed the results of this inspection with Mr. J. Washko and other members of your staff. The inspectors documented the results of this inspection in the enclosed inspection report. The NRC also completed its annual inspection of the Emergency Preparedness Program. This inspection began on January 1, 2016, and issuance of this letter closes Inspection Report Number 2016501.

This inspection confirmed your implementation of the Confirmatory Order issued to you by the NRC on October 28, 2013 and updated on May 4, 2015. The inspectors independently reviewed information you provided, inspected records of activities that were completed, and determined that your actions were in compliance with the requirements delineated in the Confirmatory Order. The NRC has no further questions on this issue. There were no findings in this area.

Based on the results of this inspection, no U.S. Nuclear Regulatory Commission (NRC) identified findings and one self-revealed finding of very-low safety significance (Green) was identified. The finding was determined to involve a violation of NRC requirements. Further, the inspectors documented a licensee-identified violation which was determined to be of very low safety significance (Green) in this report. However, because of the very-low safety significance and because the issues were entered into your Corrective Action Program (CAP), the NRC is treating the issues as Non-Cited Violations (NCVs), in accordance with Section 2.3.2 of the NRC's Enforcement Policy.

B. Hanson

- 2 -

If you contest the violations or 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) the Regional Administrator, Region III; (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector at the Point Beach Nuclear Plant.

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

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response, (if any), will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

Sincerely,

**/RA/**

Jamnes Cameron, Chief  
Branch 4  
Division of Reactor Projects

Docket Nos: 50-237; 50-249  
License Nos: DPR-19; DPR-25

Enclosure:  
IR 05000237/2016004; 05000249/2016004;  
05000237/2016501; 05000249/2016501

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-237; 50-249  
License Nos: DPR-19; DPR-25

Report No: 05000237/2016004; 05000249/2016004;  
05000237/2016501; 05000249/2016501

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: October 1 through December 31, 2016

Inspectors: G. Roach, Senior Resident Inspector  
R. Elliott, Resident Inspector  
M. Domke, Inspector, Region III Office  
G. Edwards, Health Physicist  
M. Garza, Emergency Preparedness Inspector  
T. Go, Health Physicist  
M. Holmberg, Reactor Inspector  
J. Maynen, Senior Physical Security Inspector  
L. Torres, ASME Inspector, Illinois Emergency  
Management Agency

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

Enclosure

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## SUMMARY

Inspection Report 05000237/2016004, 05000249/2016004; 10/01/2016–12/31/2016; 05000237/2016501, 05000249/2016501; 01/01/2016 – 12/30/2016; Dresden Nuclear Power Station, Units 2 & 3; Radiological Hazard Assessment and Exposure Controls.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors and the annual review of emergency preparedness. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated November 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6, dated July 2016.

### **Cornerstone: Occupational Radiation Safety**

Green. A finding of very-low safety significance, and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 was self-revealed when workers violated a radiation work permit (RWP) by entering an area that was outside of the scope of the original RWP brief without obtaining a required appropriate brief, resulting in these workers receiving unplanned electronic dosimeter dose rate alarms. These workers immediately exited the area and reported the event to the radiation protection staff. The licensee entered these issues as two separate events into their CAP as Issue Reports (IR) 02735594 and IR 02735651.

The inspectors determined that the performance deficiency was more than minor in accordance with Inspection Manual Chapter 0612, Appendix B, because the finding impacted the program and process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, worker entry into areas beyond the RWP briefing could lead to unintended dose. The finding was determined to be of very-low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, because: (1) it did not involve as-low-as-reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The inspectors concluded that the cause of the finding involved a cross-cutting component in the human performance area of challenging the unknown because the individual did not stop when faced with an uncertain condition. Risks were not evaluated and managed before proceeding [H.11]. (Section 2RS1.3)

## **Licensee-Identified Violations**

### **Cornerstone: Emergency Preparedness**

One violation of very low safety significance (Green), which was identified by the licensee, has been reviewed by the inspector. Corrective actions taken, or planned, by the licensee have been entered into the licensee's Corrective Action Program. This violation and corrective actions are listed in Section 4OA7 of this report.

## **REPORT DETAILS**

### **Summary of Plant Status**

Unit 2 operated at or near full power from the start of the inspection period until December 10<sup>th</sup>, when operators reduced power below 20 percent to perform a planned maintenance outage D2M18. The unit returned to near full power on December 11<sup>th</sup>, where it operated at or near for the remainder of the inspection period.

Unit 3 began the inspection period in coast down to refueling outage D3R24 at 82 percent reactor power (797 MWe). Operators briefly reduced Unit output to 640 MWe on October 20<sup>th</sup>, to conduct Isolation Condenser testing. Unit shutdown began on the evening of October 30<sup>th</sup>, with the unit coming offline at midnight, beginning D3R24. Unit startup commenced early on November 16<sup>th</sup>, and the unit was synchronized to the grid later that night, ending the outage. The Unit returned to full power conditions on November 18<sup>th</sup>, where the unit operated at or near for the remainder of the inspection period.

### **1. REACTOR SAFETY**

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

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

##### **.1 Winter Seasonal Readiness Preparations**

##### **a. Inspection Scope**

The inspectors reviewed the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) 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:

- condensate storage tanks;
- cribhouse; and
- FLEX 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)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- 3B core spray while Buss 33–1 out-of-service(OOS);
- 2A turbine building closed cooling water (TBCCW) with 2B TBCCW OOS; and
- unit 2 emergency diesel generator (EDG) with 2/3 EDG OOS.

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, UFSAR, Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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



- Fire Zone 8.2.5D, U3 low pressure heater bay elevation 517’;
- Fire Zone 8.2.5E, U3 high pressure heaters/steam line elevation 517’;
- Fire Zone 1.1.2.2, U2 reactor building ground floor elevation 517’; and
- Fire Zone 11.1.1, U3 southwest corner room elevation 476’.

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

The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant’s Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant’s ability to respond to a security event.

Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee’s CAP.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08G)

From October 31, 2016, through November 8, 2016, the inspectors conducted a review of the implementation of the licensee’s Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, risk significant piping and components and containment systems in Unit 3.

The ISIs described in Sections 1R08.1 and 1R08.5 below constituted one inspection sample as defined in Inspection Procedure 71111.08–05.

.1 Piping Systems Inservice Inspection

a. Inspection Scope

The inspectors observed the following Non-Destructive Examinations mandated by the American Society of Mechanical Engineers (ASME) Section XI Code to evaluate compliance with the ASME Code Section XI and Section V requirements and if any indications and defects were detected, to determine if these were dispositioned in accordance with the ASME Code or an U.S. Nuclear Regulatory Commission (NRC) approved alternative requirement:

- manual ultrasonic (UT) examination of the core spray system tee-to-pipe welds 3/2/1404–10/10–48 and 10–48.1;
- manual UT examination of the high pressure coolant injection system elbow to pipe weld 3/2/2306–24/24–4;
- manual UT examination of the main steam system elbow-to-pipe welds 3/1/3001C–20/20–K2 and 3/1/3001D–20/20–K2;
- magnetic particle examination of the main steam system support attachment welds 3/1/3001B–20/M–564K SHT 25; and
- magnetic particle examination of the reactor pressure vessel upper head-to-flange weld 3/1/RPV UPP HD/–THD–FLG, RPV.

The inspectors observed the following examinations conducted as part of the licensee's commitments to NRC Generic Letter 88–01. "NRC Position on Intergranular Stress Corrosion Cracking in Boiling Water Reactor (BWR) Austenitic Piping," and BWRVIP 75a, "BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88–01 Inspection Schedules," to determine if the examinations were conducted in accordance with the licensee's Augmented Inspection Program, industry guidance documents and associated licensee examination procedures and if any indications and defects were detected, to determine if these were dispositioned in accordance with approved procedures and NRC requirements:

- automated, phased array UT examination of the isolation condenser system safe end-to-nozzle welds 3/1/1302–14/N5B–3 and 3/2/1302A–12/12–7.

During the prior outage nondestructive surface and volumetric examinations, the licensee did not identify any relevant/recordable indications. Therefore, no NRC review was completed for this inspection procedure attribute.

The inspectors reviewed records of the following pressure boundary weld completed for a risk significant system since the last Unit 3 refueling outage to determine if the licensee applied the preservice Non-Destructive Examinations and acceptance criteria required by the construction Code, and/or the NRC approved Code relief request:

- Repair Needed for Reactor Pressure Vessel Head Spray Pipe Flange – Remove Groove Indications, Weld 01 (Work Order 01595080–01).

Additionally, the inspectors reviewed the welding procedure specification and supporting weld procedure qualification records to determine whether the weld procedures were qualified in accordance with the requirements of the Construction Code and the ASME Code, Section IX.

b. Findings

No findings were identified.

.2 Not used.

.3 Not used.

.4 Not used.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems entered into the licensee's Corrective Action Program and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI-related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with Title 10 of the *Code of Federal Regulations*, Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

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

a. Inspection Scope

On October 11, 2016, 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.

b. Findings

No findings were identified.

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

a. Inspection Scope

On December 10, 2016, the inspectors observed the Unit 2 power reduction and drywell de-inerting to address steam leaks on moisture separator piping as well as uncoupled drywell equipment and floor drain sump pumps during D2M18. This was an activity that required heightened awareness or was 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 (if applicable);
- correct use and implementation of procedures;
- control board (or equipment) manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions.

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.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant system and the overall Maintenance Rule program:

- Unit 3 shutdown cooling system; and

- the inspectors assessed the licensee's overall Maintenance Rule program health by reviewing the licensee's 10 CFR 50.65(a)(3) report covering October 1, 2014, through September 30, 2016.

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

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

This inspection constituted two 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)

.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:

- Unit 2 YELLOW online risk with the low pressure coolant injection (LPCI) swing bus relay OOS;
- Unit 3 YELLOW shutdown risk due to lowered inventory;
- Unit 2 YELLOW online risk with Unit 3 250 Vdc battery OOS;
- Unit 3 YELLOW shutdown risk during Bus 33-1 outage; and
- Unit 3 YELLOW online risk with high pressure coolant injection (HPCI) OOS.

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

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- potential pre-conditioning of Unit 2 LPCI swing bus relay testing;
- Unit 2 HPCI Group IV containment isolation relay failure;
- Operating Experience (OPEX): electromagnetic relief valve (ERV) lock washer verification;
- 1C/1D MSIV closure time out of tolerance;
- Unit 2, 2–1601–33F, torus to drywell vacuum breaker would not close properly; and
- horizontal seismic stabilizing bar loose affecting 10 Unit 3 control rod drive insert lines and drywell penetration X–139A.

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 UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted six samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following permanent modifications:

- Unit 3 essential service system (ESS) uninterruptible power supply (UPS) safety-related power supply bypass line installation; and
- Unit 3 main steam line isolation valve (MSIV) limit switch relocation.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two permanent plant modification samples as defined in IP 71111.18–05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- 3A reactor recirculation pump seal package following replacement;

- Unit 3 drywell equipment drain sump (DWEDS) primary containment isolation valve (PCIV), 3–2001–5 valve timing, local leak rate test (LLRT), and leakage test post replacement;
- Unit 3 inbound 'D' MSIV following internals replacement;
- Unit 3 ERVs following actuator replacement and refurbishment; and
- Unit 3 HPCI following motor gear unit and motor speed changer replacements.

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 UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors reviewed the Outage Safety Plan (OSP) and contingency plans for the Unit 3 refueling outage (RFO) D3R24, conducted October 31 – November 16, 2016, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below:

- licensee configuration management, including maintenance of defense-in-depth commensurate with the OSP for key safety functions and compliance with the applicable TS when taking equipment out of service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;



- installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TS;
- licensee fatigue management, as required by 10 CFR 26, Subpart I;
- refueling activities, including fuel handling and core verification;
- startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell and torus (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RFO sample as defined in IP 71111.20–05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- Unit 3 MSIV LLRT (isolation valve);
- Unit 3 feed water check valves LLRT (isolation valve);
- Unit 3 Division I emergency core cooling system (ECCS) functional and under voltage test (routine); and
- Unit 3 ATWS [anticipated transient without scram] RPT [recirculation pump trip] (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 UFSAR, 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, 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;
- 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 two routine surveillance testing samples, and two containment isolation valve samples as defined in IP 71111.22, Sections–02 and–05. In addition, the inspectors did not identify any performance degradation in the RCS leakage for the entire cycle. The reactor coolant system leak detection inspection sample was not performed as defined in IP 71111.22, Section–02.

b. Findings

No findings were identified.

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

.1 Emergency Response Organization Staffing and Augmentation System

a. Inspection Scope

In Dresden Nuclear Power Station, Units 2 and 3 – NRC Integrated Inspection Report 05000237/2016001 and 05000249/2016001 (ADAMS Accession Number ML16120A618), the inspectors documented the completion of a partial sample for Inspection Procedure 71114.03, Emergency Response Organization Staffing and Augmentation System, and committed to completing a full sample by the end of the

calendar year of 2016. This inspection procedure was completed through an in-office review of the licensee's procedures and corrective actions associated with the site's backup method of Emergency Response Organization (ERO) activation and augmentation.

The completion of this ERO augmentation testing inspection constituted one sample as defined in Inspection Procedure (IP) 71114.03.

b. Findings

No findings were identified.

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

a. Inspection Scope

The regional inspector performed an in-office review of the latest revisions to the Emergency Plan, Emergency Action Levels (EALs), and EAL Bases document to determine if these changes decreased the effectiveness of the Emergency Plan. The inspector also performed a review of the licensee's Title 10, *Code of Federal Regulations*, Part 50.54(q) change process, and Emergency Plan change documentation to ensure proper implementation for maintaining Emergency Plan integrity.

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

This EAL and Emergency Plan Change inspection constituted one sample as defined in IP 71114.04.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Training Observation

a. Inspection Scope

The inspector observed a simulator training evolution for licensed operators on December 13, 2016, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment to this report.

This inspection of the licensee's training evolution with emergency preparedness drill aspects constituted one sample as defined in IP 71114.06–06.

b. Findings

No findings were identified.

**2. RADIATION SAFETY**

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

.1 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors assessed the licensee's current and historic isotopic mix, including alpha emitters and other hard-to-detect radionuclides. The inspectors evaluated whether survey protocols were reasonable to identify the magnitude and extent of the radiological hazards.

The inspectors determined if there have been changes to plant operations since the last inspection that may have resulted in a significant new radiological hazard for onsite individuals. The inspectors evaluated whether the licensee assessed the potential impact of these changes and implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard. The inspectors reviewed the last two radiological surveys from selected plant areas and evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and performed independent radiation measurements as needed to verify conditions were consistent with documented radiation surveys.

The inspectors assessed the adequacy of pre-work surveys for select radiologically risk-significant work activities.

The inspectors evaluated the Radiological Survey Program to determine if hazards were properly identified. The inspectors discussed procedures, equipment, and performance of surveys with radiation protection staff and assessed whether technicians were knowledgeable about when and how to survey areas for various types of radiological hazards.

The inspectors observed work in potential airborne areas to assess whether air samples were being taken appropriately for their intended purpose and reviewed various survey records to assess whether the samples were collected and analyzed appropriately. The inspectors also reviewed the licensee's program for monitoring contamination which has the potential to become airborne.

These inspection activities constituted one complete sample as defined in Inspection Procedure (IP) 71124.01–05.

b. Findings

No findings were identified.

.2 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated ambient radiological conditions during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, radiation work permits (RWPs), and worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination controls. The inspectors evaluated the licensee's use of electronic alarming dosimeters in high noise areas as high radiation area monitoring devices.

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with licensee procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the licensee properly employed a U.S. Nuclear Regulatory Commission approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in work areas with significant dose rate gradients.

For select airborne area RWPs, the inspectors reviewed airborne radioactivity controls and monitoring, the potential for significant airborne levels, containment barrier integrity, and temporary filtered ventilation system operation.

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials stored within pools and assessed whether appropriate controls were in place to preclude inadvertent removal of these materials from the pool.

These inspection activities constituted one complete sample as defined in IP 71124.01-05.

b. Findings

No findings were identified.

.3 Radiation Worker Performance and Radiation Protection Technician Proficiency (02.07)

a. Inspection Scope

The inspectors observed radiation worker performance and assessed their performance with respect to radiation protection work requirements, the level of radiological hazards present, and RWP controls.

The inspectors assessed worker awareness of electronic alarming dosimeter set points, stay times, or permissible dose for radiologically significant work as well as expected response to alarms.

The inspectors observed radiation protection technician performance and assessed whether the technicians were aware of the radiological conditions and RWP controls and whether their performance was consistent with training and qualifications for the given radiological hazards.

The inspectors observed radiation protection technician performance of radiation surveys and assessed the appropriateness of the instruments being used, including calibration and source checks.

These inspection activities constituted one complete sample as defined in IP 71124.01–05.

b. Findings

Introduction: A self-revealed finding of very-low safety significance (Green) and associated NCV of Technical Specification 5.4.1, Procedures, was identified when radiation workers violated RWP requirements by entering areas that were outside of the scope of the received RWP briefings. The workers' failure to comply with the requirements to obtain a briefing for actions that were beyond the scope in the received RWP briefing were within the licensee's ability to foresee and correct and should have been prevented, therefore constituting a performance deficiency. This action resulted in workers receiving unplanned electronic dosimeter dose rate alarms.

Description: On October 31, 2016, the radiation protection staff gave RWP briefings to two individuals on two separate outage activities, specifically; (1) inside Unit 3 turbine building 517 feet elevation performing feedwater pump maintenance; and (2) for work inside the moisture separator area installing scaffold decking. The two workers worked under separate RWPs; the first was RWP DR-03-16-00816 and the second was RWP DR-03-16-00411. Both RWPs specified that a "radiation protection brief was required prior to accessing areas greater than seven feet."

The workers were briefed on the RWPs by the radiation protection staff prior to commencing their activities; however, these two individuals failed to communicate to the radiation protection staff that they would be climbing on scaffolds above 7 feet. The first worker, a mechanic who was working on the feed water pump, climbed a scaffold across the pump area beyond the area that this individual was briefed and came across a shielded surge tank drain line, an area that radiation protection staff had not surveyed. The other worker, a contractor installing scaffold deck pans, climbed above seven feet from the area that he was briefed and came in contact with a Rad-Waste Max-recycle line, an area that also was not surveyed during the early stages of the Dresden Unit 3 outage.

The mechanic came within 3 feet of a shielded drain line that read 100 mrem/hr on contact and this worker received an unplanned dose rate alarm of 41 mrem/hr, with a 40 mrem/hr dose rate alarm setting. The other individual, a contractor, climbed 7 feet on a scaffold above an area the he was briefed and received an unplanned dose rate alarm of 150 mrem/hr on contact with Rad Waste Max-recycle line. Follow-up surveys of the Max-recycle line indicated 156 mrem/hr on contact. The mechanic had a cumulative dose of 1 mrem and the contractor received 15 mrem from these entries.

Analysis: The inspectors determined that the radiation workers' failure to comply with the requirements stated in the RWP were within the licensee's ability to foresee and correct

and should have been prevented, therefore constituted a performance deficiency. The performance deficiency was determined to be more-than-minor in accordance with Inspection Manual Chapter 0612, Appendix B, "Issue Screening," because the performance deficiency impacted the program and process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, worker entry into areas beyond the RWP briefing could lead to unintended dose.

The finding was determined to be of very-low safety significance (Green) in accordance with Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, because: (1) it did not involve as-low-as-reasonably-achievable (ALARA) planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised.

The inspectors concluded that the cause of the finding involved a cross-cutting component in the human performance area of challenging the unknown because these individuals did not stop when faced with uncertain conditions. Risks were not evaluated and managed before proceeding. Specifically, a mechanic and a contract worker proceeded into areas that they were not briefed to enter which contained unknown dose rates. [H.11]

Enforcement: Technical Specification 5.4.1, Procedures, states in part that "written procedures shall be established, implemented and maintained covering activities contained in Regulatory Guide 1.33, Revision 2, Appendix-A, dated February 1978." NRC Regulatory Guide 1.33, Appendix A, Section 7 addresses "Procedures for Control Radioactivity" and Section 7e "Radiation Protection Procedures, section (1) addresses Access Control to Radiation Areas Including Radiation Work Permits". RWPs DR-03-16-00816 and DR-03-16-00411 both specified that a "radiation protection brief was required prior to accessing areas greater than seven feet."

Contrary to the above, on October 31, 2016, the licensee failed to obtain the required radiation protection brief prior to accessing areas greater than seven feet per RWPs DR-03-16-00816 and DR-03-16-00411.

Specifically, two technicians working in a radiation area under RWPs DR-03-16-00816 and DR-03-16-00411 entered into areas above 7 feet that were not discussed during RWP briefings. This caused the workers to receive unplanned dose rate alarms. Upon receiving the dose rate alarms, these individuals exited the area and immediately reported to the radiation protection staff. Because this violation was of very-low safety significance and was entered into the licensee's Corrective Action Program as IR 02735594 and IR 02735651 this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. **(NCV 05000237/2016004-01; 05000249/2016004-01: Failure to Comply With Radiation Work Permit Requirements Resulting In Unplanned Dose Rate Alarms)**

.4 Problem Identification and Resolution (02.08)

a. Inspection Scope

The inspectors assessed whether problems associated with radiological hazard assessment and exposure controls were being identified at an appropriate threshold and were properly addressed for resolution. For select problems, the inspectors assessed the appropriateness of the corrective actions. The inspectors also assessed the licensee's program for reviewing and incorporating operating experience.

The inspectors reviewed select problems related to human performance errors and assessed whether there was a similar cause and whether corrective actions taken resolve the problems.

The inspectors reviewed select problems related to radiation protection technician error and assessed whether there was a similar cause and whether corrective actions taken resolve the problems.

These inspection activities constituted one complete sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

2RS2 Occupational As-Low-As-Reasonably-Achievable Planning and Controls (71124.02)

.1 Implementation of As-Low-As-Reasonably-Achievable and Radiological Work Controls (02.04)

a. Inspection Scope

The inspectors reviewed the radiological administrative, operational, and engineering controls planned for selected radiologically significant work activities and evaluated the integration of these controls and as-low-as-reasonably-achievable (ALARA) requirements into work packages, work procedures and/or RWPs.

The inspectors conducted observations of in-plant work activities and assessed whether the licensee had effectively integrated the planned administrative, operational, and engineering controls into the actual field work to maintain occupational exposure ALARA. The inspectors observed pre-job briefings, and determined if the planned controls were discussed with workers. The inspectors evaluated the placement and use of shielding, contamination controls, airborne controls, RWP controls, and other engineering work controls against the ALARA plans.

The inspectors assessed licensee activities associated with work-in-progress to ensure the licensee was tracking doses, performed timely in-progress reviews, and, when jobs did not trend as expected, appropriately communicated additional methods to be used to reduce dose. The inspectors evaluated whether health physics and ALARA staff were involved with the management of radiological work control when in-field activities deviated from the planned controls. The inspectors assessed whether the Outage Control Center and station management provided sufficient support for ALARA re-planning.



The inspectors assessed the involvement of ALARA staff with emergent work activities during maintenance and when possible, attended in-progress review discussions, outage status meetings, and/or ALARA committee meetings.

The inspectors compared the radiological results achieved with the intended radiological outcomes and verified that the licensee captured lessons learned for use in the next outage.

These inspection activities constituted one complete sample as defined in IP 71124.02–05.

b. Findings

No findings were identified.

.2 Radiation Worker Performance (02.05)

a. Inspection Scope

The inspectors observed radiation worker and radiation protection technician performance during work activities being performed in radiation areas, airborne radioactivity areas, or high radiation areas to assess whether workers demonstrated the ALARA philosophy in practice and followed procedures. The inspectors observed radiation worker performance to evaluate whether the training and skill level was sufficient with respect to the radiological hazards and the work involved.

The inspectors interviewed individuals from selected work groups to assess their knowledge and awareness of planned and/or implemented radiological and ALARA work controls.

These inspection activities constituted one complete sample as defined in IP 71124.02–05.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures (MS05) performance indicator for Dresden Nuclear Power Station, Units 2 and 3, for the period from the fourth quarter of 2015 through the third quarter of 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance

contained in the NEI Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee’s operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of October 1, 2015, through September 30, 2016, 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 two safety system functional failures samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Leakage (BI02) performance indicator for Dresden Nuclear Power Station, Units 2 and 3, for the period from the fourth quarter of 2015 through the third quarter of 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee’s operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of October 1, 2015, through September 30, 2016, 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 two reactor coolant system leakage samples as defined in IP 71151–05.

b. Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness (OR01) performance indicator for the period from the first quarter 2015 through the second quarter 2016. The inspectors used PI definitions and guidance contained in the NEI Document 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 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 if the indicator related data was adequately assessed and reported. To assess the adequacy of the licensee’s PI data

collection and analyses, the inspectors discussed with radiation protection staff the scope and breadth of its data review and the results of those reviews. 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.

This inspection constituted one occupational exposure control effectiveness sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 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 (PR01) performance indicator for the period from the first quarter 2015 through the second quarter 2016. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report 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.

This inspection constituted one Radiological Effluent Technical Specification/Offsite Dose Calculation Manual radiological effluent occurrences sample as defined in IP 71151-05.

b. Findings

No findings were identified.

## 4OA2 Identification and Resolution of Problems (71152)

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

#### a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's corrective action program at an appropriate threshold, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Some minor issues were entered into the licensee's corrective action program as a result of the inspectors' observations; however, they are not discussed in this report.

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

#### b. Findings

No findings were identified.

### .2 Semi-Annual Trend Review

#### a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of June 2016 through December 2016, although some examples expanded beyond those dates where the scope of the trend warranted.

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

#### b. Observations

During the period covered in this inspection sample, the inspectors and the licensee noted similar trends in equipment and program performance. Although these errors did not always result in any immediate adverse consequences, a potential trend in these areas is apparent and suggests that additional licensee attention to affect corrective

actions may be appropriate. The licensee entered the following potential adverse trends into their CAP during this time period: steam leaks on Unit 2 (IR 3956785) and interlock door performance (IR 3955902). The Inspectors also identified steam leaks on Unit 3 as a potential adverse trend. Specific examples associated with these trends included, but were not limited to:

- On November 21, 2016, the U2 nuclear station operator was monitoring the 2B moisture separator drain tank (MSDT) leak repair via camera and noticed steam near the repair. The field supervisor verified the steam was coming from the Furmanite temporary repair of the 2B MSDT pipe plug. The original leak was identified on May 27, 2016, (IR 2674900) and a temporary repair (Furmanite box) was installed, which started leaking again on June 15, 2016, (IR 2681796). Additionally, there was a steam leak on the 2A MSDT (IR 2736509) which the licensee took action on December 10, 2016, to repair both leaks with a planned down power to less than 20 percent.
- On November 8, 2016, during Unit 3 Division 1 undervoltage (UV) testing, secondary containment differential pressure decreased to less than -0.25 in Water Column vacuum when SBGT started and reactor building ventilation secured. This resulted in a loss of secondary containment and entry into Technical Specification LCO 3.6.4.1 Condition A for Unit 2 which was in Mode 1 (IR 2738559). The loss of secondary containment vacuum required the licensee to make an Emergency Notification System report (52355) for an event or condition that could have prevented the fulfillment of a safety function. During the UV testing the inner door of the Unit 2 reactor building material interlock was open in support of D3R24 which meant the exterior door was the secondary containment boundary. The exterior door was degraded resulting in excessive leakage. It was recently noted that the seals were badly damaged on the exterior door, but no IR was written to document the degraded condition. The interior reactor building material interlock door was closed and reactor building differential pressure was restored below TS limits. The licensee subsequently replaced the outer door seals.
- On October 14, 2016, operators in the plant noted a loud noise coming from the Unit 3 high pressure heater bay. Subsequent investigation identified a steam leak on a line from the high pressure turbine to the 3D moisture separator. The steam plume was directed straight up about 8–10 feet toward the ceiling. The steam was not directly impinging on any plant components or electrical equipment and no water was accumulating in the area which could adversely affect adjacent equipment. The condition was monitored and repaired in November 2016 during the D3R24 outage.

This review constituted one semi-annual trend review inspection sample as defined in IP 71152.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues: Review of Final Corrective Actions Associated with Design Control Violation, Non-Cited Violation 05000237/2016001–01; 05000249/2016001–01, (Failure to Maintain Design Control of the 2/3 Emergency Diesel Generator)

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents, specifically IR 2593932, "2/3 EDG Ventilation System Dampers Do Not Failsafe Open." The inspectors interviewed personnel, performed walkdowns, reviewed design change documents, observed the installation of plant modifications, and verified the completion of and assessed the adequacy of plant design corrective actions taken in response to a loss of control pneumatics to the 2/3 EDG room ventilation system on November 6, 2015.

The inspectors' review and evaluation was focused on the licensee's corrective actions to ensure they: were complete, accurate, and timely; considered extent of condition; provided appropriate classification and prioritization; provided identification of root and contributing causes; were appropriately focused; included action taken which resulted in the correction of the identified problem; identified negative trends; ensured operating experience was adequately evaluated for applicability; and communicated applicable lessons learned to appropriate organizations. The inspectors noted that the licensee's corrective actions addressed deficiencies in the design of the 2/3 EDG ventilation system, specifically creating fail-safe system response for the inlet and exhaust dampers to a loss of non-safety related pneumatic supply air and back-up nitrogen.

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

b. Background

On November 6, 2015, with the normal source of pneumatics to the 2/3 EDG room ventilation damper positioning system secured for maintenance, on two occasions for approximately twenty minutes each the back-up non-safety related nitrogen source depressurized causing the room ventilation dampers to fail in a closed condition. Based on the licensee's understanding of system performance a loss of 2/3 EDG room ventilation damper control pneumatics was supposed to result in the dampers failing conservatively open. The licensee had not previously tested the performance of the back-up nitrogen system nor had they tested EDG room ventilation system response to a complete loss of pneumatics to ascertain actual system response.

The loss of 2/3 EDG ventilation and therefore the inability of the 2/3 EDG to be able to complete its operational mission time during a design basis accident due to a loss of non-safety related pneumatic control air was originally documented as a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," in NRC Integrated Inspection Report 05000237/2016001; 05000249/2016001 (ADAMS Ascension Number ML16120A618).

c. Observations

As discussed in the "Inspection Scope" section above, the inspectors' review was focused on the licensee's design and installation of a plant design modification to create a fail-safe configuration for the 2/3 EDG ventilation system during a loss of operating pneumatics to the inlet and exhaust ventilation dampers. The inspectors noted that the design modification performed by the licensee adequately addressed the cause of the event which resulted in a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and would enable the 2/3 EDG to achieve its safety mission during a design basis accident.

The inspectors review of this plant modification included an assessment of whether the 2/3 EDG ventilation retained its automatic isolation capability during fire conditions in the 2/3 EDG room. The inspectors noted that the modification retained the requirement that the inlet and exhaust dampers close upon a fire detection system signal in the 2/3 EDG room in accordance with the site's Fire Protection Report and National Fire Protection Association (NFPA) codes and standards (NFPA 12: Standard on Carbon Dioxide Extinguishing Systems).

d. Findings

No findings were identified.

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

.1 (Closed) Supplemental Licensee Event Report 05000237/2016-002-01, "Unit 2 HPCI Inlet Steam Drain Pot Piping Leak Resulting in HPCI Inoperability"

a. Inspection Scope

The inspectors reviewed the licensee's supplemental response to and assessment of a through-wall leak which developed on the Unit 2 HPCI inlet drain pot drain piping. Specifically, on May 16, 2016, while in standby operation, a through-wall steam leak was observed coming from the Unit 2 HPCI 1 inch diameter inlet drain pot drain piping upstream of the main condenser return isolation valve 2-2301-29. The leak was identified to be from 2-2323-1", which is ASME Code Class 2 piping. Due to the piping being ASME Code Class 2, it was required to be isolated in accordance with Technical Requirements Manual 3.4.a, Structural Integrity. Isolating this piping resulted in the Unit 2 HPCI system becoming inoperable. Follow-up investigation and testing of the failed component indicated a failure mechanism of liquid droplet impingement. The piping that failed was believed to have been replaced in 2013 with stainless steel, a material resistant to liquid drop impingement, but was not replaced due to a work package revision/scope removal change prior to execution. Additional information provided by this Supplemental LER included details on the licensee inadvertently removing the affected pipe replacement from the work schedule and extent of condition reviews for work scope revisions.

The inspectors review of the licensee's initial LER for this issue was documented in NRC Integrated Inspection Report 05000237/2016003; 05000249/2016003 (ADAMS ascension number ML16298A205) and resulted in a self-revealed finding of very low safety significance (Green) and associated NCV of TS 5.4.1.a, "Procedures."

The licensee reported this event in accordance with 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. Documents reviewed are listed in the Attachment to this report. This LER is closed.

This event follow up review constituted one sample(s) as defined in IP 71153–05.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) Apparent Violation 05000237/2013407–01; 05000249/2013407–01: Failure to Satisfy Access Authorization Program Requirements Involving Licensed Operators

On October 28, 2013, the U.S. Nuclear Regulatory Commission (NRC) issued Confirmatory Order EA–13–068 (Order) (ADAMS ascension number ML13298A144) in lieu of enforcement action to the licensee. As a result of a National Labor Relations Board hearing and settlement, on May 4, 2015, the Order was relaxed to allow Exelon additional time to complete the required actions in V.A.1, V.A.2, and V.A.3 (ADAMS ascension number ML15125A103). The elements of the agreement between the NRC and the licensee consisted of the following five specific actions:

- Item V.A.1: By November 30, 2015, revise Exelon procedure SY–AA–103–513, “Behavioral Observation Program”: (1) to provide additional guidance on the types of offsite activities, if observed, or credible information that should be reported to reviewing officials; and (2) to ensure that procedural requirements to pass information forward without delay are clearly communicated.
- Item V.A.2: By January 15, 2016, Exelon shall provide training to Exelon staff on the revision described in V.A.1.
- Item V.A.3: By May 31, 2016, Exelon shall develop and conduct an effectiveness assessment of its revised procedure and training to determine if Exelon personnel remain aware of the need to report observed offsite aberrant behavior or credible information.
- Item V.B: Within 90 days of the effective date of the Confirmatory Order, Exelon will develop and make a presentation based on the facts and lessons learned from the events that gave rise to the Confirmatory Order. Exelon agrees to make this presentation at an appropriate industry forum and to submit an operating experience summary to an industry-wide organization. Exelon will make the presentation materials available to the onsite NRC resident inspectors at the Dresden Station.
- Item V.C: Unless otherwise specified, Exelon will submit a written status of the Confirmatory Order action items to the NRC Region III Director of Reactor Safety, by October 31, 2014, and annually thereafter, until all actions are completed.



The inspectors independently verified that the required actions listed above were completed. Specifically, the inspectors reviewed licensee records and conducted interviews with both plant management and selected plant staff to verify that:

- On November 18, 2015, licensee procedure SY-AA-103-513, "Behavioral Observation Program," Revision 12 was issued. This revision contained additional guidance on reporting and forwarding credible information. (Item V.A.1.)
- On January 14, 2016, a supervisory training brief was given to all staff regarding the changes to procedure. Exelon-specific training regarding the Behavioral Observation Program (BOP) was added to the Generic Plant Access Training to ensure that the BOP training will continue. (Item V.A.2.)
- On May 31, 2016, Exelon Corporate staff completed an effectiveness review of SY-AA-103-513 and concluded that the procedure was effective. The inspectors also discussed the procedure changes with selected plant staff and independently concluded that the procedure was effective. (Item V.A.3)
- On December 4, 2013, the licensee prepared and made a presentation at the Nuclear Energy Institute Advisory Task Force Meeting. The Resident Inspectors were provided a copy of the briefing materials. (Item V.B.)
- Exelon provided written status updates to the NRC Region III Director of Reactor Safety on September 30, 2014, October 28, 2015, and October 13, 2016. (Item V.C.)

Based on the licensee's actions described above, and in accordance with Confirmatory Order EA-13-068 as revised on May 4, 2015, the NRC has completed its review of the licensee's implementation of the conditions of the Order. In addition, Apparent Violation 05000237/2013407-01; 05000249/2013407-01 is closed.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On January 13, 2017, the inspectors presented the inspection results to Mr. J. Washko, 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 Radiation Safety Program review with Mr. P. Karaba, Site Vice President, on November 4, 2016.
- The results of the Inservice inspection with Station Plant Manager, Mr. J. Washko, on November 8, 2016.
- The results of the Emergency Preparedness inspection with Regulatory Assurance Manager, Mr. B. Franzen, on December 20, 2016.

- The results of the Emergency Preparedness Program inspection with Mr. D. Doggett, Emergency Preparedness Manager, conducted over the phone on December 20, 2016.

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

### .3 Management Briefing

The security inspector presented the results of a review regarding the licensee's activities in response to a Confirmatory Order. Mr. B. Franzen, and other members of licensee management attended the briefing on November 29, 2016. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

### 4OA7 Licensee-Identified Violations

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

- Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(2) requires that a holder of a nuclear power reactor operating license follow and maintain the effectiveness of an emergency plan that meets the requirements in 10 CFR Part 50, Appendix E and the planning standards of 10 CFR 50.47(b). Title 10 CFR Part 50.47(b)(4) states, "A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures."

Contrary to the above, between April 2013, and February 2016, the licensee failed to maintain the effectiveness of the emergency plan by failing to maintain the effluent parameters contained in the standard emergency classification and action level scheme. Specifically, the standard emergency classification and action level scheme associated with the radiological effluents at Dresden Nuclear Power Station was not updated to reflect the changes in the X/Q dispersion factor that were made during the April 2013, Offsite Dose Calculation Manual revision. Consequently, the effluent monitor emergency classification and action level thresholds were non-conservative by a factor of 3.8 until this condition was identified and corrected by Dresden Nuclear Power Station in February 2016.

The inspectors determined that the finding was of very low significance (Green) in accordance with NRC Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process, Figure 5.4–1, because the emergency action level classification of an Unusual Event, RU1, would be declared in a degraded manner, not within the required 15 minutes.

The emergency action level classification for the Alert, Site Area Emergency, and General Emergency (RA1, RS1, and RG1) would still be capable of being declared in timely manner, within 15 minutes, using alternate conditions within the emergency action level. Because this finding is of very low safety significance, and has been entered into Exelon's CAP under IR 02652711, this violation is being treated as a Green NCV consistent with Section 2.3.2 of the NRC's Enforcement Policy.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

P. Karaba, Site Vice President  
J. Washko, Station Plant Manager  
D. Anthony, NDE Services Manager  
L. Antos, Manager Site Security  
C. Bachman, Plant Engineering  
R. Bauman, Shift Operations Superintendent  
M. Budelier, Senior Engineering Manager  
H. Bush, Development Manager  
J. Condreay, Operations Training Instructor  
T. Dean, Director, Site Training  
D. Doggett, Emergency Preparedness Manager  
B. Franzen, Regulatory Assurance Manager  
F. Gogliotti, Director, Site Engineering  
P. Hansett, Work Control Director  
R. Johnson, Chemistry  
D. Ketchledge, Engineering  
J. Kish, Site ISI Lead  
K. Kretsinger, Security Operations Supervisor  
S. Matzke, Corrective Action Program Coordinator  
A. McMartin, Manager Site Chemistry, Environment & Radwaste  
J. Miller, NDE Level III  
G. Morrow, Operations Director  
M. Overstreet, Radiation Protection Manager  
M. Pavey, Senior Health Physicist  
T. Pille, Security Training Supervisor  
J. Quinn, Director, Site Maintenance  
W. Remiasz, Outage Manager  
B. Sampson, OR Manager  
D. Thomas, Training Manager  
D. Walker, Regulatory Assurance – NRC Coordinator

#### U.S. Nuclear Regulatory Commission

J. Cameron, Chief, Reactor Projects, Branch 4

#### IEMA

M. Porfirio, Resident Inspector, Illinois Emergency Management Agency  
L. Torres, ASME Inspector, Illinois Emergency Management Agency

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000237/2016004-01	NCV	Failure to Comply With Radiation Work Permit
05000249/2016004-01		Requirements Resulting In Unplanned Dose Rate Alarms (Section 2RS1.3)

### Closed

05000237/2016004-01	NCV	Failure to Comply With Radiation Work Permit
05000249/2016004-01		Requirements Resulting In Unplanned Dose Rate Alarms (Section 2RS1.3)
05000237/2013407-01	AV	Failure to Satisfy Access Authorization Program
05000249/2013407-01		Requirements Involving Licensed Operators (Section 4OA5.1)
05000237/2016-002-01	LER	Unit 2 HPCI Inlet Steam Drain Pot Piping Leak Resulting in HPCI Inoperability (Section 4OA3.1)

### Discussed

05000237/2016001-01	NCV	Failure to Maintain Design Control of the 2/3 Emergency
05000249/2016001-01		Diesel Generator (Section 4OA2.3)

## 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

- WO 01929178-01; "Access Door to Breakers on MMC 29-3 Has a Broken Latch"
- WO 01893374-01; "D2/3 ANN PM Un-cross tie MCC 20-1 and 30-1 Post RFL"
- WO 01888741-01; "An PM Preparation for Cold Weather Changes for R/W"
- WO 01888736; "AN PM Preparation for Cold Weather Unit 1"
- WO 01882796; "AN PM Preparation for Cold Weather for Lift Station"
- WO 01882793-01; "AN Com Preparation for Cold Weather for Unit 3"
- WO 01882789-01; "AN Com Preparation for Cold Weather for Unit 2"
- IR 3950343; "Shor Circuit Flag Up on 3-7339-3C, U3 ESS UPS Feed From 39"
- IR 3950298; "TR-86 125VDC Battery Electrolyte Temperature"
- IR 3944616; "South Turbine Building Vent Heating Steam Leaks"
- IR 3944274; "NRC ID Issues During Site Walkdown"
- IR 3944032; "Heating Boiler PCV 2/3-5799-1375 Steam Leak"
- IR 3943564; "U3 RB Vent Plenum Filling With Water"
- IR 2740841; "Heating Boiler PCV Steam Leak"
- IR 2737827; "Ice Trekker Donning and Doffing Area"
- IR 2730582; "'A' Heating Boiler Steam Drum Level Indication Issue"
- IR 2719462; "U1 Chemical Cleaning Elec Rm South Door Not Cycling"
- IR 2695768; "HPCI AOP Motor Heaters at Different Temperatures"
- IR 2635859; "Access Door to Breakers on MMC 29-3 has a Broken Latch"
- IR 2423333; "Steam Leaks in U2 RBV Non-Freeze Steam Heater"
- EC 377921; "Temporary Change Evaluation, Energize Temporary Heaters on Radwaste Outside Tanks and Sewage Ejector House (RLC26A26B)," Revision 000
- EQ-00-57-1611-01-LIF STA Heat; "Lift Station D Heater Not Operating Properly"
- DOS 0010-19; "Preparation for Cold Weather Operations for Unit 1 & Out Buildings," Revision 41
- DOS 0010-22; "Preparation for Cold Weather Operations for Unit 2," Revision 25
- DOS 0010-25; "Preparation for Cold Weather Operations for Unit 3," Revision 23
- DOS 0010-28; "Preparation for Cold Weather Operations for Radwaste," Revision 30
- DOS 0010-31; "Preparation for Cold Weather Operations at the Lift Station, Goose Lake Pump Station, Security Diesel Building, and Cooling Towers," Revision 20
- SA-AA-2114; "Winter Safety," Revision 3
- OP-AA-108-111-001; "Severe Weather and Natural Disaster Guidelines," Revision 15
- WC-AA-107; "Seasonal Readiness," Revision 17

### 1R04 Equipment Alignment

- IR 2738799; "Water Drops in U3 West LPCI Corner Room Cable Tray"
- DOP 1400-M1/E1; "Unit 3 Core Spray System," Revision 21
- Maintenance Rule Monthly Report for Core Spray; 2016, October
- IR 2711183; "Request One Time Check of Valve 2/3-3820-500"
- IR 2711176; "Request One Time Check of Valve 2/3-3819-500"

- IR 2708817; "CCP: Errors in CR and WO Preparation"
- IR 2674495; "IEMA Questions"
- DEOP 0500-03; "Alternate Water Injection Systems," Revision 23
- DOP 3800-01; "Turbine Building Closed Cooling Water System Operation," Revision 24
- DOP 3800-M1; "Unit 2 Turbine Building Closed Cooling Water System Checklist," Revision 15
- OP-AA-108-103; "Locked Equipment Program," Revision 2
- Maintenance Rule Monthly Report for the TBCCW for September, 2016
- Drawing: M-21; Diagram of Turbine Building Cooling Water Piping, Revision MM
- Drawing: 12E-2371; Schematic Diagram Turbine Building Closed Cooling Water System, Revision I
- DOP 6600-E1; "Unit 2 Standby Diesel Generator," Revision 04
- DOP 6600-M1; "Unit 2 Standby Diesel Generator," Revision 29

#### 1R05 Fire Protection

- Dresden Generating Station Pre-Fire Plan, Fire Zone 8.2.5D, Unit 3 Low Pressure Heater Bay, Elevation 517'
- Dresden Generating Station Pre-Fire Plan, Fire Zone 8.2.5E, Unit 3 High Pressure Heaters/Steam Line, Elevation 517'
- IR 3949989; "NRC ID Prefire Plan Updates"
- Dresden Generating Station Pre-Fire Plan, Fire Zone 1.1.2.2, Unit 2 RX Ground Floor, Elevation 517'
- Dresden Fire Protection Reports, Volume 1 and 2, Amendment 18, June 2011
- Dresden Fire Protection Reports, Volume 1 and 2, Amendment 13, June 2001
- Dresden Fire Protection Reports, Revision 1, September 1985
- Dresden Generating Station Pre-Fire Plan, Fire Zone 11.1.1, Unit 3 Southwest Corner Room, Elevation 476'

#### 1R08 Inservice Inspection Activities

- IR 02738378; Tie Rod Mid-Support Latch Pins; November, 7, 2016
- IR 02738334; Shroud Vertical Weld V-13; November 7, 2016
- IR 02738205; Jet Pump 9 Auxiliary Wedge Wear; November 7, 2016
- IR 02738062; Tip Guide Alignment Block Assembly Indication; November 7, 2016
- IR 02737916; Core Shroud Vertical V-27 Weld; November 6, 2016
- IR 02737901; Core Shroud Vertical V-12 Weld; November 6, 2016
- IR 02737896; In Core IRM and SRM; November 6, 2016
- IR 02556224; Leak Identified From U3 CCSW [Containment Cooling Service Water] Discharge Line; September 16, 2015
- IR 02506216; ASME Code Leakage; May 26, 2015
- IR 02412339; Coverage 90% or Less for ISI Exams; November 15, 2014
- IR 02415700; Leakage During Class 1 and 2 System Leakage Test; November 15, 2014
- IR 02414232; Unit 3 HPCI Leaks Discovered; November 19, 2014
- IR 02407379; 3-1503A LPCI Component Cooling HX; November 5, 2014
- ASME Weld Data Record; RPV Head Piping Flange; November 15, 2014
- ER-AA-335-003; Magnetic Particle (MT) Examination; Revision 7.
- GEH-PDI-UT-1; PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds; Revision 9
- GEH-PDI-UT-2; PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds; Revision 8

- GEH-UT-247; Procedure for Phased Array Ultrasonic Examination of Dissimilar Metal Welds; Revision 3
- PDQS 806; GEH-UT-247 Revision 3; September 8, 2014
- PDQS 704; PDI-UT-1 Revision E; September 20, 2011
- PDQS 750; PDI-UT-2 Revision F; March 14, 2013
- PQR 1-51A; December 28, 1983
- PQR 4-51A; September 12, 1986
- PQR A-003; February 8, 2000
- PQR A-004; February 8, 2000
- Report 14-610; Liquid Penetrant Examination of RPV Head Spray Flange; January 15, 2014
- Report APR-02; UT Examination of 3/1/1302-14/N5B-3 Nozzle-to-Safe End Weld; November 6, 2016
- Report APR-03; UT Examination of 3/2/1302A-12/12-7 Safe End-to-Nozzle Weld; November 6, 2016
- Report D3R24-UT-006; UT Examination of 3/1/3001D-20/20-K2 Weld; November 4, 2016
- Report D3R24-UT-005; UT Examination of 3/1/3001C-20/20-K2 Weld; November 4, 2016
- Report D3R24-UT-004; UT Examination of 3/2/2306-24/24-4 Weld; November 4, 2016
- Report D3R24-UT-002; UT Examination of 3/2/1404-10/10-48.1 Weld; November 4, 2016
- Report D3R24-UT-001; UT Examination of 3/2/1404-10/10-48 Weld; November 4, 2016
- Report D3R24-MT-002; MT Examination of 3/1/3001B-20/M-564K SHT 25 Weld; November 4, 2016
- Specification K-4080- Section 1511; Material and NDE Requirements for Piping Installation; Revision 14
- WPS 8-8-GTSM; Revision 2
- WO 01595080-01; Repair Needed for Reactor Pressure Vessel Head Spray Pipe Flange – Remove Groove Indications; November 15, 2014

#### 1R11 Licensed Operator Regualification Program

- IR 2703314; "WANO AFI OP.1, Operations Fundamentals"
- Root Cause Investigation Report for IR # 2703314, "WANO AFI OP.1 Operations Fundamentals," dated October 3, 2016
- TQ-AA-155-F109; "Simulator Evaluation — Crew Competency Standards," Revision 000
- IR 3951833; "Control Rod H-4 Fast Out at 260#"
- IR 3951623; "U2 Main Turbine Trip"
- IR 3951620; "Emergency H2 Seal Oil Pmp Auto Start"
- IR 3951619; "2-0590-102B Failed to Pick Up During DOS 0500-08"
- IR 3951528; "U2 MCR Round Point Discrepancies During Downpower"
- IR 3951608; "2B Pumpback AC Trip"
- DGP 02-01; "Unit Shutdown," Revision 162
- DGP 03-04; "Control Rod Movements," Revision 73
- DOP 1600-07; "Primary Containment Deinerting," Revision 30
- DOS 0500-08; "Unit 2 Main Steam Line Isolation Valve Closure Scram Circuit Functional Test," Revision 45
- OP-AB-300-1003; Reactivity Maneuver Guidance Sheet for Reactivity Maneuver Plan #D225-016
- Power profile for D2M18
- Operations Logs for the Period of 11/15/2016 22:17 through 12/12/2016 06:18
- Drawing: 239LN001-006; Main Steam Isolation Valve (Closed), Revision 02
- Drawing: M-25; Diagram of Pressure Suppression Piping, Revision DY



- Drawing: 12E-2464, Schematic Diagram Reactor Protection System Channel "B" Auxiliary Relays, Revision AL
- Drawing: 1 2E-2464, Schematic Diagram Reactor Protection System Channel "A" Auxiliary Relays, Revision AO
- Drawing: 12E-2465, Schematic Diagram Reactor Protection System Channel "A" Auxiliary Relays, Revision AL
- Drawing: 12E-2465, Schematic Diagram Reactor Protection System Channel "A" Auxiliary Relays, Revision AI
- Drawing: 12E-2465, Schematic Diagram Reactor Protection System Channel "A" Auxiliary Relays, Revision AU
- Drawing: 12E-2466, Schematic Diagram Reactor Protection System Channel "B" Scram & Auxiliary Trip Relays, Revision AL
- Drawing: 12E-2466, Schematic Diagram Reactor Protection System Channel "B" Scram & Auxiliary Trip Relays, Revision AM
- Drawing: 12E-2466, Schematic Diagram Reactor Protection System Channel "B" Scram & Auxiliary Trip Relays, Revision AQ

#### 1R12 Maintenance Effectiveness

- Maintenance Rule Performance Criteria Selection for Revision to MR 10-4, dated 07/29/2014
- (a)(1) Determination for IR 1579397-03, dated 11/21/13
- Maintenance Rule System Basis for Dresden 3 System: 10, Shutdown Cooling Function 10-4, "To Provide Reactor Water Cooldown (After Shutdown) from 350 Degrees Fahrenheit to 140 Degrees Fahrenheit at Atmospheric Pressure, and to Maintain Reactor Water Temperature at 140 degrees Fahrenheit"
- Maintenance Rule System Basis for Dresden 3 System: 10, Shutdown Cooling Function Retired 10-3, "To Maintain Reactor Water at 140 degrees Fahrenheit During Refuel/Inspection Operations"
- Maintenance Rule – Failure Classification for IR 01695472, dated 08/22/2014
- IR 1695472; "3B SDC Pump Did Not Start"
- IR 2686738; "Found Wires on Field Not Matching Print"
- IR 2676454; "U3 DW Temp Monitoring Shows EQ Limit Exceeded for SDC MOV"
- IR 2667975; "12E-3656J Drawing is Wrong"
- IR 2652343; "Abnormal Noise From U3 SDC PP Room"
- IR 2591995; "Lesson Learned for Shutdown Cooling Modification"
- IR 2392600; "U3 DW Temp Monitoring Shows EQ Limit Exceeded for 1B SDC MOV"
- IR 2059932; "U3 Maintenance Rule Function 10-4 is (A)(2) at Risk"
- Drawing: M-32 Diagram of Shutdown Reactor Cooling Piping; Revision BC
- Drawing: 2-5LN001-001, Shutdown Cooling System; Revision 03
- Dresden Station Maintenance Rule Periodic Assessment #11 (10CFR50.65(a)(3) Assessment) for the Period of 10/1/2014 – 09/30/2016
- MRule Expert Panel Meeting Notes dated 10/09/2015
- MRule Expert Panel Meeting Notes dated 08/04/2015
- IR 3944199; "IEMA Question Regarding Maint Rule Requirement for EC397321"
- IR 2716752; "Maintenance Rule FF Definition for Function 03-03"
- IR 2700290; "MRule U3 Function 23-2 Re3quires (a)(1) Determination"
- HVAC-AEER MR Function Evaluation for November 2016

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

- DOP 6500-10; "MCC 28-7/29-7 (38-7/39-7) Operation," Revision 05

- DOS 6600-07; "Testing LPCI Swing Bus Protective Relays and Auto Transfer Function," Revision 30
- ER-AA-600-1042; "On-Line Risk Management," Revision 10
- Protected Equipment List Unit 2 DIV 2 Core Spray
- Protected Equipment List Unit 2 DIV 1 Core Spray
- Protected Equipment List Unit 2 HPCI
- Protected Equipment List Unit 2 ADS
- WO 01788676-01; Attachment 2, "Vessel Disassembly/Re-assembly"
- DOP 1900-03; "Reactor Cavity, Dryer/Separator Storage Pit and Fuel Pool Level Control," Revision 54
- OP-AA-108-117; "Protected Equipment Program," Revision 4
- OP-DR-104-1001; "Shutdown Risk Management Contingency Plans," Revision 09
- OU-DR-104; "Shutdown Safety Management Program," Revision 20
- Inventory Make Up Protected Equipment Plan
- Protected Equipment List Unit 3 3C LPCI
- Protected Equipment List Unit 3 Div II LPCI
- OP-AA-108-117-1001; "Protected Equipment and Pathway Policy," Revision 06
- OP-AA-108-117; "Protected Equipment Program," Revision 4
- DOP 6900-01; "250 VDC Electrical System," Revision 37
- Protected Equipment Lis for U2 250VC Battery
- Drawing: 12E-2321, Key Diagram 250V Motor Control Centers, Revision AS
- DOP 6500-25; "Removing 4KV Bus 33 From Operation for Maintenance/Testing," Revision 10
- DOP 6500-15; "Removing 4KV Bus 33-1 From Operation for Maintenance/Testing," Revision 09
- Attachment 9; Bus 33-1 Restoration Contingency Plan
- Protected Equipment List for U3 Bus 39/Bus 38 Xtie (fed from Bus 34-1)
- Protected Equipment List for U3 TR 31 & 3 Backfeed
- Protected Equipment List for U3 SBO
- Protected Equipment List for U2/3 CREVS [Control Room Envelope Ventilation System]
- Protected Equipment List for U2/3 "2/3 A SBT"
- Protected Equipment List for U3 MSL Plug Air Supply
- Protected Equipment List for U3 Instrument Bus
- Protected Equipment List for U3 3B RBCCW
- Protected Equipment List for U3 3C SDC to FPC
- Protected Equipment List for U3 EDG
- Protected Equipment List for U3 34-1
- Protected Equipment List for U2/3 RBCCW
- Protected Equipment List for U3 Fuel Pool Cooling
- Protected Equipment List for U3 3B SDC
- WO 01733378; "HPCI Signal Converter Replacement Project"
- 50.59 Screening Form for EC 397957; "Replace U3 LPCI Signal Converter and Flow Indicating Controller," Rev. 001
- Summary for Unit 3; EC 397957, "Replace U3 LPCI Signal Converter and Flow Indicating Controller," Rev. 001
- Work Planning Instructions for Unit 3; EC 397957, "Replace U3 LPCI Signal Converter and Flow Indicating Controller," Revision 001
- Design Consideration Summary for Unit 3; EC 397957, "Replace U3 LPCI Signal Converter and Flow Indicating Controller," Revision 001
- Seismic Qualification of HPCI Turbine Signal Converter Nutherm Model No. 73315, EC 405067, Revision 0
- Protected Equipment List Unit 3 Div 1 Core Spray

- Protected Equipment List Unit 3 Div II LPCI
- Protected Equipment List Unit 3 DIV 2 Core Spray
- Protected Equipment List Unit 3 Isolation Condenser
- Protected Equipment List Unit 3 ADS
- Protected Equipment List Unit 2/3 345 KV Switchyard
- Protected Equipment List Unit 3 Div I LPCI
- Drawing: 12E-3828; Wiring Diagram High Pressure Coolant Injection System Signal Converter FY-3-2386, Revision J
- Drawing: 12E-3826; Wiring Diagram HPCI Turbine Terminal Boxes EH, ED & Testable Check Valve 2301-7, Revision T
- Drawing: 12E-3699; Wiring Diagram Main Control Board Panel 903-3 HPCI System, Revision CK

#### 1R15 Operability Determinations and Functional Assessments

- WO 01450454-02; "480V Breaker Swap Bus 28, Cubicle 5A"
- WO 01450454-04; "Breaker Swap 2-7328-5A"
- WO 01361568-02; "Breaker Swap Bus 29 Cub 3B"
- IR 2723291; "Bus 29 Feed Breaker to 29-7/28-7 "Auto Trip""
- IR 2723425; "Shift Questions Regarding Preconditioning Prior to Testing"
- DOS 6600-07; "Testing LPCI Swing Bus Protective Relays and Auto Transfer Function," Revision 30
- WC-DR-101-1001; "Preconditioning Evaluation Form", for U2 LPCI Swing Bus dated 10/05/16, Revision 0
- Operator logs unit 2; 10/02/2016 00:27 – 00:41 and 08:12 – 14:52
- PM History of 4Y PM for 4KV Breaker UTC 0002719944
- PM History of 4Y PM for 4KV Breaker UTC 0001281221
- Drawing: 12E-2320; Key Diagram Reactor Building 480V Motor Control Centers 29-4, 28-7 & 29-7, Revision AT
- Drawing: 12E-2335; Relaying & Metering Diagram 480V, Switchgears 25, 26, 27. 28 & 29, Revision L
- Drawing: 12E-2441A; Schematic Diagram LPCI/Containment Cooling System Motor Operated Valves 2-1501-21B, 2-1501-22B, Revision AM
- Drawing: 12E-2662B; Schematic and Wiring Diagram 480 AC Reactor Building MCC 28-7 (2-7828-7) Part 2, Revision V
- Drawing: 12E-2662C; Wiring & Schematic Diagram 480 AC Reactor Building MCC 29-7 (2-7829-7) Part 1, Revision AD
- Drawing: 12E-2662E; Schematic and Wiring Diagram 480 VAC Reactor Building MCC 29-7 Part 3, Revision F
- WO 01726127-02; "D2 24M TS PCIS Group IV Isolation (HPCI) LSFT"
- IR 2729533; "Historical Operability Result for 2-2330-125A"
- IR 2729541; "Historical Operability Result for 2-2330-150"
- IR 2718004; "Relay 2-2330-150 Contacts Required Burnishing"
- IR 2717912; "Relay Was Cycling During Performance of DIS 2300-04"
- DIS 2300-04; "HPCI System Logic System Functional Test Without HPCI Turbine Accessories," Revision 34
- Drawing: 12E-2530; Schematic Diagram High Press. Coolant Injection Sys Auxiliary Valves, Revision AI
- Drawing: 12E-2684E; Wiring Diagram Reactor Building 250V DC Motor Control Center 2B Part 2, Revision V

- Drawing: 12E-2684F; Wiring Diagram Reactor Building 250V DC Motor Control Center 2B Part 3, Revision Q
- Drawing: 12E-2699; Wiring Diagram Main Control Board Panel 902-3 HPCI System, Revision CJ
- Drawing: 12E-2762D; Wiring Diagram Panel 902-39 Part 4 Terminal Blocks GG, HH, Revision AL
- WO 01606161-13; "Bench Test Replacement 3C ERV Solenoid (3-0203-3)"
- IR 2736296; "3-0203-3C ERV Solenoid Performance During DOS 0250-07"
- IR 2725128; "Verification and Procedure Enhancement Needed"
- IR 2738293; "Discolored Butyl Rubber Cables in Unit 3 Blowdown Panel"
- IR 2738295; "Discolored Cables in Riser 325"
- IR 2737707; "3B ERV Pilot Actuator Testing Results"
- IR 2739061; "Missing Washer/Nut on Limit Switch on ERV Actuator 3-0203-3B"
- DOS 0250-07; "Electromatic Relief Valve Testing With the Reactor Depressurized," Revision 06
- DOS 0250-08; "Target Rock Safety Relief Valve Testing With the Reactor Depressurized," Revision 04
- MA-DR-EM-4-00200; "Dresser Electromatic Solenoid Actuator Rebuild Instructions," Revision 06
- Drawing: 12E-3461; Schematic Diagram Auto Blowdown Target Rock Valve 203-3A, Revision AZ
- Drawing: 12E-3462; Schematic Diagram Auto Blowdown Electronic Relief Valves 203-3C, 203-3D & 203-3E, Revision AG
- Drawing: 12E-3462; Schematic Diagram Auto Blowdown Part 2, Revision AH
- Drawing: 12E-3816F; Wiring Diagram Low Voltage Power Penetration X-204M, Revision AN
- Drawing: 12E-3462A; Schematic Diagram Auto Blowdown Electromatic Relief Valve 203-3C, Revision G
- Drawing: M-345; Diagram of Main Steam Piping, Revision BB
- EC Response 425638; "Discolored cables"
- Drawing: 12E-3789E; Wiring Diagram Auto Blowdown Relay Panel
- Drawing: 12E-3816B; Wiring Diagram Low Voltage Power Panel Penetration X-204S
- WO 1964117; "1C MSIV Remained Dual Indication When Timing Closed"
- WO 1964116; "1D MSIV Remained Dual Indication When Timing Closed"
- IR 2734834; "MSIV Closure Time Outside Desired Band"
- IR 2734824; "1C MSIV Remained Dual Indication When Timing Closed"
- IR 2734822; "1D MSIV Remained Dual Indication When Timing Closed"
- DOS 0250-02; "Full Closure Timing and Exercising of Main Steam Isolation Valves," Revision 32
- WO 01963002; "Install TCCP Per EC 407001"
- Design Summary for TCCP / EC 407001; "U2 Torus / DW Vacuum Breaker 2-1601-33F / Check Valve Gag (Restrained) Valve in the Closed Direction"
- IR 2740395; "MRULE: Z16-1 Func Require (A)(1)/(A)(2) Determination for U2"
- IR 2732978; "Vacuum Breaker 2-1601-33F Would Not Properly Close"
- IR 2696133; "2-1601-33F Vacuum Breaker Was Slow to Shut"
- IR 2603677; "Limit Switch for 2-1601-33E Slow to Respond"
- 50.59 Review for EC 407001; "Temporarily Disable U2 Vacuum Breaker 2-1601-33F In The Closed," Revision 000
- DOS 1600-09; Pressure Suppression Chamber to Drywell Vacuum Breaker Full Stroke Exercise Test," Revision 28
- History of D2 QTR TS (IST) Torus/Drywell Vacuum Breaker Cycling, 05/28/2009 through 09/29/2016

- History of D2 1M Torus/Drywell Vacuum Breaker Cycling Surv, 06/25/2014 through 10/27/2016
- WO 1964698-01; "Repair Disconnected Unitstrut for CRD Piping in Drywell"
- IR 2735725; "Disconnect Unistrut Observed for CRD Piping in Drywell"
- Calculation 8.5.0-41; Qualification of 1"0 CRD Drywell Penetrations Including X-139C, Revision 000
- Drawing: M-1188D-3; As-built for Hanger Mark No. M-1188D-3, Revision 3
- Drawing: M-485; Control Rod Drive Piping Plan "A-A", Revision A
- Drawing: M-365; Diagram of Control Rod Drive Hydraulic Piping, Revision X
- Drawing: M-365; Diagram of Control Rod Drive Hydraulic Piping, Revision AK
- Drawing: B-505; Containment Vessels Drywell Penetrations, Revision R

#### 1R18 Plant Modifications

- WO 01633956; "MSIV Limit Switch Relocation - U3"
- IR 2735566; "MSIV 3-0203-1C LS Conduit Degradation"
- IR 2735510; "MSIV 3-0203-1A LS Conduit Wear and Tear"
- 50.59 Review No. 2016-47; "EC 390651 and EC 390652," Revision 005 & 000
- Design Summary for EC 390651; Revision 007
- Drawing: M-3996; MSIV Limit Switch Relocation, Revision A, sheets 1 - 4
- IR 3946981; "Print 12E-3325 SH 2 Requires Revision"
- IR 2741584; "Bus 39 CUB 3C Breaker Overcurrent Trip"
- IR 2741537; "U3 ESS UPS Trouble"
- IR 2738864; "ESS Breaker Issue Delays D3R24"
- WO 01934839; "Bypass ESS UPS - U3" Including WO 01934839-01, WO 01934839-04, WO 01934839-06, WO 01934839-10
- ESS Transfer Plan
- Work Planning Instructions for EC 405828; "Bypass ESS UPS-U3," Revision 00
- 50.59 Screening for EC 405828; "Bypass ESS UPS-U3, Revision 000
- Evaluation Details for EC 40582; "Bypass ESS UPS-U3," Revision 000
- Design Change Package for Bypass ESS UPS-U3; WO# 01934839, Revision 000
- Design Consideration Summary for EC 405828; "Bypass ESS UPS-U3," Revision 002
- EC 405600; "Classification of ESS UPS," Revision 000
- 50.59 Review of EC 405313; "Essential Services Bus UFSAR and Technical Specification Bases Update," Revision 000
- Design Consideration Summary of EC 405313; "Essential Services Bus UFSAR and Technical Specification Bases Update," Revision 000
- DAN 902(3)-8 E-8; "ESS UPS on DC or Alternate AC," Revision 09
- DOA 6800-01; "Loss of Power to Essential Service System Bus or Instrument Bus," Revision 34
- DOP 6800-01; "Essential Service System," Revision 32
- DOS 6800-01; "Essential Service Uninterruptable Power Supply Operability Test," Revision 16
- Drawing: 12E-3881C; Uninterruptible Power Supply Panel 903-63, Revision F
- Drawing: 12E-3682; Wiring Diagram 120/240V AC Distribution Panels Essent Serv Bus Distr Pnl 903-49 Instrument Bus Dist Pnl 903-50; Revision AP
- Drawing: 12E-3661A; Wiring Diagram 480V Switchgear Bus 39 Sections 391, 392 & 393, Revision AG
- Drawing: 12E-3325; Key Diagram 120 and 120/240V AC Distribution Essential Service Bus and Instrument Bus, Revision AC
- Drawing: 12E-3325; Key Diagram 120 and 120/240V AC Distribution Essential Service Bus and Instrument Bus, Revision AD

- Drawing: 12E-3325; Key Diagram 120 and 120/240V AC Distribution Essential Service Bus and Instrument Bus, Revision AJ
- Drawing: 12E-2160; Instrument System Computer Equipment Room & Auxiliary Electrical Equipment Room-Plan, Revision CI
- Drawing: 262LN005-002; Reactor Protection System, Revision 00
- Drawing: 262LN005-003; Essential Service System, Revision 00
- Drawing: 262LN005-004; Instrument Bus System, Revision 00

#### 1R19 Post-Maintenance Testing

- WO 01598042-01; "D3 Replace 3A RX Recirc Pump Mech Seal With New N-7500"
- WO 01598042-09; "Perform VT-2 on 3A RX Recirc Pmp Mech Seal"
- DMP 0202-01; "Recirculation Pump Seal Replacement and Pump Leak Test," Revision 33
- Pressure Test Summary
- WO 01803717-01; "D3 24M TS MSIV Closure Scram Ckt Func Test Prior to S/U"
- WO 01803713-01; "D3 QTR/CSD PM Main Steam Isol Vlv Fail-Safe Test During CSD"
- DOS 7000-02; "Local Leak Rate Testing of Main Steam Isolation Valves (Wet Test)," Revision 04
- DOS 0500-2; "MSIV Closure Scram Circuit Functional Test Performed Prior to Startup," Revision 17
- DOS 0250-03; "Main Steam Isolation Valve Fail-Safe Closure Test," Revision 23
- WO 01883780-23; "Main Steam Pmts Required for Mode 2"
- WO 01803714; "D3 RFL PM Electromatic Relief 'B' Replace Pilot"
- WO 01792776; "D3 RFL Electromatic Relief -D- Replace Pilot"
- WO 01792776-06; "Preoutage Rebuild Electromatic Relief 'D' Repl Pilot Sol"
- WO 01606844; "D3 RFL TS IST RV - Replace E Electromatic RV"
- WO 01606161; "D3 2RFL TS IST RV- Replace C Electromatic RV"
- DOS 0250-07; "Electromatic Relief Valve Testing With the Reactor Depressurized," Revision 06
- DOS 0250-08; "Target Rock Safety Relief Valve Testing With the Reactor Depressurized," Revision 04
- IR 2742076; "HPCI Turbine Discrepancies During Sureveillance"
- IR 2741954; "Approx 5 Gals of Oil in U3 HPCI Berm Under Grating"
- IR 2741920; "U3 HPCI Timing Data From DIS 2300-05 For Engineering Review"
- IR 2741057; "U3 HPCI Turb Trip Mech Sluggish (~5 Min From PB to Trip)"
- IR 2739530; "U3 HPCI MSC Motor Ran Unexpectedly"
- IR 2738862; "MSC Motor Gear Pin Broken Will Not Release From Shaft"
- IR 2737883; "IST HPCI Test Oper Test For 3-2301-7 Cannot be Performed"
- WO 01883781-18; "D3R24 PMTS Not Req'd for Mode 2"
- WO 01883780-18; "D3R24 PMTS Req'd Prior to Mode 2"
- WO 01803707-01; "D3 24M/RFL TS HPCI LP Sys Oper Verif (DS 2) During Startup"
- WO 00751512-01; "D3 6RFL HPCI Motor Speed Changer Motor Replacement"
- DES 8300-04; "Inspection of DC Motors and Brushes," Revision 19
- DOP 2300-01; "High Pressure Coolant Injection (HPCI) System Operation," Revision 56
- DOS 2300-01; "High Pressure Coolant Injection Valve Operability and Timing," Revision 52
- DOS 2300-03; "High Pressure Coolant Injection System Operability and Quarterly IST Verification Test," Revision 112
- WO 01883780; "D3R24 PMTs Req'd Prior to Mode 2"
- WO 01799793-01; "D3 RFL PM Replace Diaphragm / Bonnet Assembly 3-2001-5"
- WO 01799793-05; "Perform as Left LLRT Per DOS 70000-21"
- WO 01799793-07; "Vlv Timing AOV 2001-5 Per DOS 1600-03/DOS 0040-17"

- DOS 0040-07; "Verification of Remote Position Indication for Valves Included in Inservice Testing (IST) Program," Revision 45
- DOS 1600-05; "Unit 3 Quarterly Valve Timing," Revision 49
- Drawing: M-369; Diagram of Reactor Building Equipment Drains, Revision WK

#### 1R20 Outage Activities

- WO 01967630-01; "Replace 3A FWRV M/A Station"
- WO 01967278-01; "Correct cause of 903-4, G-7, '3B Recirculation PP Seal cooling WTR Flow"
- IR 2741146; "Spurious Channel B RX Scram (1/2 Scram)"
- IR 2741073; "J-7 Has No RPIS at Position 02 and 12"
- IR 2741072; "U3 Low Flow Reg Valve M/A Did Not Pass PMT"
- IR 2741070; "3A FWRV M/A Station Did Not Pass PMT"
- IR 2740842; "Alarm Will Not Clear"
- IR 2740775; "U3 Main Condenser Water Box Closeout Issues"
- IR 2740744; "Closed Limit Switch on 3-1601-333F Would Not Reset"
- IR 2740744; "Closed Limit Switch on 3-1601-33F Would Not Reset"
- IR 2740098; "Closed Limit Switch on 3-1601-32A Would Not Reset"
- IR 2739869; "Unisolable Leak on 3B EHC PP Suction Line at Tank Weld"
- IR 2739855; "U3 SRM Indications Fluctuating Unexpectedly"
- IR 2739898; "PRE Welding UT Exam Found Laminations if 3B LPCI HX Shell"
- IR 2738907; "NDE INSP Reveal MT Indications on HX Support"
- IR 2738602; "Post-Event Fatigue Assessment"
- IR 2738592; "NRC Question Regarding 250VDC Clearance Orders"
- IR 2738377; "During DOS 6600-03 Bus 38 Feed From Bus 33-1 Failed to Close"
- IR 2738278; "Found FM in the 3A FW Reg Valve 2-0642A"
- IR 2738274; "Found Evidence of Cable Degradation in Panel 3-2203-154B"
- IR 2737957; "RVWLIS Check Valve Exceeded Leakage Test Acceptance Criteria"
- IR 2737760; "RPV FME"
- IR 2737631; "Fatigue Assessment Completed"
- IR 2736926; "MOV 3-1201-7 Actuator Degradation"
- IR 2736846; "Fuel Moves Delayed Due to U3 Refueling Mast"
- Equipment Issue; "U3 Refuel Bridge Crane Hoist Vertical Movement Malfunctioning such that Loads are not Able to be Moved Up and Down. IR 2736846"
- IR 2736829-04; "ACIT to Design Engineering. (D. Lee) to Perform D3R24 Aggregate Effects Lost Part Evaluation"
- IR 2736385; "Valve Leakage Exceeds Administrative Limit"
- IR 2736333; "IRM 18 HI HI/INOP"
- IR 2736331; "PMC: 3-0220-105A Vacuum Breaker Testing Results"
- IR 2736452; "FME-Foreign Material Found During Non Seg Inspection"
- IR 2736931; "Coating Patches Within the ISP Cond Have Chipped Away"
- IR 2735851; "Heat Stress Event in D3 Drywell"
- IR 2735530; "NRC Resident Inquiry Regarding PPW"
- IR 2735494; "Potential Foreign Mat Left in Cable Tray"
- IR 2735391; "Fatigue Assessment and Work Hour Rule Violation"
- IR 2735301; "Possible Leak By of HCU 126 Valve"
- IR 2735158; "U3 RWCU AUX Pump Breaker Failure"
- IR 2735128; "Fire Wrap on Cables Between Fire Zones"
- IR 2734997; "D3R24 X-149B BELLRT Exceed Admin Alarm Light"
- IR 2734993; "D3R24 As Found LLRT Bellows X-111A Exceeds Alarm Limit"

- IR 2734946; "X-Area 'D' Main Steam Line Penetration Seal Degraded"
- IR 2734764; "3B Recirculation Seal Pressure Trending Abnormally During Shutdown"
- IR 2734757; "3A RWCU Pump Trip During Shutdown"
- IR 2734747; "D3 SRM 24 Reads Higher Than Other SRMS"
- IR 2734741; "SRM 24 Count Indication High During Shutdown"
- IR 2734702; "Steam Leak Identified During RP Downpost Survey"
- IR 2734700; "Steam Leak Identified During RP Survey"
- IR 2730552; "Scaffolding Issue Near ISO Cond @ EL 589' Resolved"
- IR 2730187; "3-1601-33D Vacuum Breaker ARM Bushing Scaffold Pole"
- IR 2729364; "Stopped Contractor Work Due to Work in Protected Path"
- IR 2724362; "Unit 3 Refuel Bridge Monorail Not Working Properly"
- IR 2718894; "Burning Smell From Light Box on U3 Bridge"
- Engineering Evaluation 406467; "Alternate Decay Heat Removal (ADHR) Qualification for D3R24"
- EC 403643; "Dresden Unit 3 Cycle 25 Core Reload Design," Revision 002
- Prompt Investigation for IR 2738517; "During the Process of Uncoiling a Fiberglass Rod for Condenser Tube Cleaning in the Unit 3 Waterbox, Control of the Rod Coil being Handled was Lost and One End Struck One of the Boilermakers in the Facial Area."
- Nuclear Component Transfer List for D3R24 Shuffle 1 – NW, Sequence S1NW, page 143
- D3R24 Final Core Component Maintenance Map
- DFP 0800-21; "Refueling Platform and Fuel Handling Grapple Operation," Revision 31
- DFP 0800-91; "New Fuel Receiving," Revision 03
- DFP 0800-92; "New Fuel Preparation and Storage," Revision 03
- DFP 0800-93; "Fuel Bundle, Channel and Channel Fastener Inspection Checklist," Revision 05
- DGP 01-01; "Unit Startup," Revision 190
- DGP 01-S1; "Start-up Checklist," Revision 100
- DGP 02-01; "Unit Shutdown," Revision 161
- DGP 03-01; "Power Changes," Revision 132
- DGP 03-04; "Control Rod Movements," Revision 73
- DGP 04-01; "Fuel Moves and Refueling," Revision 35
- DOP 0201-04; "Operations With the Potential to Drain the Reactor Vessel," Revision 13
- DOP 1000-03; "Shutdown Cooling Mode of Operation," Revision 80
- DOS 0800-01; "Refueling Interlock Checks," Revision 37
- DOS 1000-02; "Alternate Decay Heat Removal Using Shutdown Cooling and Fuel Pool Cooling," Revision 20
- DOS 1000-02; "Alternate Decay Heat Removal Using Shutdown Cooling and Fuel Pool Cooling," Revision 20
- OP-AA-108-117; "Protected Equipment Program," Revision 4
- OP-AA-108-117-1001; "Spent Fuel Storage Pools Heat-Up Rate With Loss of Normal Cooling," Revision 0
- OP-AA-109-101; Worker Tag Out (WTO) 2016-1131, "Support New HPCI Signal Converter Install (EC # 397957)"
- OU-DR-104; "Shutdown Safety Management Program," Revision 20
- D3R24 Refuel Outage Shutdown Safety Review; Revised 09/20/16
- D3R24 Refuel Outage Shutdown Safety Review; Revised 10/17/16
- D3R24 Shutdown Safety Contingency Plan; Revised 10/13/16
- D3R24 Refuel Outage Schedule; Revision 0, dated August 8 2016
- D3R24 High Risk Evolutions
- D3R24 System Health Issues; dated September 2, 2016
- D3R24 IPA/First Time Evolutions; dated 9/2/16



- D3R24 OPDRVs; dated 8/25/16
- D3R24 Protected Equipment Summary; dated 9/2/16
- D3R24 Minimum Requirement to Prevent Color Change; dated 10/17/16
- D3R24 Tech Specs Guidelines/Notes; dated 10/17/16
- Dresden Unit 3 Alternate Heat Decay Removal (ADHR) Plan D3R24
- Attachment 1 "Complete Loss of SDC Contingency Plan"
- Clearance: 00131741; Checklist: 001, Unit: 03, Tag: 3-83ZZ, "D3R24 250V Batt Performance Test (DES 8300-20)"
- Clearance: 00131742; Checklist: 001, Unit: 03, Tag: 3-83ZZ, "250 VDC RX Bldg MCC 3A-3B MCCB Replacements"
- Clearance: 00132010; Checklist: 001, Unit: 03, Tag: 3-2303-MGU, "HPCI MGU & Signal Converter"
- Clearance: 00136806, Checklist: 001, Unit: 03, Tag: 3-07ZZ, "Replace LPRM Detectors"
- Work hour time sheets for Maintenance Department, 11/02/16, 11/03/16, 11/05/16, 11/06/16, and 11/09/16
- Work hour time sheets for SRO, RO, and NLO in Operations Department, 10/24/16 through 11/22/2016
- Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel," March 2009
- Work Hour Violation Reports for Operations 2016 Mgmt Outage, NSO Outage, and EO Outage for the Time Period of 10/24/2016 through 11/21/2016
- 10 CFR 26 Work Hour Limits Waiver for Employee ID 515515, for 11/1/16
- D3C25 Core Verification

## 1R22 Surveillance Testing

- WO 01800577; "D3 30M/RFL TS LLRT MSIV 203-1A & 203-2A Dry Test"
- WO 01800576; "D3 30M/RFL TS LLRT MSIV 203-1D & 203-2D Dry Test"
- WO 01783254; "D3 30M/RFL TS LLRT MSIV 203-1C & 203-2C Dry Test"
- WO 01783253; "D3 30M/RFL TS LLRT MSIV 203-1B & 203-2B Dry Test"
- WO 01783251; "D3 30M/RFL TS LLRT MSIV 203-3A Wet Test"
- WO 01783250; "D3 30M/RFL TS LLRT MSIV 203-3D Wet Test"
- IR 2735324; "U3 1D MSIV Exceeded TS Leakage Limit"
- IR 2732767; "LLRT Procedure DOS 700-23 Enhancements"
- DTP 47; "Primary Containment Leak Rate Test Log," Revision 19 for U3 D3R24 MSIVs
- D3R24 LLRT Turnover Sheet dated 10/31/16 1800
- DOS 7000-01; "Local Leak Rate Testing of Main Steam Isolation Valves (Dry Tests)," Revision 07
- DOS 7000-02; "Local Leak Rate Testing of Main Steam Isolation Valves (Wet Test)," Revision 04
- Drawing: M-345; Diagram of Main Steam Piping, Sheet 1, Revision BB
- Drawing: M-345; Diagram of Main Steam Piping, Sheet 2, Revision QL
- WO 01800574-01; "Perform As Found LLRT Vlv 3-0220-58 'B' FW Inboard Chk Valve"
- WO 01800571; "Perform As Found LLRT 3-0220-62B FW OTBD Ck Vlv"
- WO 01805351-09; "Perform As Left LLRT 3-0220-58B Per DOS 7000-26"
- WO 01784160-01; "Perform As Found LLRT Vlv 3-0220-58A FW Inboard Chk VI"
- WO 01784158-01; "Perform As Found LLRT Vlv 0220-62A FW OTBD CHK VLV"
- WO 01595088-01; "Perform As Found LLRT 3-0220-58B DOS 7000-26"
- WO 01595087-01; "D3 30M/RFL TS LLRT Vlv 0220-57B & 0220-62B FW OTBD Chk Vlv"
- WO 01391213-06; "Perform As Left LLRT 3-220-62A Per DOS 7000-26"
- IR 2737809; "3-0220-58B Failed LLRT"

- IR 2737803; "Valve Failed as Found LLRT"
- IR 2737802; "Valve Failed as Found LLRT"
- IR 2735713; "D3R24 As Found LLRT FW 62A Exceeded Admin Alarm Limit"
- IR 2407479; "D3R23 FW 0220-62B As Found LLRT Exceed Admin Limit"
- DOS 7000-26; "Local Leak Rate Testing of Unit 2(3) Feedwater System Valves [2(3)-220-58A(B), 2(3)-220-62A(B)," Revision 07
- DTP 47; "Leak Rate Testing Program," Revision 19
- DTP 47; Checklist A, "Primary Containment Leak Rate Test Log," Revision 19 for U3 D3R24 Primary Containment Isolation Valves
- Drawing: P&ID: M-347, M-361, M-374; Figure: Testing 3-0220-62B Pen X-107
- Drawing: M-347; Diagram of Reactor Feed Piping, Revision CG
- Drawing: M-374; Diagram of High Pressure Coolant Injection Piping, Revision CV
- WO 01800945 "D3 24M/RFL TS Bus 33-1 UV and ECCS Integrated Func Test"
- IR 2738377; "During DOS 6600-03 Bus 38 Feed From Bus 33-1 Failed to Close"
- IR 2738310; "During DOS 6600-03, Bus 35 Failed to Auto Transfer to Bus 36"
- DOS 6600-01; "Diesel Generator Surveillance Tests," Revision 131e
- DOS 6600-03; "Bus Undervoltage and ECCS Integrated Functional Test for Unit 2/3 Diesel Generator to Unit 3," Revision 42
- Transmittal of Design Information (TODI) No. 16-021; "Emergency Diesel Generator 3 & 2/3 Loading in Support of DOS 6600-04 & 03 Testing During D3R24"
- OP-DR-108-101-1003, "Operations Craft Capability Activities," Revision 10
- Work Planning Instructions for EC 395142; "ATWS RPT Pressure Setpoint Change Unit 3," Revision 000
- DIS 0263-10; "Unit 3 ATWS RPT/ARI and ECCS Level MTU and STU Channel Functional Test," Revision 15

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

- EP-AA-1004 Addendum 3; Emergency Action Levels for Dresden Station; Revisions 1, 2, and 3
- EP-AA-1102; ERO Fundamentals; Revisions 8, 9 and 10
- Evaluation 15-033; 50.54(q) Evaluation and Effectiveness Review, Exelon Nuclear Standard Emergency Radiological Emergency Plan, Revision 28; Dated August 19, 2015
- Evaluation 15-105; 50.54(q) Evaluation and Effectiveness Review, Emergency Action Levels for Dresden, Revision 1; Dated October 27, 2015
- Evaluation 16-024; 50.54(q) Evaluation and Effectiveness Review, Emergency Action Levels for Dresden, Revision 2; Dated February 1, 2016
- Evaluation 16-088; 50.54(q) Evaluation and Effectiveness Review, Emergency Action Levels for Dresden, Revision 3; Dated June 14, 2016
- AR 02652711; NOS ID: Current x/Q Values Not Used for EAL Threshold Calcs; Dated April 8, 2016

#### 1EP6 Drill Evaluation

- DEOP 0010-00; "Guidelines for Use of Dresden Emergency Operating Procedures and Severe Accident Management Guidelines," Revision 17
- DEOP 0400-02; "Emergency Depressurization," Revision 08
- DOA 0010-10; "Fire/Explosion," Revision 21
- DOA 0300-01; "Control Rod Drive System Failure," Revision 26
- OP-DR-103-102-1002; "Strategies for Successful Transient Mitigation," Revision 20
- EP-AA-1004 Addendum 3; "Emergency Action Levels for Dresden Station," Revision 5
- EP-AA-112-100-F-01; "Shift Emergency Direction Checklist," Revision V

- LORT 2015-2017; Cycle 08 Out of the Box Evaluation B, Rev 0
- Drawing: RPV Control (Unit 2); Revision 12
- Drawing: RPV Control (Unit 3); Revision 12
- Drawing: Primary Containment Control; Revision 12

## 2RS1 Radiological Hazard Assessment and Exposure Controls

- RP-AA-203-1001; "Sample Personnel Exposure Investigation," GOFFX5538, October 31, 2016
- RP-AA-203-1001; "Sample Personnel Exposure Investigation," PATTE7935, October 31, 2016
- IR 02735594; "ED Dose Rate Alarm in Dresden U-3 TB-517 Elevation"
- IR 02735651; "ED Dose Rate Alarm in Dresden U-3 TB-517 Elevation Installing Scaffold Decking"
- IR 02737575; "ED Dose Alarmed Working below the Gland Seal"
- IR 02736965; "Level-1 PCE CB&I LB Removing Released Trash/Equipment"
- IR 02737683; "Level-2 PCE while De-torquing CRD in the Drywell"
- IR 02737612; "Level-2 PCE in the Drywell while Working at 1DMSIV"
- IR 02737412; "Level-2 PCE from a Work area near Reactor Head Stand during NDE Activity"
- IR 02736976; "Contaminated Scrubs Found at West Exit Point"
- IR 02738308; "Level-2 PCE while Working with Missile Barrier Plates"
- RWP-DR-03-16-00805; "D3R24 Turbine and Generator Sand Blasting Activities," Revision 0
- RWP-DR-03-16-00510; "D3R24 Drywell ERV, SRV, and Target Rock Activities," Revision 0
- RWP-DR-03-16-00512; "D3R24 Drywell CRD Support Activities," Revision 0
- RWP-DR-03-16-00509; "D3R24 Drywell MSIV Activities," Revision 0
- RWP-DR-03-16-00513; "D3R24 Drywell CRD Exchange," Revision 0
- RWP-DR-03-16-00903; "D3R24 Refuel Floor Platform IVVI Activities," Revision 0
- RWP-DR-03-16-00803; "D3R24 Turbine and Generator Activities," Revision 0
- RWP-DR-03-16-00518; "D3R24 Drywell ISI Activities," Revision 0
- RWP-DR-03-16-00901; "D3R24 Reactor Disassembly/Reassembly Activities," Revision 0
- RP-AA-400-1006; "Outage Exposure Estimating and Tracking," Revision 5
- RP-AA-400-1004; "Emergent Dose Control and Authorization," Revision 8
- RP-AA-400-1007; "Elevated Dose Rate Response Planning," Revision 2
- RP-AA-401-1003; "Contamination Control Practice Application," Revision 3
- RP-AA-401-1002; "Radiological Risk Management," Revision 8
- RP-AA-401-1004; "Controls for the Draining and Decontamination of BWR/PWR Reactor Cavity and Associated Pits," Revision 2
- RP-AA-550-1001; "Hot Spot Tracking," Revision 4

## 2RS2 Occupational ALARA Planning and Controls

- RP-AA-400; "ALARA Program," Revision 13
- RP-AA-401; "Operational ALARA Planning and Controls," Revision 21
- ALARA Plan for RWP-DR-03-16-00805; "D3R24 Turbine and Generator Sand Blasting Activities," Revision 0
- ALARA Plan for RWP-DR-03-16-00510; "D3R24 Drywell ERV, SRV, and Target Rock Activities," ALARA Plan for Revision 0
- ALARA Plan for RWP-DR-03-16-00512; "D3R24 Drywell CRD Support Activities," Revision 0
- ALARA Plan for ALARA Plan for RWP-DR-03-16-00509; "D3R24 Drywell MSIV Activities," Revision 0
- ALARA Plan for RWP-DR-03-16-00513; "D3R24 Drywell CRD Exchange," Revision 0

- ALARA Plan for ALARA Plan for RWP-DR-03-16-00903; "D3R24 Refuel Floor Platform IVVI Activities," Revision 0
- ALARA Plan for RWP-DR-03-16-00803; "D3R24 Turbine and Generator Activities," Revision 0

#### 4OA1 Performance Indicator Verification

- IR 2623920; "ENS Notification Completed for Secondary Containment Inop"
- IR 2623885; "Secondary Containment DP Transient (T.S. Entry Req'd)"
- IR 2559585; "U2 HPCI MGU Possible Failure"
- Unit 2(3) Appendix A; "Daily Surveillance Log for Eight Hour Shifts," Revision 136
- Reportable Event SAF 1.8: "Event or Condition That Could Have Prevented Fulfillment of a Safety Function"
- Monthly Data Elements for RCS Leakage Fourth Quarter 2015 through the Third Quarter of 2016
- Monthly Data Elements for Functional Failure Fourth Quarter of 2015 through the Third Quarter of 2016
- LER 237; 249/2016-002-00, "Unit 2 HPCI Inlet Steam Drain Pot Piping Leak Resulting in HPCI Inoperability"
- LER 237; 249/2016-002-01, "Unit 2 HPCI Inlet Steam Drain Pot Piping Leak Resulting in HPCI Inoperability"
- LER 237; 249/2016-001-00, "Secondary Containment Differential Pressure Transient"
- LER 237; 249/2016-001-01, "Secondary Containment Differential Pressure Transient"
- LER 249/2016-001-00, "Alert Declared from Unit 3 HPCI Auxiliary Oil Pump Motor Fire"
- LER 237/2015-005-00, "Unit 2 HPCI Motor Gear Unit Would Not Return to Full Flow During Testing"
- LER 237/2015-005-01, "Unit 2 HPCI Motor Gear Unit Would Not Return to Full Flow During Testing"
- LER 237/2015-005-02, "Unit 2 HPCI Motor Gear Unit Would Not Return to Full Flow During Testing"
- LER 237; 249/2015-004-00, "Loss of Secondary Containment Vacuum Due to a Degraded Access Hatch"
- LER 237; 249/2015-003-00, "Unit 2 Turbine Building to Reactor Building Interlock Doors Open Simultaneously"
- LER 249/2015-001-00, "Main Steam Line Flow Switches Found Outside Tech Spec Allowed Value"
- LER 249/2015-001-01, "Main Steam Line Flow Switches Found Outside Tech Spec Allowed Value"
- IR 3948156; "Two Instances of Misreporting of CDE Data Identified"
- LS-AA-2140; Monthly Data Elements for NRC Occupational Exposure Control Effectiveness; Revision 5; Reviewed Data from January 2015 through June 2016
- LS-AA-2150; Monthly Data Elements for RETS/ODCM Radiological Effluent Occurrences; Data Reviewed from January 2015 through June 2016

#### 4OA2 Identification and Resolution of Problems

- IR 3957861; "U3 RB Side Interlock Door Magnets"
- IR 3956785; "Steam Leaks on U2"
- IR 3955927; "New Steam Leak on Heater Inlet Piping to MSDT"
- IR 3955902; "2016 Interlock Door Performance"
- IR 3953548; "U3 517' Interlock TB Door Has Broken Latch"
- IR 3943788; "2B MSDT Steam Leak"

- IR 2742528; "Steam Leak on 2-1301-16 Has Increased"
- IR 2741248; "U2 517 Ft TB/RB Interlock DR (TB Side Degraded)"
- IR 2738559; "TS 3.6.4.1 Entry / ENS Notification (RB D/P > -0.25)"
- IR 2737052; "Extent of Conditioning of U3 Desuperheat Piping"
- IR 2736509; "Leak at Connection, De-Superheat to 2A Moisture SEP Drain"
- IR 2730491; "570' RB/TB Interlock Not Operating Properly"
- IR 2728284; "U3 HP Turbine to 3D Moisture Separator Steam Leak"
- IR 2723941; "Adjustment Required to U2 517 RB Interlock Door 2-5850-52"
- IR 2719784; "570' RX Bldg/Turbine Bldg Interlock Not Operation Properly"
- IR 2695175; "Received Unexpected Alarm 902-4, E-20, RX/TURB 569 Intlk Door"
- IR 2691402; "Received Alarm 902-4, E-20, RX/TURB 569 Intlk Door Inop/Byp"
- IR 2690304; "Steam Leak: U3 HPCI Turbine Poppet Valves (Control)"
- IR 2674900; "Approximately 8 Inches of Water in the Unit 2 Condenser Pit"
- WO 01931184; "Reconfigure the 2/3 EDG HVAC Dampers"
- WO 01902201; "D2/3 OP 2Y 2.3 EDG Vent Nitrogen Back Up Functional Test"
- IR 2593932; "2/3 EDG Ventilation System Dampers Do Not Fail Safe Open"
- 50.59 Review and Screening No. 2016-197, EC 405449 and UFSAR Change # 16-015, "Reconfigure the 2/3 EDG HVAC Dampers and Related Items to Fail Open on a Loss of Instrument Air," Revision 000
- Design Change Package (DCP) 405449, "Reconfigure the 2/3 EDG HVAC Dampers and Related Items to Fail Open on a Loss of Instrument Air," Revision 000 (related to WO# 01931184)
- Design Attribute Review (DAR) 405449; "Reconfigure the 2/3 EDG HVAC Dampers and Related Items to Fail Open on a Loss of Instrument Air," Revision 000
- Work Planning Instructions for EC 405449, Rev 000, "Reconfigure the 2/3 EDG HVAC Dampers and Related Items to Fail Open on a Loss of Instrument Air"
- DFPS 4145-01; "Cardox System Operability Test," Revision 34
- DOS 5750-09; "Diesel Generator Ventilation Nitrogen Backup System Functional Test," Revision 03
- NFPA [National Fire Protection Association] 12: "Standard on Carbon Dioxide Extinguishing Systems"
- Drawing: M-37; Diagram of Instrument Air Piping, Revision AM
- Drawing: M-974; Diagram of Diesel Generator Room Ventilation, Revision K

#### 4OA3 Follow-Up of Events and Notices of Enforcement Discretion

- Supplemental Licensee Event Report (LER) 05000237/2016-002-01, "Unit 2 HPCI Inlet Steam Drain Pot Piping Leak Resulting in HPCI Inoperability"
- IR 2718004; "Relay 2-2330-150 Contacts Required Burnishing"

#### 4OA5 Other Activities

- EA-13-068; Dresden Nuclear Power Station, Units 2 and 3; Confirmatory Order (ML13298A144)
- SY-AA-103-513; Behavioral Observation Program; Revision 12
- Letter from P. Simpson to K. O'Brien; Response to Confirmatory Order EA-13-068; Dated September 30, 2014, (ML14273A482)
- Letter from C. Pederson to B. Hanson; Dresden Nuclear Power Station – Request for Relaxation of Confirmatory Order; Dated May 4, 2015, (ML15125A103)
- Letter from D. Gullott to K. O'Brien; Annual Response to Confirmatory Order EA-13-068; Dated October 28, 2015, (ML15302A183)

- Letter from P. Simpson to K. O'Brien; Final Response to Confirmatory Order EA-13-068;  
Dated October 13, 2016, (ML16288A820)
- Generic Plant Access Training; Fitness for Duty and Behavioral Observation Lesson
- IR 01578134, "Commitments associated with NRC Confirmatory Order EA-13-068"

## LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
BOP	Behavioral Observation Program
BWR	Boiling Water Reactor
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
EAL	Emergency Action Levels
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ERO	Emergency Response Organization
ERV	Electromagnetic Relief Valve
ESS	Essential Service System
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation and Air Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
ISI	Inservice Inspection
IST	In-Service Testing
LER	Licensee Event Report
LLC	Limited Liability Corporation
LLRT	Local Leak Rate Test
LPCI	Low Pressure Coolant Injection
MOV	Motor Operated Valve
MSDT	Moisture Separator Drain Tank
MSIV	Main Steam Isolation Valve
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OOS	Out-of-service
OSP	Outage Safety Plan
PI	Performance Indicator
PMT	Post-Maintenance Testing
RCS	Reactor Coolant System
RFL	Refuel
RWP	Radiation Work Permit
TBCCW	Turbine Building Cooling Water
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UPS	Uninterrupted Power Source
UT	Ultrasonic
WO	Work Order

B. Hanson

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Letter to Bryan C. Hanson from Jamnes Cameron dated

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3—NRC INTEGRATED  
INSPECTION REPORT 05000237/2016004; 05000249/2016004;  
05000237/2016501 AND 05000249/2016501

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