



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

July 25, 2016

Mr. Bryan C. Hanson
Senior VP, Exelon Generation Company
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 05000237/2016002; 05000249/2016002;
07200037/2016001

Dear Mr. Hanson:

On June 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report documents the results of this inspection, which were discussed on June 30, 2016, with Mr. P. Karaba, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report. The enclosed report documents the results of this inspection.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very low safety significance (green). The NRC has also determined that one violation is associated with this issue. Because the licensee initiated a condition report to address this issue, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. This NCV is described in the subject inspection report.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with 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 Dresden Nuclear Power Station.

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

B. Hanson

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

Sincerely,

/RA/

Jamnes Cameron, Chief
Branch 4
Division of Reactor Projects

Docket Nos. 50-237; 50-249; 72-037
License Nos. DPR-19; DPR-25

Enclosure:
IR 05000237/2016002; 05000249/2016002;
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000237; 05000249; 07200037
License Nos: DPR-19; DPR-25

Report No: 05000237/2016002; 05000249/2016002;
07200037/2016001

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: April 1, 2016 through June 30, 2016

Inspectors: G. Roach, Senior Resident Inspector
R. Elliott, Resident Inspector
N. Fields, Health Physicist, MCID, DNMS
T. Go, Health Physicist
M. Learn, Reactor Engineer, MCID, DNMS
R. Ruiz, Senior Resident Inspector, LaSalle County
Nuclear Generating Station
E. Sanchez-Santiago, Resident Inspector, Clinton Power
Station
J. Seymour, Operations Engineer
C. Zoia, Operations Engineer (Lead)

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

Enclosure

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SUMMARY

Inspection Report 05000237/2016002, 05000249/2016002, 07200037/2016001;
04/01/2016 – 06/30/2016; Dresden Nuclear Power Station, Units 2 & 3; In-Plant Airborne
Radioactivity Control and Mitigation.

This report covers a 3-month period of inspection by resident inspectors; announced baseline inspections by regional inspectors; and an inspection by regional inspectors of operational activities associated with an Independent Spent Fuel Storage Installation (ISFSI) at the Dresden Nuclear Power Station, Units 2 and 3. One Green finding was identified by the inspectors. The finding involved a Non-Cited Violation (NCV) of the U.S. Nuclear Regulatory Commission (NRC) requirements. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated February 2014.

Cornerstone: Occupational Radiation Safety

Green. A finding of very-low safety significance and an associated NCV of Title 10 of the *Code of Federal Regulations* (CFR), Part 20.1703, was an NRC-identified finding for failure to implement and maintain written procedures regarding breathing air quality that resulted in the failure to perform a continuous in-line breathing air quality test during filling of self-contained breathing apparatus (SCBA) cylinders since 2009. Specifically, on May 4, 2016, during an inspection of the licensee's air compressor, the inspectors identified that the in-line carbon monoxide (CO) detector located at the compressor high-pressure filling station was inoperable since 2009, the procedure does not specify an alternative method of CO monitoring during the filling of the SCBA cylinders. Without specifying an alternative method of monitoring and only relying on the high-temperature safety shut-off, hazardous CO gas could be introduced into the SCBA cylinders, thus degrading the Grade-D air quality, during a compressor malfunction. The licensee's corrective actions included but were not limited to revising the applicable procedures, servicing or replacing the CO monitor by the manufacturer, and installing a new air compressor at the facility.

The inspectors determined that that the finding was more than minor in accordance with Inspection Manual Chapter (IMC) 0612, in that 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 through the use of SCBAs during an emergency response use by maintaining certified air quality. Specifically, the licensee failed to implement and maintain written procedures regarding an alternative method of monitoring air quality testing to maintain the Grade-D air quality during filling of SCBA cylinders. The finding was determined to be of very-low safety significance in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," because it was not an as-low-as-reasonably-achievable planning issue, there was no overexposure nor substantial potential for an overexposure, and the licensee's ability to assess dose was not compromised.

The inspectors concluded that the cause of the issue involved a cross-cutting component in the area of human performance, resources, in that, the license did not ensure the adequacy of the procedure describing the alternate methods of CO monitoring during filling of Grade D air into the SCBA cylinders. [H.1] (Section 2RS3).

REPORT DETAILS

Summary of Plant Status

Unit 2

Unit 2 began the inspection period at full power. On May 18, unit output was briefly reduced to 940 MWe (96 percent reactor power) to insert control rod P-08 for maintenance. A down power to 190 MWe (20 percent reactor power) occurred on May 21-22 in order to make a drywell entry for repairs to the Drywell Equipment Drain System (DWEDS). On June 16, a down power to 775 MWe (82 percent reactor power) was required to perform repairs to the 2B moisture separator drain tank. The unit was returned to full power the following day where it remained for the duration of the inspection period.

Unit 3

Unit 3 operated at or near full power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Condition—Severe Thunderstorm Watch with High Wind Conditions

a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility for April 2, 2016, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. The inspectors walked down the off-site power and reactor recirculation adjustable speed drive systems, in addition to the licensee's emergency alternating current (AC) power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors' evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. The inspectors also reviewed licensee thermography inspection results for the 345 KV switchyard following the high wind conditions to ensure no deficiencies were developed as a result of the extreme 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. The inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Readiness of Offsite and Alternate AC Power Systems

a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate AC power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- coordination between the TSO and the plant during off-normal or emergency events;
- explanations for the events;
- estimates of when the offsite power system would be returned to a normal state; and
- notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

The inspectors performed a walkdown of the 345 KV, 138 KV, and 34.5 KV switchyards and performed a review of maintenance history for components associated with the off-site power system.

Documents reviewed are listed in the Attachment to this report. 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.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- unit 3 Division I low pressure coolant injection/containment cooling service water (LPCI/CCSW) upon return to service from a preventative maintenance outage;
- 2/3B standby gas treatment (SBGT) w/ 2/3A SBGT out-of-service (OOS);
- unit 2 high pressure coolant injection (HPCI) upon return to service following a corrective maintenance outage;
- unit 2 isolation condenser (IC) with HPCI Inoperable; and
- unit 3 IC after HPCI auxiliary oil pump fire

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, 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 five 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 1.1.1.5A, unit 3 reactor building, elevation 589' (IC area);
- unit 2 emergency diesel generator (EDG) carbon dioxide fire suppression system 2 year logic test;
- Fire Zone 8.2.4, unit 3 cable tunnel, elevation 502';
- Fire Zone 9.0.B, unit 3 diesel generator room, elevation 517'; and
- Fire Zone 11.3, unit 2/3 crib house, elevations 509' and 517'.

The inspectors reviewed areas and one fire protection suppression system test 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 five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Underground Vaults

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors verified the licensee was performing periodic (bi-monthly for station blackout (SBO) manhole 1 and quarterly for SBO manhole 3) inspections. The inspectors accompanied

the licensee during a periodic inspection of the SBO manholes and noted that cables in SBO manhole 1 were submerged. The inspectors observed the licensee pump out water from the affected cable vault and ensured that the affected cables' splices were intact, and that appropriate cable support structures were in place. In security manholes 1 and 2, the inspectors verified that level alarm circuits were set appropriately to ensure that the cables would not be submerged. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- SBO north and south manholes 1 and 3; and
- security manholes 1 and 2.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On June 8 and 10, 2016, the inspectors observed the licensees' training staff perform a pilot assessment of licensed operator training scenarios and on June 22, 2016, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate Technical Specifications (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 May 21, 2016, the inspectors observed operators perform a unit 2 down power, de-inerting of containment, and containment entry for drywell equipment drain sump (DWEDS) repairs. 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 and Emergency Plan actions and notifications (if applicable).

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

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

b. Findings

No findings were identified.

.3 Biennial Written and Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results and quality of the Biennial Written Examination, administered by the licensee from April 13, 2015, through May 22, 2015, and the Annual Operating Test, administered by the licensee from April 18, 2016, through May 27, 2016, required by Title 10 *Code of Federal Regulations* (CFR), 55.59(a). The results were compared to the thresholds established in Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)," to assess the overall adequacy of the licensee's Licensed Operator Requalification Training (LORT) Program to meet the requirements of 10 CFR 55.59.

This inspection constituted one Annual Licensed Operator Requalification Examination results sample as defined in Inspection Procedure 71111.11-05.

b. Findings

No findings were identified.

.4 Biennial Review (71111.11B)

a. Inspection Scope

The following inspection activities were conducted during the weeks of May 9, 2016, and May 16, 2016, to assess: (1) the effectiveness and adequacy of the facility licensee's implementation and maintenance of its systems approach to training based LORT Program, put into effect to satisfy the requirements of 10 CFR 55.59; (2) conformance with the requirements of 10 CFR 55.46 for use of a plant referenced simulator to conduct operator licensing examinations and for satisfying experience requirements; and (3) conformance with the operator license conditions specified in 10 CFR 55.53. The documents reviewed are listed in the Attachment to this report.

- Licensee Regualification Examinations (10 CFR 55.59(c); Systems Approach to Training element 4 as defined in 10 CFR 55.4): The inspectors reviewed the licensee's program for development and administration of the LORT biennial written examination and annual operating tests to assess the licensee's ability to develop and administer examinations that are acceptable for meeting the requirements of 10 CFR 55.59(a).
 - The inspectors conducted a detailed review of one biennial requalification written examination version to assess content, level of difficulty, and quality of the written examination materials. (02.03)
 - The inspectors conducted a detailed review of 13 Job Performance Measures and 4 simulator scenarios to assess content, level of difficulty, and quality of the operating test materials. (02.04)
 - The inspectors observed the administration of the annual operating test to assess the licensee's effectiveness in conducting the examination, including the conduct of pre-examination briefings, evaluations of individual operator and crew performance, and post-examination analysis. The inspectors evaluated the performance of one crew in parallel with the facility evaluators during two dynamic simulator scenarios, and evaluated various licensed crew members concurrently with facility evaluators during the administration of several Job Performance Measures. (02.05)
 - The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. (02.07)
- Conformance with Examination Security Requirements (10 CFR 55.49): The inspectors conducted an assessment of the licensee's processes related to examination physical security and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests."

The inspectors reviewed the facility licensee's examination security procedure, and observed the implementation of physical security controls (e.g., access restrictions and simulator I/O controls) and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the inspection period. (02.06)

- Conformance with Operator License Conditions (10 CFR 55.53): The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators, and which control room positions were granted watch-standing credit for maintaining active operator licenses. Additionally, medical records for ten operators were reviewed for compliance with 10 CFR 55.53(l). (02.08)
- Conformance with Simulator Requirements Specified in 10 CFR 55.46: The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements. The inspectors reviewed a sample of simulator performance test records (e.g., transient tests, malfunction tests, scenario based tests, post-event tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy corrective action process to ensure that simulator fidelity was being maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. (02.09)
- Problem Identification and Resolution (10 CFR 55.59(c); Systems Approach to Training element 5 as defined in 10 CFR 55.4): The inspectors assessed the licensee's ability to identify, evaluate, and resolve problems associated with licensed operator performance (a measure of the effectiveness of its LORT Program and their ability to implement appropriate corrective actions to maintain its LORT Program up-to-date). The inspectors reviewed documents related to licensed operator performance issues (e.g., recent examination and inspection reports including cited and non-cited violations; U.S. Nuclear Regulatory Commission End of Cycle and Mid-Cycle reports; U.S. Nuclear Regulatory Commission plant issue matrix; licensee event reports; licensee condition/problem identification reports including documentation of plant events and review of industry operating experience). The inspectors also sampled the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. (02.10)

This inspection constituted one Biennial Licensed Operator Requalification Program inspection sample as defined in Inspection Procedure 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 systems:

- EDG 10 CFR 50.65(a)(1) action plan and quality control audit; and
- unit 2 and 3 feed water systems.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in or could have 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 performed a quality control audit by ensuring the control of quality parts during the maintenance process, specifically the control and segregation of safety-related parts that were being used in the replacement of the starting air system associated with the 2/3 EDG. The inspectors verified the integrity of safety-related parts lay down areas in the mechanical maintenance shop as well as in the field, ensuring quality parts including consumable items (lubricants, sealants, etc.) were properly labeled, segregated, and installed.

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

This inspection constituted one quarterly maintenance effectiveness sample and one quality control sample as defined in IP 71111.12-05.

b. Findings

No findings were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- unit 3 emergent repairs to main generator stator water cooling temperature and pressure control instrument air piping;
- unit 3 YELLOW risk with Division 1 LPCI/CCSW OOS;
- emergent repairs to the 2/3 EDG due to a speed board control circuit failure;
- unit 2 HPCI unavailable due to a steam leak with U2 LPCI previously unavailable; and
- unit 3 HPCI inoperable due to auxiliary oil pump fire.

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

Documents reviewed during this inspection are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted 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:

- historical operability of reactor protection system condenser low vacuum scram function with two channels out of technical specification tolerance;
- breaker contact deficiency for MOV 2-2301-14 HPCI main pump recirculation to torus isolation valve;
- impact of exceeding snubber alignment criteria on 2A reactor recirculation pump seismic support lug; and

- reactor protection system (RPS) contacts latent failure with the potential to energize back-up scram valves.

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 four samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

.2 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

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

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

This review constituted one operator workaround annual inspection sample as defined in IP 71115–02.

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:

- 2/3A SBGT;
- 2/3 reactor building closed cooling water (RBCCW) pump;
- unit 3 EDG;
- unit 2/3 EDG;
- unit 2 LPCI logic relays; and
- main control room ventilation and air conditioning system, train A.

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 six post-maintenance testing samples as defined in IP 71111.19–05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- WO 01893370, "Dresden 3 Quarterly TS Core Spray Pump Test With Torus Available for IST Data Surveillance" (in-service testing);
- WO 01889454, "Dresden 2 Quarterly TS Anticipated Transient Without Scram Recirculation Pump Trip/Alternate Rod Insertion Master Trip Unit/Slave Trip Unit Channel Functional Test" (routine);
- WO 01730845, "Reactor High Steam Dome Pressure Scram Channel Calibration" (routine);
- WO 01884181, "Dresden 2 Semi-Annual Preventative Maintenance Verification of Motor Operated Valve 2-1301-3 Stroke Length" (routine); and
- WO 01916057, "Dresden 2/3 Quarterly Common 'B' Isolation Condenser Make-Up Pump Operability" (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 for in-service testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;

- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on February 11 and again on February 18, 2016, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator control room and the Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06–06. This sample was performed during the first quarter 2016, but was omitted from NRC Inspection Report 05000237; 05000249/2016–001 (ADAMS Accession Number ML16120A618).

b. Findings

No findings were identified.

.2 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on June 7, 2016, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the main control room simulator and the Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06–06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety, Occupational Radiation Safety

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

.1 Engineering Controls (02.02)

a. Inspection Scope

The inspectors reviewed procedural guidance for use of ventilation systems, and assessed whether the systems were used, to the extent practicable, during high-risk activities to control airborne radioactivity and minimize the use of respiratory protection. The inspectors assessed whether installed ventilation airflow capacity, flow path, and filter/charcoal unit efficiencies for selected systems were consistent with maintaining concentrations of airborne radioactivity in work areas below the concentrations of an airborne area to the extent practicable. The inspectors also evaluated whether selected temporary ventilation systems used to support work in contaminated areas were consistent with licensee procedural guidance and as-low-as-reasonably-achievable (ALARA).

The inspectors reviewed select airborne monitoring protocols to assess whether alarms and set points were sufficient to prompt worker action. The inspectors assessed whether the licensee established trigger points for evaluating levels of airborne beta-emitting and alpha-emitting radionuclides.

These inspection activities constituted one sample as defined in Inspection Procedure (IP) 71124.03–05

b. Findings

No findings were identified.

.2 Use of Respiratory Protection Devices (02.03)

a. Inspection Scope

The inspectors assessed whether the licensee provided respiratory protection devices for those situations where it was impractical to employ engineering controls such that occupational doses were ALARA. For select instances where respiratory protection devices were used, the inspectors assessed whether the licensee concluded that further engineering controls were not practical. The inspectors also assessed whether the licensee had established means to verify that the level of protection provided by the respiratory protection devices was at least as good as that assumed in the work controls and dose assessment.

The inspectors assessed whether the respiratory protection devices used to limit the intake of radioactive materials were certified by the National Institute for Occupational Safety and Health/Mine Safety and Health Administration or have been approved by the U.S. Nuclear Regulatory Commission (NRC). The inspectors evaluated whether the devices were used consistent with their National Institute for Occupational Safety and Health/Mine Safety and Health Administration certification or any conditions of their NRC approval.

The inspectors reviewed records of air testing for supplied-air devices and self-contained breathing apparatus (SCBA) bottles to assess whether the air used met or exceeded Grade D quality. The inspectors evaluated whether plant breathing air supply systems satisfied the minimum pressure and airflow requirements for the devices.

The inspectors evaluated whether selected individuals qualified to use respiratory protection devices had been deemed fit to use the devices by a physician.

The inspectors observed selected individuals donning, doffing, and functionally checking respiratory protection devices as appropriate and assessed whether these individuals knew how to safely use the device and how to properly respond to any device malfunction or unusual occurrence.

The inspectors observed the physical condition of respiratory protection devices ready for issuance and reviewed records of routine inspection for selected devices. The inspectors reviewed records of maintenance on the vital components for selected devices and assessed whether onsite personnel assigned to repair vital components received vendor-provided training.

These inspection activities constituted one sample as defined in IP 71124.03–05

b. Findings

Introduction: The inspectors identified a finding of very-low safety significance (Green) and an associated NCV of Title 10 CFR, Part 20.1703, for failure to implement and maintain written procedures regarding breathing air quality which resulted in the failure to perform a continuous in-line breathing air quality test during filling of SCBA cylinders.

On May 4, 2016, the inspectors identified that the in-line carbon monoxide (CO) monitor located at the air compressor high-pressure fill station was not operational since 2009. The procedure did not specify alternative methods of CO monitoring during filling of SCBA cylinders. Specifically, the licensee failed to adequately implement effective CO monitoring of the air used to fill SCBA cylinders.

Description: On May 4, 2016, during a routine inspection of the Eagle Air compressor used to fill SCBA cylinders at the Dresden Nuclear Power Station, the inspectors identified that the in-line CO monitor located at the high pressure side of the filling station was out of service since 2009. This in-line CO gas monitor was installed by the manufacturer to monitor the oiled based lubricant air compressor, in the event of compressor failure. The licensee did perform periodic Grade D air testing of the air compressor (including CO). Station procedure RP-DR-827 specified alternate sampling must be performed when the installed in-line CO was out of service, however, this procedure does not adequately specify how this sampling was to be performed. The inspectors observed this sampling was performed on the inlet of the air compressor. This practice did not adequately ensure the air quality on the outlet of the air compressor was acceptable. Specifically, there was no specific instruction where to place the monitor, and without a specific instruction, the licensee's technicians routinely placed this portable air monitor on the air intake section of the air compressor rather than the high pressure side of the compressor in-line with the cylinder filling station where the inoperative in-line CO monitor was located.

The licensee determined that the alternative method as described on the procedure was adequate because the air compressor has a built-in a high temperature cut-off switch on the compressor side and at quarterly intervals, the compressor air quality was tested by an independent laboratory testing company to meet Grade-D air quality.

Nevertheless, the inspectors determined that the compressor (Eagle-Air Breathing System) was an oil-lubricated compressor that has an installed in-line air filtration system that was capable of removing oil, water, particulates, objectionable taste and odors to meet Grade-D air standard for SCBA cylinders. However, it does not remove CO gas from the system caused by a malfunctioning air compressor. The high temperature sensor installed on the compressor detects ignition of lubricant by shutting off the compressor, the in-line CO monitor functioned as a redundancy system thus ensuring Grade D air quality was maintained by detecting a trace amount of CO gas in parts per million range. When the CO monitor was unavailable, the air compressor relied only on one single point of failure detection through the temperature sensor and a trace amount of CO may have been generated without any detection. The alternate method of detection stated in the procedure doesn't constitute a redundancy system because the alternate CO detector was routinely placed on the intake side of the compressor. Therefore, the alternate gas monitoring was incapable of detecting CO gas during refilling of the SCBA cylinders when the air compressor/temperature sensor malfunctioned.

As corrective actions, the licensee called the manufacturer, and a manufacturer representative was currently repairing the unit. Additionally, the licensee was also in the process of installing a new air Raven Eagle SCBA compressor system. The licensee indicated that in the interim, the licensee will perform sampling of current SCBA cylinders for carbon monoxide gas from past fillings.

Analysis: The inspectors determined that this issue of concern was a performance deficiency because the licensee failed to effectively implement and maintain written procedures regarding breathing air quality which resulted in the failure to perform a continuous in-line breathing air quality test during filling of SCBA cylinders since 2009. Specifically, the in-line CO monitor was defective and out of service and the licensee did not implement an alternative method approved by the manufacturer to sample the air quality that was necessary to demonstrate compliance with the requirements of 10 CFR 20.1703. The inspectors determined that the cause of the performance deficiency was reasonably within the licensee's ability to foresee and correct and should have been prevented.

The finding was not subject to traditional enforcement since the incident did not have a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and was not willful.

The inspectors also determined that that the finding was more than minor in accordance with Inspection Manual Chapter (IMC) 0612, in that 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, the less than adequate procedures to determine the air quality could result in unplanned and unintended contamination of the SCBA cylinders with CO gas originating from the air compressor. The inspectors also concluded that the potential consequence of CO contamination could cause an immediate danger to life or health condition for the SCBA wearer during a plant emergency response. The finding was assessed using IMC 0609, Appendix C, and Occupational Radiation Safety Significance Determination Process and was determined to be of very-low safety significance because it was not an ALARA planning issue, there was no overexposure nor substantial potential for an overexposure, and the licensee's ability to assess dose was not compromised.

Consequently, the inspectors concluded that the cause of the issue involved a cross-cutting component in the area of human performance, resources in that, the licensee did not ensure the adequacy of the procedure describing the alternate methods of CO monitoring during the filling of Grade D air into the SCBA cylinders. [H.1]

Enforcement: Title 10 CFR 20.1703 states, in part, that the licensee shall make use of individual respiratory protection equipment and to the extent practical shall implement and maintain a Respiratory Protection Program that includes written procedures regarding breathing air quality to be maintained at Grade-D air quality criteria (CO content to less than ten part per million).

Contrary to the above, on May 4, 2016, the licensee failed to implement and maintain written procedures regarding breathing air quality which resulted in the failure to perform a continuous in-line breathing air quality test during filling of SCBA cylinders since 2009. Specifically, the in-line CO monitor was defective and out-of-service and the licensee did not implement an alternative method approved by the manufacturer to sample the air quality that was necessary to demonstrate compliance with the requirements of 10 CFR 20.1703. Since the failure to adequately implement and maintain a Respiratory Protection Program that includes written procedures regarding the breathing air quality to maintain Grade-D air quality criteria was of very-low safety significance, corrective actions were established as described above, and the issue was entered into the

licensee's Corrective Action Program as Issue Report (IR) 2666210, the violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV 05000237/2016002-01; 05000249/2016002-01; "Failure to Implement and Maintain Written Procedures Regarding Breathing Air Quality Testing"**).

.3 Self-Contained Breathing Apparatus for Emergency Use (02.04)

a. Inspection Scope

The inspectors reviewed the status and surveillance records for select SCBAs. The inspectors evaluated the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions.

The inspectors assessed whether control room operators and other emergency response and radiation protection personnel were trained and qualified in the use of SCBAs and evaluated whether personnel assigned to refill bottles were trained and qualified for that task.

The inspectors assessed whether appropriate mask sizes and types were available for use. The inspectors evaluated whether on-shift operators had no facial hair that would interfere with the sealing of the mask and that appropriate vision correction was available.

The inspectors reviewed the past two years of maintenance records for selected in-service SCBA units used to support operator activities during accident conditions. The inspectors assessed whether maintenance or repairs on an SCBA unit's vital components were performed by an individual certified by the manufacturer of the device to perform the work. The inspectors evaluated the onsite maintenance procedures governing vital component work to determine whether there was any inconsistencies with the SCBA manufacturer's recommended practices. The inspectors evaluated whether SCBA cylinders satisfied the hydrostatic testing required by the U.S. Department of Transportation.

These inspection activities constituted one sample as defined in IP 71124.03-05

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.05)

a. Inspection Scope

The inspectors assessed whether problems associated with the control and mitigation of in-plant airborne radioactivity were being identified by the licensee at an appropriate threshold and were properly addressed for resolution. Additionally, the inspectors evaluated the appropriateness of the corrective actions for selected problems involving airborne radioactivity documented by the licensee.

These inspection activities constituted one sample as defined in IP 71124.03-05.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

.1 Source Term Characterization (02.02)

a. Inspection Scope

The inspectors evaluated whether the licensee had characterized the radiation types and energies being monitored and that the characterization included gamma, beta, hard-to-detect activity and neutron radiation.

The inspectors assessed whether the licensee had developed scaling factors for including hard-to-detect nuclide activity in internal dose assessments.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.2 External Dosimetry (02.03)

a. Inspection Scope

The inspectors evaluated whether the licensee's dosimetry vendor was National Voluntary Laboratory Accreditation Program accredited and if the approved irradiation test categories for each type of personnel dosimeter used were consistent with the types and energies of the radiation present and the way the dosimeter was being used.

The inspectors evaluated the onsite storage of dosimeters before their issuance, during use, and before processing/reading. For personal dosimeters stored on-site during the monitoring period, the inspectors evaluated whether they were stored in low-dose areas with control dosimeters. For personal dosimeters that are taken off-site during the monitoring period, the inspectors evaluated the guidance provided to individuals with respect to care and storage of the dosimeter.

The inspectors evaluated the calibration of active dosimeters. The inspectors assessed the bias of the active dosimeters compared to passive dosimeters and the correction factor used. The inspectors also assessed the licensee's program for comparing active and passive dosimeter results, investigations for substantial differences, and recording of dose. The inspectors assessed whether there were adverse trends for active dosimeters.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.3 Internal Dosimetry (02.04)

a. Inspection Scope

The inspectors reviewed procedures used to assess internal dose using whole body counting equipment to evaluate whether the procedures addressed methods for differentiating between internal and external contamination, the release of contaminated individuals, the route of intake and the assignment of dose. The inspectors assessed whether the frequency of measurements was consistent with the biological half-life of the nuclides available for intake. The inspectors reviewed the licensee's evaluation for use of portal radiation monitors as a passive monitoring system to determine if instrument minimum detectable activities were adequate to detect internally deposited radionuclides sufficient to prompt additional investigation. The inspectors reviewed whole body counts and evaluated the equipment sensitivity, nuclide library, review of results, and incorporation of hard-to-detect radionuclides.

The inspectors reviewed procedures used to determine internal dose using in vitro analysis to assess the adequacy of sample collection, determination of entry route and assignment of dose.

The inspectors reviewed the licensee's program for dose assessment based on air sampling, as applicable, and calculations of derived air concentration. The inspectors determined whether flow rates and collection times for air sampling equipment were adequate to allow lower limits of detection to be obtained. The inspectors assessed select dose assessments based on air sampling for adequacy.

The inspectors reviewed select internal dose assessments and evaluated the monitoring protocols, equipment, and data analysis.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.4 Special Dosimetric Situations (02.05)

a. Inspection Scope

The inspectors assessed whether the licensee informs workers of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for declaring a pregnancy. The inspectors selected individuals who had declared pregnancy during the current assessment period and evaluated whether the monitoring program for declared pregnant workers was technically adequate to assess the dose to the embryo/fetus. The inspectors assessed results and/or monitoring controls for compliance with regulatory requirements.

The inspectors reviewed the licensee's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated the licensee's criteria for determining when alternate monitoring was to be implemented. The inspectors reviewed dose assessments performed using

multi-badging to evaluate whether the assessment was performed consistently with licensee procedures and dosimetric standards.

The inspectors reviewed select shallow dose equivalent dose assessments for adequacy.

The inspectors evaluated the licensee's program for neutron dosimetry, including dosimeter types and/or survey instrumentation.

The inspectors reviewed select neutron exposure situations and assessed whether dosimetry and/or instrumentation was appropriate for the expected neutron spectra, there was sufficient sensitivity, and neutron dosimetry was properly calibrated. The inspectors also assessed whether interference by gamma radiation had been accounted for in the calibration and whether time and motion evaluations were representative of actual neutron exposure events.

For the special dosimetric situations reviewed in this section, the inspectors assessed how the licensee assigns dose of record. This included an assessment of external and internal monitoring results, supplementary information on individual exposures, and radiation surveys and/or air monitoring results when dosimetry was based on these techniques.

These inspection activities constituted one sample as defined in IP 71124.04–05.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems (02.06)

a. Inspection Scope

The inspectors assessed whether problems associated with occupational dose assessment are being identified by the licensee at an appropriate threshold and are properly addressed for resolution. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving occupational dose assessment.

These inspection activities constituted one sample as defined in IP 71124.04–05.

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 Mitigating Systems Performance Index—Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System (MS06) performance indicator for Dresden Nuclear Power Station, Units 2 and 3, covering the period from the 2nd quarter 2015 through 1st quarter 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, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports and NRC Integrated Inspection Reports for the period of April 2015 through March 2016 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI emergency AC power system samples as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index—High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - High Pressure Injection Systems (MS07) performance indicator for Dresden Nuclear Power Station, Units 2 and 3, covering the period from the 2nd quarter 2015 through 1st quarter 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, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports and NRC Integrated Inspection

Reports for the period of April 2015 through March 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. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two MSPI high pressure injection system samples as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity Performance Indicator (PI) for Dresden Nuclear Power Station, Units 2 and 3, for the period from the first quarter 2015 through the first quarter 2016. The inspectors used PI definitions and guidance contained in the Nuclear Energy Institute 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 reactor coolant system chemistry samples, technical specification requirements, issue reports, event reports and NRC Integrated Inspection Reports 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. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two reactor coolant system specific activity samples as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of January 2016 through June 2016, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental

problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

The inspectors and the licensee noted similar trends in program effectiveness and human performance standards. Although these deficiencies did not always result in any immediate adverse consequences, a potential trend in these areas is apparent and suggests that additional licensee attention to effect corrective actions may be appropriate. The licensee entered the following potential adverse trend into their CAP during this time period: Operations fundamental focus area self-assessment (FASA) deficiency (IR 2635948). Specific examples associated with degraded program effectiveness and human performance standards trends included, but were not limited to:

- Not properly utilizing the CAP to capture, identify, and properly resolve degraded plant equipment in a timely manner (IR 2673322) as well instances where IRs and WOs were closed prematurely without correction of the identified problem (IR 2675223).
- Failure to properly report MSPI EDG reliability failures (IR 2676458), but as no threshold was crossed, this issue was considered a minor violation of NRC requirements.
- Failure to adequately document the completion of snubber inspections associated with the unit 2 core spray and isolation condenser systems (IR 2681869).
- Inability to locate completion records for periodic radiation surveys on HI-STAR spent fuel dry storage casks. This issue was considered a minor violation of NRC requirements because the licensee successfully completed the surveillances when they were notified of the oversight by the inspectors (IR 2677592).
- On April 17, 2016, while performing the Unit 2 quarterly average power range monitor (APRM) rod block and scram function surveillance, the operators received an unexpected alarm (Channel B Reactor Scram). This unexpected half scram (condition in which half of the necessary logic to achieve a scram actuated) was generated when the incorrect APRM mode switch was manipulated during routine testing. The APRM was returned to operate and the Channel B half scram was reset (IR 2656804).
- On April 30, 2016, the licensee exceeded the drywell floor drain sumps (DWFDS) surveillance frequency for SR 3.4.4.1. The licensee immediately performed the surveillance and all unidentified drywell leakage was within TS required limits. The DWFDS are normally pumped every 8 hours and DWFDS were last pumped at 8:00 a.m. and would not be available for the next scheduled pumping at 4:00 p.m. due to scheduled maintenance. After review of TS limiting condition for operations (LCOs) the licensee made the assumption that pumping the sumps at 12:00 a.m. (the next scheduled pumping) would be sufficient to meet a 24 hour LCO. They did not verify their assumption and validate the Technical Specification Surveillance

Requirement per TRM Appendix I “Surveillance Frequency Control Program” which is a 12 hour LCO (IR 2663515). This issue was considered a minor violation of NRC requirements because the licensee successfully completed the surveillances when they identified the issue.

- On May 17, 2016, the licensee inadvertently initiated the fire suppression deluge system when a maintenance technician took unauthorized resistance readings while attempting to troubleshoot an alarming condition with the fire detection system in the unit 2/3 crib house (IR 2670555).

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

b. Findings

No findings were identified.

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

.1 (Closed) Licensee Event Report (LER) 05000237/2016–001–00, “Secondary Containment Differential Pressure Transient”

On February 9, 2016, at 7:00 p.m. the operating heating boiler tripped offline. At 7:15 p.m., main control room (MCR) operators received a reactor building differential pressure low alarm. Equipment operators were dispatched into the field and locally determined reactor building to outside environment differential pressure to be -0.35 inches water column. This is a low value as compared to the normal -0.65 inches water column but greater than the -0.25 inches water column required for Secondary Containment operability by the TS. Abnormal Operating Procedure DOA 5700–01, “Loss of Heating Boilers” was entered by the operators and reactor building ventilation supply plenum doors were opened in accordance with step D.8 of the procedure in order to prevent freezing of the reactor building ventilation supply plenum filters and cooling coils by allowing warm turbine building air to mix with the extremely cold outside air entering the system. In addition to the loss of the operating heating boiler, plant staff had previously identified that the unit 3 area differential pressure controller (3–5703–15B) was operating low out of tolerance which had the effect of not permitting the reactor building exhaust dampers from opening as far as would be expected based on supply air flow conditions. At 9:42 p.m., reactor building to outside environment differential pressure degraded to -0.24 inches water column. The combination of the colder, denser intake air and the open supply plenum doors lead to a greater quantity of air entering the reactor building ventilation supply system. This, along with the degraded exhaust differential pressure controller, resulted in reduced secondary containment vacuum conditions and an unplanned entry into secondary containment TS 3.6.4.1.A for not maintaining the required -0.25 inches water column vacuum inside the secondary containment boundary. Operators shutdown the degraded unit 3 reactor building ventilation system at 10:05 p.m. and vacuum conditions quickly recovered on the unit 2 reactor building ventilation system to in excess of -0.25 inches water column and TS 3.6.4.1.A was exited at 10:07 p.m.

Corrective actions for this event included repairs to the affected differential pressure controller; implementation of a component monitoring strategy for the reactor building ventilation differential pressure controllers that focuses on controller output versus

secondary containment differential pressure in order to uncover masked performance issues; a revision to operations procedure DOA 5700–01 to incorporate lessons learned for a loss of heating boiler coincident with a degraded reactor building ventilation system; and a review of the differential pressure controller design and surveillance frequency.

The licensee reported this event in accordance with 10 CFR 50.73(a)(2)(v)(C), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material. No findings or violations of NRC requirements were identified.

This LER is closed.

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

.2 Alert Declared Due to Fire in Unit 3 HPCI Auxiliary Oil Pump Motor

a. Inspection Scope

The inspectors reviewed the plant's response to the following:

On June 27, 2016 during an operability surveillance, the Unit 3 HPCI system auxiliary oil pump (AOP) was discovered on fire. The fire was extinguished and the breaker for the AOP motor was turned off. Based on initial assessment of the event and meeting the Emergency Action Level (EAL) threshold criteria an Alert, MA5, was declared at 10:50 a.m. The Alert was terminated at 1:19 p.m. The HPCI system was declared inoperable and Technical Specification 3.5.1 condition G was entered, requiring HPCI to be operable within 14 days. The Licensee will submit a LER within 60 days per 10 CFR 50.73 and the inspectors will perform an event follow-up review in a future report.

Documents reviewed are listed in the Attachment to this report.

This event follow-up review does not constitute a sample as defined in IP 71153–05.

40A5 Other Activities

.1 Operation of an ISFSI at Operating Plants (60855.1)

a. Inspection Scope

The inspectors observed and evaluated select licensee loading, processing, and transfer operations of the fourth canister during the licensee's 2016 dry fuel storage campaign to verify compliance with the applicable Certificate of Compliance (CoC) conditions, the associated Technical Specifications, and approved Independent Spent Fuel Storage Installation (ISFSI) procedures. Specifically, the inspectors observed: placement of the multi-purpose canister (MPC) within the transfer cask (HI-TRAC) into the spent fuel pool, loading of fuel assemblies into the MPC; decontamination and surveying; welding and non-destructive testing of the MPC lid-to-shell weld; draining of water from the MPC; vacuum drying of the MPC; welding and non-destructive testing of the MPC closure rings; and transfer of the MPC from the HI-TRAC to storage cask (HI-STORM). The licensee used the Holtec International HI-STORM 100 Cask System for this campaign.

The inspectors reviewed procedures used to perform ISFSI preparation, loading, sealing, transfer, monitoring, and storage activities. The inspectors also reviewed applicable heavy loads procedures and inspection documentation to determine compliance with the site's heavy loads program. Select documents, in part, were reviewed after the licensee completed certain loading activities.

The inspectors reviewed the licensee's evaluations associated with fuel characterization and selection for storage. The licensee did not plan to load any damaged fuel assemblies or fuel debris during this campaign. The inspectors reviewed the canister fuel selection packages for the 2016 campaign to verify that the licensee was loading fuel in accordance with the CoC-approved contents. The inspectors reviewed a number of condition reports and the associated corrective actions since the last ISFSI inspection. The inspectors also reviewed 72.48 screenings and changes to the licensee's 10 CFR 72.212 evaluations since the last ISFSI inspection.

The inspectors performed a walk-down of the East and West ISFSI pads to assess the material condition of the pad and the loaded Holtec International Storage, Transport and Repository (HI-STAR) casks and HI-STORM 100 storage casks. The inspectors reviewed the licensee's ISFSI radiation monitoring program. Additionally, the inspectors performed independent radiation surveys around the ISFSI pads and storage casks.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On June 30, 2016, the inspectors presented the inspection results to Mr. P. Karaba, 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 areas of the licensed operator program Biennial Review (71111.11B) with Mr. A. Pullam, Training Director, on May 20, 2016.
- The results of the ISFSI operational inspection on June 6, 2016, with Mr. J Washko, Plant Manager, and other members of the licensee's staff.
- The inspection results for the areas of in-plant airborne radioactivity control and mitigation; occupational dose assessment; and RCS specific activity performance indicator verification with Mr. B. Franzen, Regulatory Assurance Manager, on June 16, 2016.
- The inspection results for the areas of the Biennial Written and Annual Operating Test Results (71111.11A) with Mr. G. Morrow, Operations Director, on June 23, 2016.

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

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Karaba, Site Vice President
J. Washko, Station Plant Manager
L. Antos, Manager Site Security
M. Budelier, Senior Engineering Manager
S. Butala, Senior Radiation Protection Technical Specialist
G. Chavez; Dry Cask Storage Senior Program Manager
M. Cichon; Dresden Dry Cask Storage Project Manager
J. Connelly, Engineering Manager
T. Ditchfield, Shift Operations Superintendent
P. DiSalvo, GL 89-13 Program Owner
D. Doggett, Emergency Preparedness Manager
B. Franzen, Regulatory Assurance Manager
D. Glick, Radioactive Material Shipping Specialist
F. Gogliotti, Director, Site Engineering
M. Hosain, Site EQ Engineer
R. Johnson, Chemistry
D. Ketchledge, Engineering
J. Kish, Site ISI
G. Morrow, Operations Director
S. Matzke, Corrective Action Program Coordinator
M. Overstreet, Radiation Protection Manager
M. Pavey, Health Physicist
A. Pullam, Director, Site Training
J. Quinn, Director, Site Maintenance
D. Schiavoni, Engineering
R. Schmidt, Manager Site Chemistry, Environment & Radwaste
R. Sisk, Buried Pipe Program Owner
D. Siuda, Operations Training Instructor
D. Thomas, Training Manager
D. Walker, Regulatory Assurance – NRC Coordinator

U.S. Nuclear Regulatory Commission

J. Cameron, Chief, Division of Reactor Projects, Branch 4

IEMA

M. Porfirio, Resident Inspector, Illinois Emergency Management Agency

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000237/2016002-01 05000249/2016002-01	NCV	Failure to Implement and Maintain Written Procedures Regarding Breathing Air Quality Testing (Section 2RS3)
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Closed

05000237/2016002-01 05000249/2016002-01	NCV	Failure to Implement and Maintain Written Procedures Regarding Breathing Air Quality Testing (Section 2RS3)
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05000237/2016-001-00 05000249/2016-001-00	LER	Secondary Containment Differential Pressure Transient
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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

- DOP 6100-E2, "Unit 2(3) Reserve Auxiliary Transformer 22(32)," Revision 13
- Engineering Change Request 423343, "Determine Need for Sealant in Conduits in the 345 Relay House Basement"
- IR 2660240, "TR-86 Desiccant in Pink"
- IR 2660130, "Unexpected Alarm 923-2 C-7, TR86 CB86 Trouble"
- IR 2660022, "2/3 8600-TR-10 Blanket Pressure Low"
- IR 2660018, "2-6200-26Q TR 2 Temp Indicator Peak Needle Not Working"
- IR 2660016, "2-6200-49-2 TR 2 Temp Indicator Peak Needle Not Working"
- IR 2660014, "2-6200-49-1 TR 2 Temp Indicator Peak Needle Not Working"
- IR 2659674, "NRC Switchyard Walkdown"
- IR 2659242, "U2 SBO Oil Leak on AC/DC Oil Pump Discharge"
- IR 2658760, "Received Alarm 34KV SWYD major Trouble"
- IR 2658627, "Nuclear EGPM Voltage Monitoring PC Locked Up in MCR"
- IR 2657523, "923-2 C-3, TR81 TR83 TR86 Minor"
- IR 2654608, "TR86 Sys 2 Batt Cell Voltage Low"
- IR 2654607, "TR86 Sys 2 Batt cell Voltage Low"
- IR 2654605, "TR86 Sys 2 Batt Cell Voltage Below Average"
- IR 2650594, "Higher Than Normal Resistance Connection Found on Battery"
- Maintenance Risk Function Failure (MRFF) Definition for System 97: 345kv Switchyard, Function 1, To Provide a Means of Supplying a Diversity of Reliable Power Sources to the Reserve Auxiliary
- MRFF Definition for System 97: 345kv Switchyard, Function 2, To Supply a Means of Transmitting Electrical Power Generated by the Plant
- Risk Significance for System 97: 345kv Switchyard, Function 1
- Monthly Monitoring Evaluation for System 97: 345kv Switchyard, March 2016
- OP-AA-108-107, "Switchyard Control," Revision 4
- OP-AA-108-107-1001, "Station Response to Grid Capacity Conditions," Revision 6
- OP-AA-108-107-1002, "Interface Procedure Between Comed / PECO and Exelon Generation (Nuclear/Power) For Transmission Operations," Revision 9
- WC-AA-101, "On Line Work Control Process," Revision 26
- WC-AA-107, "Seasonal Readiness," Revision 16
- WC-DR-8003-1003, "Dresden Station Units 2 and 3 Nuclear Plant Interface Requirements (NPIRs)," Revision 3
- DOA 6520-01, "Loss of SBO 4KV Bus 61 And/Or Bus 71," Revision 05
- DOA 6500-12, "Low Switchyard Voltage," Revision 26
- DOP 6400-08, "345 KV Voltage Control," Revision 36
- Dresden Operations Training Module/LP ID: DRE262LN003, "Switchyards," Dated October 10, 2012
- Drawing: 12E-3184, Duct Runs – Outdoor Area N.West Plan & Sections, Units 2 & 3, Revision G

- NRC Information Notice 2010–26, “Submerged Electrical Cables,” dated December 2, 2010, ADAMS Accession Number ML102800456
- IR 2649974, “34kv L1263 Trip Due to High Winds and OLR Change for U2 & U3”
- IR 2649899, “Unsecured Port of Potties East of the Switchyard Blew Over”
- IR 2649752, “DOA 0010–02 Revision Request”
- DOA 0010–02, “Tornado Warning/Severe Winds,” Revision 21
- OP–AA–108–111–1001, “Severe Weather and Natural Disaster Guidelines,” Revision 14
- Wind Speed Trends for the Period of 04/02/2016 08:00 Through 04/04/2016 02:00
- Average Wind Speeds, High Sensor Chart for 04/02/16 09:15 Through 04/02/2016 17:00
- Operations Log for 03/29/2016 17:13 Through 04/04/2016 06:56

1R04 Equipment Alignment

- IR 2655190, “Hydolaze 3A LPCI HX Drain Header WO 1871605–01”
- IR 2653534, “3A CCSW Pump Discharge Valve Could Not Be Closed”
- IR 2643847, “3D LPCI Pmp Bkr Indicates Test While Racked In”
- IR 2641314, “IEMA ID: Question on CCSW Discharge Pressure”
- IR 2630536, “3–1501–32B MOV Grease Has Liquified and Leaked Out”
- IR 2624241, “CCSW Vault Cooler EC Eval Revision”
- IR 2616883, “DOS 1500–20 As Found Leak Rate >200 SCFH”
- IR 2616884, “DOS 1500–20 As Found Leak Rate >200 SCFH”
- IR 2614884, “TCCP 398257, Fourth Extension, D CCSW Cooler”
- IR 2613729, “3D LPCI Motor Heater Oil Leak”
- DOP 1500–E1 U–3, “Unit 3 LPCI and CCSW System Electrical Checklist,” Revision 14
- DOP 1500–M1, “Unit 3 LPCI and Containment Cooling Valve Checklist,” Revision 36
- Unit 3 LPCI and CCSW Maintenance Rule Monitored Functions and Monthly Evaluation, April, 2016
- DOP 7500–M1/E1, “Unit 2/3 Standby Gas Treatment,” Revision 06
- Drawing: M–49, Diagram of Standby Gas Treatment, Revision QZ
- IR 2670087, “Steam Leak on HPCI Piping Upstream of the 2–2301–29 AOV”
- DOP 2300–M1/E1, “Unit 2 HPCI System Checklist,” Revision 39
- Prompt Investigation (Equipment) for IR 2670087
- MRC package – ICES 322781, “High Pressure Coolant Injection System Declared Inoperable Due to Steam Leak,” dated 05/18/2016
- Operator Logs for the Period of 05/11/2016 0800 Through 05/16/2016 21:32
- Protected Equipment List for Unit 3 Isolation Condenser
- Protected Equipment List for Unit 3 ADS
- Protected Equipment List for Unit 3 Div 1 Core Spray
- Protected Equipment List for Unit 3 Div 1 LPCI
- Protected Equipment List for Unit 3 Div 2 Core Spray
- Protected Equipment List for Unit 3 Div II LPCI

1R05 Fire Protection

- Dresden Pre-Fire Plan for Unit 3 Isolation Condenser Area Elev. 589’
- IR 2652105, “Fire Marshal Tour”
- IR 2655788, “Security – Coal City Fire Department Responds to Site”
- IR 2655794, “Fire Within the Owner Controlled Area”
- IR 2655833, “Truck Breaks Caught Fire”
- WO 01780650, “D2 18M TSTR/COM Emer D/G Cardox System Maintenance Test”
- WO 01781184, “Broken Light Socket in Panel 2223–53”

- IR 2662692, "NRC ID: U3 RFP FZ Issue"
- IR 2402740, "Broken Light Socket in Panel 2223-53"
- DFPS 4145-01, "Cardox System Operability Test," Revision 34
- Dresden Pre-Fire Plan for Unit 3 Cable Tunnel West Elevation 502'
- IR 2665993, "NRC/IEMA Identified Issues"
- Dresden 2 & 3 Updated Fire Hazards Analysis Report, Amendment 17, June 2009, Pages 4.10-6 & 4.10-7
- Drawing: Figure 6.5-1, Turbine Building Appendix R Fire Areas and Safe Shutdown Paths, Unit 2 & 3, Amendment 13
- Drawing: Figure 3.3-12 Cable Tunnel, Amendment 1, January 1986
- Drawing: F-12-1, Detection and Suppression Cable Tunnel, Revision F
- Dresden Generating Station Pre-Fire Plan for FZ 9.0.B, Unit 3 Diesel Generator Elevation 517', Revision 4
- Dresden 2 & 3 Updated Fire Hazards Analysis Report, Amendment 14, Page 4.10.10, June 2003
- Dresden 2 & 3 Updated Fire Hazards Analysis Report, Amendment 18, Page 4.10-14, June 2011
- Dresden 2 & 3 Updated Fire Hazards Analysis Report Amendment, Revision 1, Section 5.4.4.10, September 1985
- DFPS 4114-01, "Unit 1 Fire Equipment Inspection," Revision 33
- DFPS 4114-04, "Fire Extinguisher Annual Inspection," Revision 58
- Dresden Generating Station Pre-Fire Plan - Fire Zone 11.3, U 2/3 Crib House Elevation 517' Revision 2
- Fire Protection Impairment Permit, "2/3 Crib House Deluge isolated (2/3-4199-176 & 2/3 Crib House Protectowire (detector 51-22) INOP," dated 05/16/16
- Security Area Audit Time Details for Crib House from 06/12/2016 8:00:00 Through 06/13/2016 08:12
- Fire Watch Inspection Log for 2/3 Crib House from 06/11/2016 Through 06/13/16

1R06 Flooding

- IR 2668570, "Need to Dewater Security MH-2"
- IR 2668564, "Need to Dewater Security MH-1"
- IR 2667174, "Water Height in SBO Manhole #1"
- IR 2657255, "Need to Dewater Switch yard MH-3"
- IR 2657247, "Need to Dewater Switch Yard MH-2"
- IR 1612083, "Could Not Perform SBO Manhole INSP Due to Weather Conditions"
- IR 1454595, "ISP/Dewater Outside Manhole SBO-1 Delayed Due to Weather"
- WO 1897596, "Remove Manhole Cover to Allow Inspection of SBO Manhole #3"
- ER-AA-300-150, "Cable Condition Monitoring Program," Revision 3
- NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," Revision 2
- NUREG-1796, "Safety Evaluation Report Related to the license Renewal of Dresden Nuclear Power Station, Units 2 and 3...", Item Number 38.
- Surveillance Completion History, "D2 AN COM Insp Serv Water Pump Motor Cable Bus Duc 2-3901-B," 02/11/2208 - 12/08/2015
- Surveillance Completion History, "D2/3 Com Insp / De-Water Outside Manhold (SBO-MH#1)," 07/26/2012 - 03/31/2016
- Drawing 12E-1215, Electrical Duct Run - Sections & Details H.P.C.I. Building to Main Control Room Dresden Nuclear Power Station Unit 1, Revision E
- Drawing: 12E-1216, Electrical Duct Run Plan HPCI Building to Unit 2 Turbine Building, Revision F

- Drawing: 12E-1217, Electrical Duct Run – Sections & Details H.P.C.I. Building to Main Control Room Dresden Nuclear Power Station Unit 1, Revision E
- Drawing: 12E-1218, Electrical Duct Run – Sections & Details H.P.C.I. Building to Main Control Room Dresden Nuclear Power Station Unit 1, Revision F

1R11 Licensed Operator Requalification Program

- IR 2679813, “NRC Resident Question Regarding Flex/SBO Actions”
- Nuclear Accident Reporting System (NARS) Form, Utility Messages 1 through 4 (DRILL)
- DOA 0010-13, “Security Threat,” Revision 05
- DEOP 0200-01, “Primary Containment Control,” Revision 11
- DEOP 0400-01, “RPV Flooding,” Revision 08
- DGA-03, “Loss of 250 VDC Battery Chargers With Simultaneous Loss of Auxiliary Electrical Power,” Revision 14
- DGA-22, “Station Blackout,” Revision 00
- FSG-01, “Extended Loss of AC Power / Loss of Ultimate Heat Sink Flowchart,” Revision 00
- DOP 1600-07, “Primary Containment Deinerting,” Revision 30
- DGP 03-01, “Power Changes,” Revision 129
- DGP 03-04, “Control Rod Movements,” Revision 72
- IR 2672481, “2A DWEDS Discharge Piping”
- IR 2672480, “2A DWEDS Pump Required Replacement”
- IR 2672479, “Failed Coupling Found on 2B DWEDS Pump”
- IR 2672445, “U2 SWC TCV Issues”
- IR 2672325, “2A MSIV RPS Relay Failed to Pick Up During Surveillance”
- IR 2672313, “1C MSIV Fails to Drop Out Relay During 10% Testing”
- Operator Logs for the Period of: 05/13/2016 11:15 Through 05/21/2016 21:10
- Unit 2 DWEDS Decision Tree

1R11 Licensed Operator Requalification Program

- Job Performance Measure (JPM) P2-0300-01; Respond to a CRD Flow Control Valve Failure; Revision 16; January 2016
- JPM P2-1300-02; Start Isolation Condenser Makeup Pump Locally (AP); Revision 07; February 2016
- JPM P3-0300-01; Respond to a CRD Flow Control Valve Failure; Revision 00; January 2016
- JPM S-0500-08; Perform Turbine Control Valve Fast Closure (load reject) Scram Circuit Functional Test and Respond to Partial Half Scram; Revision 09; February 2016
- JPM S-1500-05; Shutdown Torus Cooling With No Injection Signal Present; Revision 17; February 2016
- JPM S-7500-02; Shutdown Standby Gas Treatment Train; Revision 13; March 2016
- JPM S-EP-45; Emergency Plan Classification; Revision 03; February 2016
- JPM P0-0300-02; Line Up CRD Crosstie for Alternate Water Injection; Revision 11; February 2016
- JPM P0-6600-09; Swapping 2/3 EDG Cooling Water Flow (AP); Revision 00; March 2016
- JPM S-0600-12; Recovery of Locked-Up FWRV / Placing FWRV in Auto; Revision 07; February 2016
- JPM S-1500-10; Perform LPCI System Operability Test with Torus Available (AP); Revision 04; February 2016
- JPM S-7500-01; Start Standby Gas Treatment; Revision 06; February 2016
- JPM S-RD-14; Reportability Determination; Revision 00; March 2016
- OPEX-AE; Simulator Exercise Guide; Revision 09; February 2016

- OPEX–C; Simulator Exercise Guide; Revision 12; January 2016
- OPEX–R; Simulator Exercise Guide; Revision 11; January 2016
- OPEX–S; Simulator Exercise Guide; Revision 12; January 2016
- 2015 LORT Requal Exam Status Summary; May 16 2016
- 2015 Written Exam Questions; Various
- Crew and Individual Simulator Evaluation Records; Various
- Remedial Training Records; Various
- Simulator Steady State Test Records; Various
- Simulator Transient Test Records; Various
- Simulator Core Test Records; Various
- Simulator Post Event Test Records; Various
- Simulator Scenario Based Testing Records; Various
- Simulator Review Board minutes; Various
- OP–AA–102–106, Operator Response Time Program; Revision 03
- OP–DR–102–106, Operator Response Time Program at Dresden; Revision 06
- NF–DR–770–1000, Calculation of Core Thermal Power; Revision 05
- OP–AA–105–102, Reactivation of License Log; December 23, 2015
- OP–AA–105–101, Administrative Process for NRC License and Medical Requirements, Revision 19
- OP–AA–101–111–1001, Operations Standards and Expectation; Revision 17
- TQ–AA–150–F25, LORT Annual Exam Status Report; May 27, 2016*
- TQ–AA–155, Conduct of Simulator Training and Evaluation; Revision 06
- TQ–AA–306, Simulator Management; Revision 08
- PI–AA–125–1003, ACE for 2015 LORT Results (CR 025234462); August 4, 2015
- Condition Report 02621817, Training Simulator I/O Failure; February 4, 2016
- Condition Report 02618859, FASA Identified Procedural Compliance Deficiency; January 27, 2016
- Condition Report 02641628, Exam Security and Admin. Violation; March 17, 2016
- Condition Report 02574432, TRNG ID: Potential Safety Issue in Simulator; October 21, 2015
- Condition Report 02519054, TRNG ID: Simulator Issue Delays Training by 1 Hour; June 24, 2015
- Condition Report 02459370, TRNG - Simulator Crew Clock Reset; February 26, 2015
- Condition Report 01685500, NOS ID: Incomplete Training Simulator Operability Tests; July 25, 2014
- Condition Report 02544936, LORT OBE Delayed Due to Simulator Program Issue; August 21, 2015
- Condition Report 02442413, TRNG: Simulator Issue Lead to Schedule Change, January 26, 2015
- Condition Report 02518457, Simulator Computer Loss Due to Power Loss and Storm; June 23, 2015
- Condition Report 01657206, TRNG - CRD Flow Controller Failure in the Simulator; May 7, 2014
- Condition Report 01657207, TRNG - CRD Flow Controller Failure in the Simulator; May 7, 2014
- Condition Report 02531168, TRNG ID: Simulator Performance Affects DEP Scenario; July 22, 2015
- Condition Report 02441468, NOS ID: CPA 15–01 Simulator Ex Guide Did Not Meet Checklist; January 23, 2015
- Condition Report 02552713, TRNG ID: Simulator ASD Performance Requires Adjustment; September 9, 2015
- Condition Report 01692252, TRNG - Simulator Computer Malfunction; August 13, 2014

- Simulator Work Request 15295, EC397318 Repl Recorder 2–1801–6, U2 AREA RAD MONITORS; April 9, 2014
- Simulator Work Request 15316, Turbine Model; April 22, 2014
- Simulator Work Request 15318, CRD-FCV Failure vs. CRD Hi Temp Alarms; April 22, 2014
- Simulator Work Request 15324, FWLC Manual Bypass Function Not Functioning for Main Feed Reg Valves; April 25, 2014
- Simulator Work Request 15332, Upgrade Turbine and FW Xtreme Models to Current Versions. Implement QC Gland Seal Model; May 1, 2014
- Simulator Work Request 15354, EC 397839 Turbine Bearing Temp Hi Alarm Setpoints; May 13, 2014
- Simulator Work Request 15361, HPCI Fails to Develop Adequate Discharge Pressure and Flow; May 14, 2014
- Simulator Work Request 15413, Recirc Local Control Override Doesn't Work; June 17, 2014
- Simulator Work Request 15424, Revise the Scaling of the 2A and 2B ASD Output Voltage Mod Bus Registers; June 26, 2014
- Simulator Work Request 15506, Bus 28/29 Trip When Bus 28 is Re-energized from Bus 29; August 7, 2014
- Simulator Work Request 15542, EC 399167 LPCI LOOP I HDR INJ TO RECIRC FLOW INDICATOR 2–1561–A Replacement; September 10, 2014
- Simulator Work Request 15837, EC399623/264 NARS Emergency Response Phone System Replacement; December 18, 2014
- Simulator Work Request 16000, Bus 27 OC Causing Scram; March 3, 2015
- Simulator Work Request 16006, Update Modeling of ASD on Power Swap; March 5, 2015
- Simulator Work Request 16105, Operation with HPCI Exhaust Uncovered; April 28, 2015
- Simulator Work Request 16221, Recirc Winding Temp and Alarm Tiles; June 12, 2015
- Simulator Work Request 16315, CRD Hi Temp Alarms; August 4, 2015
- Simulator Work Request 16482, Core Update; October 29, 2015
- Simulator Work Request 16499, EC403587 Update R*time HCTL; November 9, 2015
- Simulator Work Request 16628, Loss of ESS Bus Impact on Recirc/ASD Instruments; January 27, 2016 Simulator Work Request 16666, Isolation Condenser Response; February 11, 2016
- Simulator Work Request 16680, Bus 26 Closing on Bus 25 When CS in PTL; February 15, 2016
- Simulator Work Request 16764, On a Loss of MCC 25–2 Lights for the 2A Gland Exhauster Remains Powered; March 25, 2016
- Simulator Work Request 16771, ASD RNI Display Modeling Incomplete; March 29, 2016
- Simulator Work Request 16791, Full Core Display for CRD C–5: Red vs. Amber for Intermediate Position; April 5, 2016
- Simulator Work Request 15453, Bus 28 – Bus 29 Cross-tie Fault; July 17, 2014
- Simulator Work Request 16281, Issues with Drywell Rad Monitoring; July 16, 2015
- Simulator Work Request 15145, Single Loop Core Flow Does Not Correlate with Indicated Core Plate D/P; January 22, 2014

1R12 Maintenance Effectiveness

- WO 01870485–01, “EWP Request 3–6641-526 Connect Type Change Per ECR 419338”
- WO 01870484–01, “Install compression Fitting at PS 2–6641–525, –526, and –527 per ECR 419338”
- WO 01829016–01, “Visual Inspection of Wire Lug Crimps”
- WO 01826416–01, “Replace PS 2/3–6641–526”
- WO 01259044, “Replace 2/3 EDG Starting Air Filter HSGS & Outlet Piping”

- IR 2665872, "OIO Benchmark of MRule IR Reviews"
- IR 2665609, "PM Periodically Change Not IAW Procedure Requirement"
- IR 2664688, "NDE Indication of New 2/3 DG Starting Air Filter Housing"
- IR 2631866, "NOS ID: Quality Parts Staging Issues in Maintenance"
- IR 2631254, "NOS ID: Non-Conforming parts Staging and Equip. ID Tag Use"
- IR 2624031, "U2 EDG Fuel Pump Flex Makes Contact With Piping"
- Prompt Investigation, "U2 Unexpected Alarm: 2A Starting Air Filter (2-4600-E)"
- DIS 6600-08, "Unit 3 Diesel Generator Pressure Switches and Pressure Indicators Calibration," Revision 02
- DIS 6600-07, "Unit 2/3 Diesel Generator Pressure Switches and Pressure Indicators Calibration," Revision 03
- DIS 6600-03, "Unit 2 Diesel Generator Pressure Switches and Pressure Indicators Calibration," Revision 16
- ICES 322789, "Emergency Diesel Generator Unavailable Due to Failed Speed Board Component," dated May 20, 2016
- ICES 322757, "Emergency Diesel Generator Declared Inoperable Due to Failure of Startup Air Filter Gasket," dated May 20, 2016
- Focused Area Self-Assessment (FASA) 2601715, "Emergency Diesel Reliability," dated March 9, 2016
- Monthly Monitoring Reliability for May 2016 for Emergency Diesel Generators
- Monthly Monitoring Action Plan for May 2016 for Emergency Diesel Generators
- Maintenance Rule Expert Panel Meeting Minutes March 2, 2016
- Maintenance Rule Expert Panel Meeting Minutes October 19, 2015
- Maintenance Rule Expert Panel Meeting Minutes August 12, 2015
- Apparent Cause Investigation Report (ACE) for CR# 2633687, "NOS Maintenance Audit"
- ACE for CR# 2479781-02, "Apparent Cause of 2/3-6600-IR2 Failure to Function"
- ACE for CR# 2598614, "SPC Closure for U2 EDG Fuel Leak During Monthly Run"
- Design Change Package (DCP) 404776, "DG Starting Air Piping Stainless Steel Pipe Replacement," Revision 000
- EC 404776, "DG Starting Air Piping Stainless Tell Pipe Replacement," Revision 0
- Maintenance Parts List, 2/3 EDG Work Window
- Pipe Support Installation and Inspection NSWP-M-04, Revision 2 – Exhibit B, "Pipe Support Installation Checklist Support Steel and Components," for WO 1259044-01
- MA-MW-796-101, "ASME Weld Data Record," for WO 01259044-01
- Failure Classification Form, System 66, for IR 02502695
- Failure Classification Form, System 66, for IR 02479188
- MA-AA-716-001, "Quality Material/Components Control and Identification/Segregation of Non-Conforming Items," Revision 8
- Drawing Velan® Bolted bonnet Globe Valve, 1W-2074B-13MY-1C, Revision D
- Drawing: M-478, Diagram of Diesel Generator lube Oil Piping, Revision I
- Drawing: M-344, Diesel Generator Strat-up Air Piping, Revision C
- Drawing: 12E-6573B, Wiring Diagram Secondary Containment Penetrations Junction Boxes 2RB-163 & 2TB-202, Revision T
- Drawing: 12E-2741, Wiring Diagram M.C.B. Panel 902-8 Terminal Blocks "G" Thru "K" Part 6, Revision AZ
- Drawing: 12E-3757C, Wiring Diagram Panel 903-32 Part 2, Revision BE
- IR 2598122, "U3 Core Thermal Power on Venturi Less Than Expected"
- IR 2597592, "D3M19 LL: 3C Reactor Feed Pump Extent of Condition Review"
- IR 2597248, "3C RFP Trip on Low Oil Pressure"
- IR 2596978, "FME: Check Valve has Internal Damage"
- IR 2596459, "3C RFP Rotating Backwards, Seal Leak"

- IR 2593365, "3B RFP Discharge Valve Intermediate Position"
- IR 2584403, "Need an Emergent Scaffold to Support Feed Pump Replacement"
- IR 2583695, "2A RFP Discharge MOV Breaker Tripping"
- IR 2547910, "NRC 2Q2015 Report Identified Green NCV for U2 FWLC"
- IR 2547450, "2A RFP Casing Vent Valve Leaking By"
- IR 2451621, "System Health CRE Level 4 Unit 2 Feed Water"
- Maintenance Rule Expert Panel Meeting Minutes for October 9, 2015.
- MRule Panel for Function Z33-1, dated July 24, 2013
- Maintenance Rule Expert Panel Agenda Item for Function Z13-3, dated October 10, 2006
- Maintenance Rule System Basis Document for Dresden Unit 2, Function 33-1 and 33-5, "Condensate/Condensate Booster"
- Maintenance Rule System Basis Document for Dresden Unit 2, Functions 32-1, 32-2, 32-3, and 32-6. "Feedwater"
- Maintenance Rule System Basis Document for Dresden Unit 3, Functions 32-1, 32-2, 32-3, and 32-6. "Feedwater"

1R13 Maintenance Risk Assessments and Emergent Work Control

- WO 01913786, "PMT 3-7400-Y-07-SV Instrument Air Header"
- Prompt Investigation for U3 Stator Water Cooling: Small Instrument Air Line Leak for IR 2641458
- IR 2652797, "WR Required to Fix Sprinkler Head"
- DIP 5600-39, "EHC Forced Points," Revision 04
- EC Evaluation 405328, "MR90 to Disable Turbine Runback Functions for Stator Cooling System Air Supply Repairs"
- HU-AA-1212, "Technical Task Pre-Job Brief Form," Revision 6 for EC 405328, dated 04/07/2016
- Drawing: 253LN001-001, Stator Cooling Water System, Revision 07
- Drawing: 2E-3367, Schematic Diagram Hydrogen and Stator Cooling, Revision AC
- Drawing: 12E-3367A, Schematic Diagram Hydrogen and Stator Cooling, Revision J
- Drawing: M-367, Diagram of Instrument Air Piping Turbine Building, Revision AH
- Drawing: M-355A, P & ID Stator Cooling System, Revision H
- IR 2654843, "NRC Identified 2/3 EDG Damper N2 Press Low"
- IR 2653656, "Packing Leak on 3-1501-31B"
- IR 2653534, "3A CCSW Pump Discharge Valve Could Not Be Closed"
- IR 2653533, "Packing Leak on 3-1501-31A"
- OP-AA-108-117, "Protected Equipment Program," Revision 4
- OP-AA-201-012-1001, "Operations On-Line Risk Management," Revision 1
- OP-DR-201-012-1001, "Dresden On-Line Fire Risk Management," Revision 04
- DSSP 0010-01, "Determining Safe Shutdown Paths for Extensive Plant Damage," Revision 12
- Protected Equipment List for Unit 3 Torus Cooling Div II
- Protected Equipment List for Unit 3 Torus Spray Div II
- Protected Equipment List for Unit 3 HPCI
- Protected Equipment List for Unit 3 DW Spray Div II
- Protected Equipment List for Unit 3 Div II LPCI
- Protected Equipment List for Unit 3 Div 2 Core Spray
- Protected Equipment List for Unit 3 ADS
- Protected Equipment List for Unit 3 Div 1 Core Spray
- Protected Equipment List for Unit 3 Div II CCSW
- Fire Protection Detection System Status Report, Dated April 12, 2016

- Prompt Investigation for IR 02663921, "2/3 EDG Surveillance Not Completed, EPN: 2/3-6601 (ASSY) Standby Diesel Generator"
- WO 01920646, "2/3 EDG Surveillance Not Completed"
- WO 01913684, "D2/3 1M TS Unit Diesel Generator Operability"
- WO 01820869-01, "Replace 2/3 EDG VSR Relay 2/3-6601-VSR"
- WO 01820869-02, "Bench Test Replacement Relay 2/3 EDG VSR"
- WO 01820869-03, "PMT 2/3 EDG VSR Relay"
- WO 01820868-01, "Replace 3 EDG VSR Relay 3-6601-VSR"
- WO 01820868-02, "Bench Test Replacement 3 EDG VSR Relay"
- WO 01820868-03, "PMT 3 EDG VSR Relay"
- IR 2664634, "WR Requested for Common Mode Determination of D3 EDG"
- IR 2664629, "WR Requested to Eliminate Common Mode Failure on D2 EDG"
- IR 2664346, "2/3 EDG Strip Chart Failure During PMT"
- IR 2664338, "Recorder Failed to Trigger During Fast Start of the 2/3 EDG"
- IR 2663921, "2/3 EDG Surveillance Not Completed"
- IR 2457785, "Request One Time Replacement of 3 EDG VSR Relay"
- IR 2457784, "Request One Time Replacement of 2/3 EDG VSR Relay"
- DOS 6600-01, "Diesel Generator Surveillance Tests," Revision 129
- Drawing: 12E-2337, Relay, Metering & Excitation Diagram Standby Diesel Generator 2/3, Revision AD
- Drawing: 12E-2351B, Schematic Diagram Diesel Generator 2/3 Auxiliaries & Start Relays, Revision BE
- Drawing: 12E-2351A, Schematic Diagram Standby Diesel Generator 2/3 Engine Control and Generator Excitation, Revision AQ
- WO 1924673, "NDE HPCI Line 2-2323-1-LX to Support Extent of Condition"
- WO Task 1924673-01, "Repair U2 HPCI Piping Leak Upstream of the 2-2301-29 Valve"
- WO Task 1924673-13, "Perform NDE on 5 Locations of Line 2-2323-1-LX as Identified"
- WO 1543373, "MM Steam Leak Found on HPCI ASME Code Class Piping"
- IR 2670506, "Perform Extent of Condition Inspection of the U3 HPCI Piping"
- IR 2670087, "Steam Leak on HPCI Piping Upstream of the 2-2301-29 AOV"
- ECR 423680, "Identified UT Pipe Thickness Readings on HPCI Drain Pot Line 2-2323-1" Measuring as low as 0.152" Which is Less than 87.5% (0.157") of the Nominal Wall Thickness of 0.179" (Schedule 80)"
- OP-AA-108-115, "Operability Determinations (CM-1)," Revision 17
- Prompt Investigation for IR 2670087
- Operations Log for the Time Period of 05/22/2012 11:50:00
- Proceedings of PVP2008-61639, "Recent Applications of ASME Code Case N-513 for Evaluation of Nonplanar Leaking Flaws," July 27 21, 2008
- ASME Case N-513-4, "Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping, Section XI, Division 1," dated May 7, 2014
- Drawing: M-4455 sht.1, HPCI Line Replacement (3-2323-1"), Revision C
- Drawing: M-51, Diagram of High Pressure Coolant Injection Piping, Revision CS
- IR 2498875, "U3 HPCI AOP Failure Mechanism for SPC 2474065-08"
- IR 2474065, "Unit 3 HPCI Aux Oil Pump Motor Shorted"
- Protected Equipment List for Unit 3 Isolation Condenser
- Protected Equipment List for Unit 3 ADS
- Protected Equipment List for Unit 3 Div 1 Core Spray
- Protected Equipment List for Unit 3 Div 1 LPCI
- Protected Equipment List for Unit 3 Div 2 Core Spray
- Protected Equipment List for Unit 3 Div II LPCI

1R15 Operability Determinations and Functional Assessments

- IR 2664303, "Condenser Low Vac Press Switch Historic Operability Review"
- IR 2648083, "PSL Found Out of Tolerance (Tech Spec Violation)"
- IR 2648080, "PSL Found Out of Tolerance (Tech Spec Violation)"
- IR 2648078, "PSL Found Out of Tolerance (Non Tech Spec)"
- IR 2648076, "PSL Found Out of Tolerance (Non Tech Spec)"
- IR 2564730, "D3 Condenser Low Vacuum Leak on PS 3-0503-D"
- IR 1496140, "PS 3-0503-D For Cond Low Vac OOT During DIS 0500-33"
- IR 1496135, "D3 Condenser Low Vacuum Press SW OOT During DIS 0500-33"
- IR 1496107, "D3 Condenser Low Vacuum Switch OOT During DIS 0500-33"
- IR 1013926, "Instrument 3-503-D OOT"
- IR 0903395, "Found 3-503C OOT and Tech. Spec."
- WO 01892002-01, "EWP IM D3 3M TS Condenser Low Vacuum Scram Pree Switch Cal"
- 50.59 Screening No. 2008-016, EC 364295 & EC 364296, "Lower Condenser Low Vacuum Scram Setpoint - U2 & U3," Revision 000"
- EC 364296, Design Consideration Summary, "Lower Condenser Low Vacuum Scram Setpoint - U3," Revision 000
- Work Planning Instructions for EC# 364296, "Lower Condenser Low Vacuum Scram Setpoint - U3," Revision 000
- Design Analysis Revision, Analysis No. NED-I-EIC-0087, "Low Condenser Vacuum Scram Setpoint Error Analysis," Revision 004
- DIS 0500-33, "Unit 3 Condenser Low Vacuum Pressure Switches Channel Calibration and Channel Functional Test," Revision 04
- Drawing: M-346, Diagram of Extraction Steam Piping, Revision AF
- Drawing: 12E-3464, Sheet 1 & 2, Schematic Diagram Reactor Protection System Channel "A" Trip Aux. Relays, Revision AI
- Drawing: 12E-3465, Sheet 1 & 2, Schematic Diagram Reactor Protection System Channel "A" Scram & Auxiliary Trip Relays, Revision AP
- Drawing: 12E-3466, sheet 1 & 2, Schematic Diagram Reactor Protection System Channel "B" Scram & Auxiliary Trip Relays, Revision AS
- IR 2654262, "Historical Operability of 2-2301-14 Contactor Deficiency"
- IR 2644018, "2-2301-14 250V Contactor Deficiency"
- IR 1192300, "Trend of DC Breaker ARC Chute Issues"
- IR 1191488, "DC Arc Chute"
- IR 1190675, "DR ARC Chutes"
- IR 1190201, "Unit Three DC Arc Chutes 3-83250-3BJ1"
- IR 1190180, "Unit Three DC Arc Chutes 3-83250-3AAA1"
- IR 1191131-02, "ACIT to Design Engineering (Strasser) to Review Issue with Chipping Rrc Chutes Identified in IRs 1190675, 1191131, 1191307, & 1191488. Initiate Actions as Warranted"
- IR 1061379, "2-2301-14: 250V Contactor Deficiency Historical Operability"
- IR 1043366, "2-2301-14 250V Contactor Deficiency"
- WO 01320828, "EM D2 6Y PM 250VDC Bkr 2301-14 Min Flow Bypass to Torus RV"
- WO 00418693-01, "Perform PM Inspection on 250VDC MCC 2B, Cubicle L2"
- WO 00418693-02, "Open/Close Breaker in Support of MCC Cubicle Inspection"
- WO 00418693-03, "Perform PMT After EM's Complete Cubicle Inspection"
- DES 8300-01, "Inspection and Maintenance of DC-Operated Cutler-Hammer Reversing and Field Contactors Model 912 and 952 and Model ME," Revision 14
- EC 380579, "Historical Functionality Review for 250VDC C-H Contactors with Damaged Arc Boxes," Revision 000

- Drawing: M-51, Diagram of High Pressure Coolant Injection Piping, Revision CS
- EC 405370, "Evaluation of the 2A RR Motor Seismic Lug On Drawing M-1135, Sht. 18 For Bending at 12 Degree With Respect to Motor Casing"
- WO 01020561-56, "Re-align 2A Recirc Motor Snubber Lug Attachment for 2-0202-04-A Snubber in Accordance with EC 403044"
- WO 01020561-56 Weld Map 1
- IR 2655676, "Documentation of 2A RR Motor Lug Angle"
- CC-AA-309-1001, "Three-pass Review Instructions and Checklist," Revision 8
- IR 2606037, "2-4807-500 Leaks By"
- IR 2606036, "2-4399-72 Leaks By"
- IR 2606035, "2-4399-74 Leaks By"
- IR 2605698, "U2 ISO Condenser East End Bell Leak"
- IR 2602728, "U2 Isolation Condenser Level Increasing"
- IR 2591555, "IC Level is High With no MCR Alarm"
- IR 2590545, "ISO Cond Level (LI 2-1340-2) OOT High"
- OP-AA-108-015, "Equipment Deficiency Identification and Documentation," Revision 11
- OP-AA-102-103, "Operator Work-Around Program CM-1," Revision 4
- Operator Workaround Board (OWAB) Meeting Minutes, First Quarter 2016
- OWAB Meeting Minutes, Fourth Quarter 2015
- OWAB Meeting Minutes, Third Quarter 2015
- OWAB Meeting Minutes, Second Quarter 2015
- List of Workarounds and Challenges for U2 Iso Condenser dated 06/09/2016
- System Health Report
- WO 00975433-03, "D3 4RFL PM Replace 'B1' Channel RPS 108 Scram Contactors"
- IR 2572236, "ERVR - RPS Contacts Latent Failure Can Energize B/U Scram Valve"
- IR 2409956, "Unplanned Depressurization of the Scram Air Header"
- IR 2408956, "DIS 0500-24 Found Slow Scram Contactor 3-0590-108D"
- Apparent Cause Investigation Report for CR 02409956, "Unplanned Depressurization of the Scram Air Header"
- Engineering Change 399656, "MR-90 Installation to Support Replacement of Scram Contactors"
- DOS 0500-01, "Manual Scram Circuit Sensor Test," Revision 21
- DOS 0500-25, "RPS Channels A1, A2, B1, and B2 Automatic Scram Contactor Test," Revision 14
- Reactor Protection System (RPS) Contact Parts List
- ATI# 02572236-03, "IR 2572236 was Reviewed for Vermont Yankee Scram OE-12134"
- GE Instructions -5190A, "NEMA Size 00,0, & 1 - CR305, CR306, CR309 Magnetic Contactors, Starter, & Reversers," Revision 7/88
- Surveillance Completion History, "D2 4RFL PM Replace 'A1' Channel RPS 108 Scram Contactors," 02/12/1996 Through 11/08/2009
- Surveillance Completion History, "D2 4RFL PM Replace 'A2' Channel RPS 108 Scram Contactors," 10/17/2003 Through 11/17/2011
- Drawing: 12E-2465, "Schematic Diagram Reactor Protection System Channel "A" Scram & Auxiliary Trip Relays," Revisions AI and AL
- Drawing: 12E-2467, "Schematic Diagram Reactor Protection System Scram Valve Solenoids & Miscellaneous Auxiliary Relays," Revision AN

1R19 Post-Maintenance Testing

- WO 1470347-02, "IMD Tune FIC 2/3-7541-28A for Optimum Performance"
- IR 2657662, "AOV 2/3-7541-28A Has Loose Feedback ARM/Position Indicator"

- IR 0672572, "SBGT FICs Need to be Tuned Following Overhaul of Valve/ACT"
- DOS 7500-02, "SBGT System Surveillance and IST Test," Revision 53
- DTS 7500-13, "SBGT System Visual Inspection," Revision 04
- WO 01864116, "2/3-3701 2/3 BRCC Pump Oiler Leaking"
- WO 01536543, "D3 4Y PM 4KV Cub Insp Bus 34-1 CUB 8; 2/3 RBCCW Pmp"
- IR 2659100, "2/3 RBCCW Pump Casing Oil Seal Leak"
- IR 2659074, "Oil Leak From 2/3 RBCCW Pump Inboard Bearing Cover"
- DOP 3700-02, "Reactor Building Closed Cooling Water System Operation," Revision 41
- WO 1918904, "U3 EDG Lower Starting Air Motor Oil Expelled During Start"
- WO 1909218, "D3 1M TS Diesel Fuel Oil Day Tank, Sample Fuel Oil"
- WO 1873814, "D2 San TS Diesel Generator Fast Start Operability Surv."
- WO 1820864, "Request One Time Replacement of 3 EDG ESR Relay"
- WO 1259047, "Work Request Needed for EDG SA Work"
- WO 1186682, "3 RFL PM D/G Governor - Change Oil/Flush/Compensate"
- IR 2591191, "Diesel Cylinders Not Labeled"
- DES 6600-01, "Diesel Generator Governor Oil Change and Compensation Adjustment," Revisions 31 and 32
- DOP 6600-M1, "Unit 3 Standby Diesel Generator Checklist," Revision 27
- DOS 6600-01, "Diesel Generator Surveillance Tests," Revision 129
- DOS 6600-08, "Diesel Generator Cooling Water Pump Quarterly and Comprehensive/Preservice Test For Operational Readiness and In-Service Test (IST) Program," Revision 61
- WO 01882784, "D2/3 SAN TS Diesel Generator Fast Start Operability Surveill"
- WO 01259044-03, "Work Request Needed for EDG SA System"
- IR 2668482, "Leak on 2/3 EDG Air Start DP Isolation Valve Tube Connection"
- Prompt Investigation - Equipment, "U2 Unexpected Alarm: 2A Starting Air Filter (2-4600-E)"
- DIP 6600-01, "Checklist C Unit 2/3 EDG Load Sequence Recorder Connections," Revision 12
- DOS 6600-01, "Diesel Generator Surveillance Tests," Revision 129
- WO 01587954, "8RFL PM Replace Relay 2-1530-282"
- WO 01587951, "8RFL PM Replace Relay 2-1530-276"
- DIS 1500-32, "Division I & II Low Pressure Coolant Injection ECCS LOOP Selection Circuitry Logic System Functional Test," Revision 09
- Drawing: 203LN001-001, Low Pressure Coolant Injection (LPCI) System and Instrumentation, Revision 01
- Drawing: 203LN001-002, LPCI Initiation Logic, Revision 01
- Drawing: 203LN00-003, LPCI LOOP Select Logic, Revision 01
- Schematic Diagram 12E2438, LPCI/Containment Cooling System 2, Revision BE
- Schematic Diagram 12E-2438A, LPCI/Containment Cooling System 2, Revision AN
- Schematic Diagram 12E2438,7A, LPCI/Containment Cooling System 1, Revision AL
- WO 1450449, "D2/3 6Y PM CR HVAC HX Clean & Eddy Current Test"
- DOP 5750-05, "Control Room Ventilation and Air Conditioning System," Revision 66

1R22 Surveillance Testing

- WO 01893370, "D3 QTR TS CS [Core Spray] PMP Test With Torus Avail for IST Data Surv"
- DOS 1400-05, "Core Spray System Pump Operability and Quarterly IST Test with Torus Available," Revision 49
- WO 01889454, "EWP D2 Qtr TS ATWS Rpt/ARI MTU/STU Channel Functional Test"
- DIS 0263-05, "Unit 2 ATWS RPT/ARI and ECCS Level MTU and STU Channel Functional Test," Revision 22

- Drawing: 12E-6582A, Schematic Diagram ATWS, ECCS, HPCI Turbine and Feedwater Trip Systems, Div. I & Div. II Part 1, Revision G
- Drawing: 12E-6582B, Schematic Diagram ATWS, ECCS, Turbine and Feedwater Trip Systems, Div. I & Div. II Part 2, Revision G
- Drawing: 12E-6582D, Schematic Diagram ATWS, ECCS, Turbine and Feedwater Trip Systems, Div. I Part 4, Revision L
- Drawing: 12E-6582E, Schematic Diagram ATWS, ECCS, Turbine and Feedwater Trip Systems, Div. II Part 5, Revision J
- Drawing: 12E-6582F, Schematic Diagram ATWS, Recirculation Pump Trip Sys., Div. I & Div. II Part 6, Revision U
- Drawing: 12E-6582G, Schematic Diagram ATWS, ECCS, Turbine and Feedwater Trip Systems, Div. I & Div. II Part 7, Revision H
- Drawing: 12E-6582H, Schematic Diagram ATWS, ECCS, Turbine and Feedwater Trip Systems, Div. I & Div. II Part 8, Revision K
- Drawing: 12E-6583A, Wiring Diagram ATWS, ECCS, Turbine & Feedwater Trip Systems, Division I, Part 1, Revision AF
- Drawing: 12E-6584A, Wiring Diagram ATWS, ECCS, Turbine & Feedwater Trip Systems, Division II, Part 1, Revision AE
- Drawing: 12E-6585, Wiring Diagram ATWS, ECCS, Turbine & Feedwater Trip Systems, Miscellaneous Devices, Division I and Division II, Revision F
- Drawing: 12E-6585A, Wiring Diagram Misc. Junction Boxes STWA Recirc Pump Trip System, Division I and Division II, Revision A
- Exelon Training Course DRE212LN002, "Anticipated Transient Without Scram-Recirc Pump Trip/Alternate Rod Insertion System (ATWS RTP/ARI), dated June 12, 2005
- DIS 0263-23, "Unit 2 RPS High Steam Dome Pressure Scram Channel Calibration and EQ Maintenance Inspection," Revision 10
- DIS 0263-24, "Unit 2 RPS High Steam Dome Pressure Scram Functional Test," Revision 09
- IR 2659221, "DIS 0263-23 Requires Revision"
- WO 01884181, "D2 SA PM Verification of 2-1301-3 Stroke Length"
- WO 01730845, "RX Hi Steam Dome Pressure Scram Channel Calibration"
- Engineering Change (EC) 372143, "Isolation Condenser Heat Removal Test History," Revision 00
- EC 372073, "Unit 2 Isolation Condenser Valve 2-1301-3 Opening Setting Adjustment," Revision 003
- Operating Experience (OE) 29647, "Motor Operated Valve Over Thrust Event During Diagnostic Testing Due to Poor Document Preparation (Dresden)," Dated September 22, 2009
- IR 2668347, "NRC SRI Question With Precondition on 2-1301-3 Valve"
- IR 2668322, "MOV 2-1301-3 As-Found Stroke Length High"
- IR 2668194, "2-1301-10 Valve Failed to Close"
- IR 2668184, "Job Delay Resulted in Unnecessary Radiation Exposure"
- IR 2504248, "MOV 2-1301-3 Test Results"
- IR 1854476, "MOV 2-1301-3 Stroke Length Found Longer than Expected"
- MA-AA-723-300, "Diagnostic Testing of Motor Operated Valves," Revision 10
- MA-AA-723-300-1005, "Review and Evaluation of Motor Operated Valve Test Data," Revision 2
- Drawing: 12E-2502, Schematic Diagram Primary Cont. Isolation System Switch Development, Reset Circuit, Tip. Isol., Recirc. Loop Intlk., Sh. 2, Revision AD
- DOS 1300-03, "2/3A (B) Isolation Condenser Makeup Pump Quarterly Operability," Revision 22
- DOP 1300-09, "Isolation Condenser Makeup Pump Local Operation," Revision 07
- WO 01916057, "D2/3 Qtr Com 'B' ISO Cond Make-Up Pump Operability"

- IR 2611318, "Vendor Suggestion for DOP 1300-09 and DOS 1300-03"

1EP6 Drill Evaluation

- Player Brief, 1Q16 Full Performance Indicator FAD
- EP-MW-114-1200-F-01, "Nuclear Accident Reporting System (NARS) Form," Revision H
- Dresden Station 2016 Off Year Exercise Full Manual, June 7, 2016
- Radiological Status for Simulator Dresden Unit 2 – Tuesday June 7, 2016 08:52:02
- Emergency Preparedness Risk Significant Planning Standard for TSC
- Nuclear Accident Reporting System (NARS) Form, Messages 1, 2, and 3 for DRILL, Dresden, Unit 2, June 7, 2016

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

- Focus Area Self-Assessment of In-Plant Airborne Radiation, Occupational Dose and PI, dated 03/02/2016
- IR-02666210, "NRC Identified that Eagle Air Compressor Carbon Monoxide Monitor was Out of Service"
- IR-02526540, "Problems Identified during Monthly SCBA Inspection"
- IR-02554055, "SCBA Pack No. 15 Out of Service; Defective Power Module"
- IR-02420679, "New Air Compressor was Purchased for Filling SCBA Cylinders"
- IR-01680039, "SCBA Hose Fitting Failure"
- IR-01669317, "Rad Protection Qualifications and Use of SCBA Minican"
- IR-02636904, "Mask Fit Machine Malfunctioning"
- IR-02623042, "Oncoming NSO Found that the Individual Mask Fit Test was not Updated"
- IR-02416990, "Two Cylinders on the Rack on the Control Room Air are Expired"
- IR-01651718, "Unexpected Unit-3 Carbon Monoxide (CO) Monitor Alarm on Service Air Breathing Air Supply"
- IR-02579525, "Dresden-2 CO Monitor Warning Light Is Up on Breathing Air Monitor"
- IR-02599512, "Dresden-2 Air Compressor for Service Air CO Monitor Off Scale"
- IR-02446486, "Control Room Emergency Breathing Air Cylinders Need Replaced"
- IR-02538683, "Control Room Emergency Breathing Air Bottles Expire"
- IR-02403761, "Quantifit Unit Providing Unclear Results"
- RP-DR-831, "MSA self-Contained Breathing Apparatus Inspection," Revision 9
- RP-DR-827, "Use of Eagle Breathing Air Compressor System," Revision 2

2RS4 Occupational Dose Assessment

- RP-AA-203-1001, Attachment 2, "Sample Primary versus Secondary Discrepancy Investigation Form"
- RP-AA-302, "Determination of Alpha Levels and Monitoring," Revision 7
- Reviewed Dosimeter Error and Open Item Log from 10/01/2015 – 02/01/2016
- NVLAP National Voluntary Laboratory Accreditation Program; Scope of Accreditation to ISO/IEC 17025; 2005 for Landauer Inc.; Effective from 01/01/2016 – 12/31/2016
- IWI-060 AMS4 Calibration Procedure, "Thermo Fisher Scientific," Revision 11
- Dresden Station Alpha Program Summary, Revision 3
- AR-02596219, "Airline Break Causes AMS-4 Alarm on the Refuel Floor"
- AR-02629420, "Elevated Alpha DAC MSIV Air Sample at Drywell Manifold"

4OA1 Performance Indicator Verification

- IR 2676458, "Unreported MSPI Failures"

- IR 2527445, "2/3 Diesel Generator Cooling Water Pump Failure Analysis"
- IR 2504595, "Excavation Samples With Significant Amounts of Diesel Fuel"
- IR 2477786, "FME: 2/3 EDG DGCWP Impeller Nut Detached From Pump Shaft"
- IR 2422316-02, "Preservation Required – U2/3 DGCWP"
- IR 2541257, "SPC- U3 EDG Start Failure"
- MSPI Failure Determination for IR 2573588, "U2 EDG Fuel Leak During Monthly Run"
- MSPI Failure Determination for IR 2541257, "SPC- U3 EDG Start Failure"
- MSPI Failure Determination for IR 2488474, "U2 EDG Fail to Start"
- MSPI Failure Determination for IR 2479188, "2/3-6600-IR2 Failed to Pick Up During Testing"
- MSPI Failure Determination for IR 2388132, "U2 EDG Semi-Annual Start Failure"
- MSPI Failure Determination for IR 1585414, "DOS 6600-05, Unit Div 2 Undervoltage Test (EDG Closure Time)"
- MSPI Aggregate Status Summary for the Months of April 2015 Through March 2016, Units 2 and 3
- Email from Matthew Jursich to Gregory Roach dated June 2, 2016, Subject: "MSPI Counted EDG Failures"
- NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7
- "Reactor Oversight Program MSPI Bases Document, Dresden Nuclear Generating Station," Revision 11
- ER-AA-2008, "Mitigating Systems Performance Index (MSPI) Monitoring and Margin Evaluation," Revision 4
- LS-AA-2200, "Mitigating System Performance Index Data Acquisition & Reporting," Revision 5
- Consolidated Data Entry (CDE) Inputs for the Months of April 2015 to March 2016 for Emergency AC Power and High Pressure Coolant Injection Systems
- CY-AA-130-3010-F-3, "Dose Equivalent Iodine Determination," Revision 3
- Reviewed Dose Equivalent Iodine Determination from January 2015 Through December 2015; Inspector also Reviewed the First Quarter DEI Weekly Results for 2016
- LER 237/2015-005-02, "Unit 2 HPCI Motor Gear Unit Would Not Return to Full Flow During Testing"
- IR 2584267, "Work Delays Encountered During WO 00654428-48"
- IR 2583077, "U2 HPCI Turbine Rotor Notch Block Anomaly Identified"
- IR 2559585, "U2 HPCI MGU [motor gear unit] Possible Failure"
- IR 1599436, "EACE Required for U2 HPCI Control Valve Failure"
- IR 1591416, "Failure of HPCI Turb Stop Valve to Indicate/Open During Test"
- ER-AA-2008, "Attachment 3, MSPI Failure Determination," Revision 4 for IR 2474065
- EACE 2627450, "Failure of the D2 HPCI System to Increase Speed During DOS 2300-03 High Pressure Coolant Injection System Operability and Quarterly IST Verification Test"
- ICES # 321730, "High Pressure Coolant Injection Motor Gear Unit Failed to Return to Full Flow During Testing Due to Limit Switch Failure"

40A2 Identification and Resolution of Problems

- IR 2686439, "WO 1912330-01 Stopped – Numerous Procedure Errors DIS 0500-33"
- IR 2678808, "Trend ID: Safety Culture Binning for First Quarter 2016"
- IR 2676579, "Trend IR – Security Equipment Failures"
- IR 2676485, "FO WO Readiness Data Listed in 5/31/16 POD PKG Incorrect"
- IR 2675223, "IR Closed Without Correcting Cause of Alarm"
- IR 2673322, "Crew Clock Reset for MM20"
- IR 2671500, "WO Instructions Caused Delay in Completion"
- IR 2671496, "WO Delayed Due to Work Instruction Issues"

- IR 2670555, "51–22 Alarm, 2/3 CHBSMT Cable Tray Heat Detection"
- IR 2668822, "Trend IR: Spent Resin Pump OOS – Long Term Effects"
- IR 2667961, "Follow Up to IR 02665124"
- IR 2666116, "DW Temp Increase on Pt 6, 7, and 17"
- IR 2665579, "2/3 Diesel Fire Pump Local Tachometer Not Reading Correctly"
- IR 2665124, "NOS ID: Unsat Inspection Conditions Not Entered Into CAP"
- IR 2665074, "NOS ID: Significance Level 3 Issues Not Classified Correctly"
- IR 2663515, "Lessoned Learned for Scheduled Work"
- IR 2662692, "NRC ID: U3 RFP Fire Zone Issue"
- IR 2658132, "Trend IR – 2B SWP Packing Leakage"
- IR 2656804, "Unexpected Half Scram"
- IR 2655766, "Vulnerability in Field Operator Fundamentals"
- IR 2652502, "Trend ID: Adverse Trend in MPT 3 Cooling Oil Pump Failure"
- IR 2635948, "OPS Fundamental FASA Deficiency Identified"
- IR 2635779, "NRC Identified Missing Fasteners Versus Operations on Rounds"
- IR 2635443, "Bolts Found Beneath U1 Diesel Fire Pump"

40A3 Follow-Up of Events and Notices of Enforcement Discretion

- Apparent Cause Investigation Report for IR 2623885, "Secondary Containment DP Transient – Tech Spec Entry Required"
- ICES 321438, "Reduction in Secondary Containment Differential Pressure Following Trip of Station Heating Boiler"
- IR 2623885, "Secondary Containment DP Transient (TS Entry Req'd)"
- IR 1632706, "DPC 3–5703–15B Found OOT"
- IR 0897567, "DPT 3–5703–15A (RX Bldg Area D/P) Out of Tolerance"
- IR 0327500, "Two Components Found O.O.T. on 4 Yr. HVAC Loop Calibration"
- DOA 5700–01, "Loss of Heating Boilers," Revision 18
- DIP 5700–11, "Reactor Building HVAC Area DP Control Loop," Revision 04
- Drawing: M–529, Diagram of Reactor Building Ventilation, Revision N
- Drawing: M–269, Diagram of Reactor Building Ventilation, Revision K
- Event Notice 52046, "Dresden Unit 3 Declares Alert"
- ICES# 323383, "Alert Declaration Due to Fire in High Pressure Coolant Injection Auxiliary Oil Pump Motor"
- IR 2686167, "Event Notification Made Due to Alert Declaration"
- IR 2474065, "Unit 3 HPCI Aux Oil Pump Motor Shorted"
- Prompt Investigation for IR 02686163 and IR 02686267
- DES 8300–04, "Inspection of DC Motors and Brushes," Revision 18
- Operator Logs for the period of 06/13/2016 16:10 through 06/27/2016 23:02

40A5 Operation of an ISFSI at Operating Plants

- 10 CFR 72.48 Screenings and Evaluations from 2014 through 2016
- 2016 East and East ISFSI Pad Radiological Surveys
- DFP 0800–73, "4-Point Transporter Maintenance and Inspection," Revision 3
- DFP 0800–78, "Vacuum Drying System Operation," Revision 18
- DOA 0800–01, "Spent Fuel Cask Abnormal Conditions," Revision 13
- DRE16–003, "Fuel Selection Package for 2016 Spent Fuel Loading Campaign," Revision 1
- Dresden Nuclear Power Station Units 1, 2, and 3 East ISFSI 10 CFR 72.212 Evaluation Report, Revision 7

- Dresden Nuclear Power Station Units 1, 2, and 3 West ISFSI 10 CFR 72.212 Evaluation Report, Revision 7
- DRS 6021-33, "ISFSI Radiation Survey," Revision 7
- DTP 68, "Holtec MPC Fuel Spacer Matrix," Revision 4
- DTS 0010-08, "Integrity Surveillance for the Independent Spent Fuel Storage Installation," Revision 8
- EC 397528, "HI-STORM Inlet Screen Drawings," Revision 0
- GQP 9.2, "High Temperature Liquid Penetrant Examination and Acceptance Standards for Welds, Base Materials and Cladding (50 -350F)," Revision 9
- GQP 9.6, "Visual Examination of Welds," Revision 15
- H2-MON-002, "Hydrogen Monitoring for Holtec Canisters," Revision 6
- MA-AA-716-021, "Rigging and Lifting Program," Revision 26
- MA-DR-MM-4-58904, "Dry Cask Storage Special Lifting Device Annual Testing," Revision 11
- MSLT-MPC-EXELON-MW, "Helium Mass Spectrometer Leak Test Procedure Multipurpose Canister," Revision 0
- NOSA-DRE-14-11, "Independent Spent Fuel Storage Installation Audit," dated October 29, 2014
- NOSMDA-DR-14-01, "Dry Cask Spent Fuel Storage Readiness Assessment Plan," dated January 16, 2014
- NOSMDA-DR-14-05, "Management Directed Assessment 2014 Dry Cask Storage," dated June 16, 2014
- NOSMDA-DR-15-01, "Dry Cask Spent Fuel Storage Readiness Assessment Plan," dated December 18, 2014
- NOSMDA-DR-15-01, "Dry Cask Spent Fuel Storage Readiness Assessment Report," dated March 4, 2015
- PI-AA-120, "Issue Identification and Screening Process," Revision 5
- PI-AA-126-1005-F-01, Check-in Self-Assessment, "2015 Spent Fuel Loading Campaign (SFLC) Readiness Assessment," Revision 0
- PI-AA-126-1005-F-01, Check-in Self-Assessment, "ISFSI Pre-NRC Inspection / 2016 Spent Fuel Loading Campaign (SFLC) Readiness Assessment," Revision 0
- PI-CNSTR-OP-EXE-H-01, "Closure Welding of Holtec Multi-Purpose Canisters at Exelon Facilities," Revision 13
- Quality Receipt Inspection Package, Receipt No. 209256, Pin, Top, HI-STORM Lifting Bracket, dated March 16, 2015
- Quality Receipt Inspection Package, Receipt No. 211435, Assembly, MPC Lift Cleats; dated October 5, 2015
- Reactor Building Overhead Crane Monthly Inspection Work Order List from January 2014 to February 2016
- Reactor Services Qualification Matrix
- RP-AA-350, Attachment 1, "Sample" Personnel Contamination Data; Log Numbers 161284-161288 and 161316, Revision 15
- RP-DR-300-100, "HI-TRAC Radiation and Contamination Survey," Revision 2
- RP-DR-300-101, "HI-STORM Radiation Survey," Revision 2
- Selected ARs Associated with Dry Cask Storage Activities Generated Between June 2014 and May 2016
- WO 1499552-01, "RBOC 2 Year Megger and Bridge Inspection Surveillance"
- WO 1604353-01, "D2-3 Annual ISFSI 4-Point Transporter Preventative Maintenance Inspection"
- WO 1640227-01, "RBOC Electrical Annual Inspection Surveillance"
- WO 1640227-02, "RBOC Annual Festoon Inspection Surveillance"
- WO 1640886-01, "RBOC Mechanical Annual Inspection Surveillance"

- WO 1658415-01, "D2-3 Annual ISFSI Test of MPC Lift Cleat 2-3-08209-2B"
- WO 1658416-01, "D2-3 Annual ISFSI Test of MPC Lift Cleat 2-3-08209-2A"
- WO 1659778-01, "D2-3 Annual ISFSI Test of HI-TRAC Trunnions"
- WO 1681409-01, "D2-3 Annual ISFSI Test of HI-STORM Lift Bracket"
- WO 1686441, "D2-3 Annual ISFSI Test of U2-3 RB 125 Ton Lift Yoke"
- WO 1713553-01, "RBOC Electrical Annual Inspection Surveillance"
- WO 1713553-02, "RBOC Annual Festoon Inspection Surveillance"
- WO 1715000-01, "RBOC 2 Year Megger and Bridge Inspection Surveillance"
- WO 1716894-01, "RBOC Mechanical Annual Inspection Surveillance"
- WO 1716926-01, "D2-3 Annual ISFSI 4-Point Transporter Preventative Maintenance Inspection"
- WO 1762138-01, "D2-3 Annual ISFSI Test of HI-TRAC Trunnions"
- WO 1763013-01, "D2-3 Annual ISFSI Test of MPC Lift Cleat 2-3-08209-2B"
- WO 1763014-01, "D2-3 Annual ISFSI Test of MPC Lift Cleat 2-3-08209-2A"
- WO 1777169-01, "D2/3 Annual ISFSI HI-STORM/HI-TRAC Cask Surveillance"
- WO 1794557-01, "2-3 125 Ton Lift Yoke Annual Inspection and NDE"
- WO 1798065-01, "D2-3 Annual ISFSI Test of HI-STORM Lift Bracket"
- WO 1800058-01, "D2-3 Annual ISFSI 4-Point Transporter Preventative Maintenance Inspection"
- WO 1807821-01, "RBOC Electrical Annual Inspection Surveillance"
- WO 1807821-02, "RBOC Annual Festoon Inspection Surveillance"
- WO 1811869-01, "RBOC Mechanical Annual Inspection Surveillance"

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
APRM	Average Power Range Monitor
CAP	Corrective Action Program
CCSW	Containment Cooling Service Water
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CoC	Certificate of Compliance
DWEDS	Drywell Equipment Drain System
DNMS	Division of Nuclear Materials Safety
DWFDS	Drywell Equipment Drain Sump
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FASA	Focus Area Self-Assessment
HI-STAR	Holtec International Storage, Transport and Repository
HI-STORM	Storage Cask
HI-TRAC	Transfer Cask
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation and Air Conditioning
IC	Isolation Condenser
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
ISFSI	Independent Spent Fuel Storage Installation
IST	In-Service Testing
LER	Licensee Event Report
LCO	Limiting Condition for Operations
LLC	Limited Liability Corporation
LOOP	Loss of Offsite Power
LORT	Licensed Operator Requalification Training
LPCI	Low Pressure Coolant Injection
MCID	Materials Control, ISFSI, and Decommissioning
MOV	Motor Operated Valve
MPC	Multi-Purpose Canister
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
OWAs	Operator Workarounds
PARS	Publicly Available Records System
PI	Performance Indicator
PMT	Post-Maintenance Testing
RBCCW	Reactor Building Closed Cooling Water
RPS	Reactor Protection System
SBGT	Standby Gas Treatment

SBO	Station Black Out
SCBA	Self-Contained Breathing Apparatus
TRM	Technical Requirement Manual
TS	Technical Specification
TSO	Transmission System Operator
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

B. Hanson

- 2 -

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Sincerely,

/RA/

Jamnes Cameron, Chief
Branch 4
Division of Reactor Projects

Docket Nos. 50-237; 50-249; 72-037
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