



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

April 30, 2018

EA 18-016

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 05000237/2018001 AND 05000249/2018001 AND
EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Hanson:

On March 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Dresden Nuclear Power Station, Units 2 and 3. On April 9, 2018, the NRC inspectors discussed the results of this inspection with Mr. P. Karaba and other members of your staff. The results of this inspection are documented in the enclosed report.

A violation of the licensee's current site-specific licensing basis for tornado-generated missile protection was identified. Because this violation was identified during the discretion period covered by Enforcement Guidance Memorandum 15-002, "Enforcement Discretion for Tornado Missile Protection Noncompliance" and because the licensee was implementing compensatory measures, the NRC is exercising enforcement discretion by not issuing an enforcement action for the violation and allowing continued reactor operation.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Jamnes Cameron, Chief
Branch 4
Division of Reactor Projects

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

Enclosure:
IR 05000237/2018001; 05000249/2018001

cc: Distribution via ListServ®

Letter to Mr. B. Hanson from J. Cameron dated April 30, 2018

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3—NRC INTEGRATED INSPECTION REPORT 05000237/2018001 AND 05000249/2018001 AND EXERCISE OF ENFORCEMENT DISCRETION

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000237; 05000249

License Nos: DPR-19; DPR-25

Report No: 05000237/2018001; 05000249/2018001

Enterprise Identifier: I-2018-001-0027

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: January 1 through March 31, 2018

Inspectors: D. Szwarc, Acting Senior Resident Inspector
N. Féliz-Adorno, Acting Senior Resident Inspector
J. Mancuso, Reactor Engineer
M. Garza, Emergency Preparedness Inspector
T. Go, Health Physicist
C. Phillips, Project Engineer
L. Smith, Reactor Inspector

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

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting an integrated quarterly inspection at Dresden Nuclear Power Station, Units 2 and 3 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

No findings or violations were identified.

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
	EA 2018-016	Unanalyzed Condition for Tornado Generated Missiles	71111.15	Open
LER	05000249/2017-001-01	Unit 3 Standby Liquid Control System Inoperable Due to a Manufacturing Defect Causing a Piping Leak	71153	Closed

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PLANT STATUS

Unit 2 began the inspection period at rated thermal power. On March 4, 2018, the unit was down powered to 68 percent to perform a turbine control valve repair. The unit was returned to rated thermal power on the same day and remained at or near rated thermal power for the remainder of the inspection period.

Unit 3 began the inspection period at rated thermal power. On March 2, 2018, the unit was down powered to 22 percent to replace power supply for electro-hydraulic control processor. The unit was returned to rated thermal power on the same day and remained at or near rated thermal power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards."

REACTOR SAFETY

71111.01—Adverse Weather Protection

Impending Severe Weather (1 Sample)

The inspectors evaluated readiness for impending adverse weather conditions for heavy rains during the period of February 20 – February 23, 2018.

71111.04—Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 3B low pressure coolant injection (LPCI) with the Unit 3B LPCI pump out-of-service for maintenance on January 5, 2018;
- (2) Unit 2 station blackout diesel generator (SBO DG) line-up while U3 SBO DG 18-year overhaul was performed on January 12, 2018; and
- (3) Unit 2/3 emergency diesel generator (EDG) in support of Unit 2 EDG fuel oil transfer pump outage on February 12, 2018.

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the Unit 3 containment cooling service water system on March 27, 2018.

71111.05AQ—Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Fire Zone 8.2.4, Unit 2 Cable Tunnel East, Elevation 502' on January 9, 2018;
- (2) Fire Zone 11.1.3, Unit 3 HPCI [high pressure coolant injection] Pump Room, Elevation 476' on January 10, 2018;
- (3) Fire Zone 6.2, Unit 2/3 Computer Room & Auxiliary Electrical Room, Elevation 517' on March 15, 2018;
- (4) Fire Zone 8.2.6A, Unit 2 Reactor Feed Pump Vent H2 Seal Area, Elevation 538' on March 23, 2018; and
- (5) Fire Zone 6.1, Unit 3 250V Battery Charger Room, Elevation 538' on March 22, 2018.

71111.06—Flood Protection Measures

Internal Flooding (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the Unit 2 containment cooling service water system during vault door leak testing on March 5, 2018.

71111.07—Heat Sink Performance

Heat Sink (1 Sample)

The inspectors evaluated 2B low pressure coolant injection heat exchanger thermal performance on March 27, 2018.

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated a crew of licensed operators in the plant's simulator during licensed operator requalification training on February 12, 2018.

Operator Performance (2 Samples)

The inspectors observed and evaluated a crew of operators during a Unit 3 downpower on March 2, 2018 and again during a Unit 2 downpower on March 4, 2018.

71111.12—Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Isolation condenser high flow switch out of calibration; and
- (2) Unit 3 containment cooling service water vault leakage.

71111.13—Maintenance Risk Assessments and Emergent Work Control (6 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 2 main power transformer circuit breaker failure on January 19, 2018;
- (2) Unit 2 emergency diesel generator on February 12–16, 2018;
- (3) Yellow risk due to Unit 3 high pressure coolant injection system maintenance on February 26–March 2, 2018;
- (4) Yellow risk due to Unit 2 high pressure coolant injection system maintenance on March 5–9, 2018;
- (5) Unit 3 reactor protection system half-scrum on March 7–9, 2018; and
- (6) 2/3 emergency diesel generator maintenance on March 27, 2018.

71111.15—Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 3 high pressure coolant injection;
- (2) Unit 3 standby liquid control test tank inlet valve;
- (3) Unit 3 low pressure coolant injection motor operator valve 5–1501–18A;
- (4) Unit 3 emergency diesel generator low fuel oil consumption;
- (5) Fire door 38 degraded; and
- (6) Unanalyzed condition for tornado generated missiles.

71111.18—Plant Modifications (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Engineering Change 623479; Procedurally Controlled Temporary Configuration Change Evaluation for Operations Procedure DOS 0500–25 Installation of Jumper to RPS Channel A1, A2, B1, and B2 Automatic SCRAM Contactor Test; Revision 000; and
- (2) Engineering Change 407132; LPCI 3-1501-18A MOV/Evaluate Impact of Change in Motor Specs on Calcs and Protective Devices; Revision 000.

71111.19—Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 3 low pressure coolant injection B pump suction isolation motor operated valve did not fully open following maintenance on January, 3, 2018;
- (2) Unit 3 station blackout PMT following 18–year overhaul on January 11, 2018;
- (3) Unit 2 emergency diesel generator fuel oil transfer pump motor replacement on February 12, 2018;
- (4) Unit 3 high pressure coolant injection system maintenance on February 28, 2018; and
- (5) Unit 2 high pressure coolant injection system PMT following 2–year maintenance on March 19, 2018.

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (4 Samples)

- (1) Unit 2 containment cooling service water pump 2D test and loss of off-site power flow verification, on February 27, 2018;
- (2) 2B standby liquid control quarterly pump test on February 15, 2018;
- (3) 2A isolation condenser make-up pump quarterly surveillance test on February 17, 2018; and
- (4) Unit 3 low pressure coolant injection emergency core cooling system circuitry logic system functional test on March 21, 2018.

In-service (1 Sample)

- (1) Unit 3 high pressure coolant injector fast start, on January 5, 2018

71114.02—Alert and Notification System Testing (1 Sample)

The inspectors evaluated the maintenance and testing of the alert and notification system on February 12–16, 2018.

71114.03—Emergency Response Organization Staffing and Augmentation System (1 Sample)

The inspectors evaluated the readiness of the Emergency Response Organization on February 12–16, 2018.

71114.05—Maintenance of Emergency Preparedness (1 Sample)

The inspectors evaluated the maintenance of the emergency preparedness program on February 12–16, 2018.

71114.06—Drill Evaluation

Emergency Planning Drill (1 Sample)

The inspectors evaluated a drill in the Technical Support Center on January 30, 2018.

Drill/Training Evolution (1 Sample)

The inspectors evaluated operators in the simulator during licensed operator requalification on February 12, 2018.

RADIATION SAFETY

71124.03 In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (1 Sample)

The inspectors evaluated airborne controls and monitoring.

Use of Respiratory Protection Devices (1 Sample)

The inspectors evaluated respiratory protection.

Self-Contained Breathing Apparatus for Emergency Use (1 Sample)

The inspectors evaluated the licensee's self-contained breathing apparatus program.

71124.04 Occupational Dose Assessment

Source Term Characterization (1 Sample)

The inspectors evaluated the licensee's source term characterization.

External Dosimetry (1 Sample)

The inspectors evaluated the licensee's external dosimetry program.

Internal Dosimetry (1 Sample)

The inspectors evaluated the licensee's internal dosimetry program.

Special Dosimetric Situations (1 Sample)

The inspectors evaluated the licensee's performance for special dosimetric situations.

OTHER ACTIVITIES – BASELINE

71151—Performance Indicator Verification (11 Samples)

The inspectors verified licensee performance indicators submittals listed below:

- (1) BI01: RCS Specific Activity 2 Samples (01/01/2017 – 12/31/2017)
- (2) IE01: Unplanned Scrams per 7000 Critical Hours 2 Samples (01/01/2017 – 12/31/2017);
- (3) IE03: Unplanned Power Changes per 7000 Critical Hours 2 Samples (01/01/2017 – 12/31/2017);
- (4) IE04: Unplanned Scrams with Complications (USwC) 2 Samples (01/01/2017 – 12/31/2017);
- (5) EP01: Drill/Exercise Performance 1 Sample (01/01/2017 – 12/31/2017);
- (6) EP02: Emergency Response Organization Drill Participation 1 Sample (01/01/2017 – 12/31/2017); and
- (7) EP03: Alert and Notification System Reliability 1 Sample (01/01/2017 – 12/31/2017).

71152—Problem Identification and Resolution

Annual Follow-Up of Selected Issues (1 Sample)

The inspectors reviewed the licensee’s implementation of its corrective action program related to the following issues:

- (1) Out-of-service area radiation monitor workarounds in torus.

71153—Follow-Up of Events and Notices of Enforcement Discretion

Licensee Event Reports (1 Sample)

The inspectors evaluated the following licensee event reports which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

- (1) Licensee Event Report (LER) 05000249/2017–001–01, “Unit 3 Standby Liquid Control System Inoperable Due to a Manufacturing Defect Causing a Piping Leak.” This event was a supplemental LER. The original LER was closed in Inspection Report 05000237/2017004; 05000249/2017004 (ADAMS Accession number ML18022A431).

INSPECTION RESULTS

71111.15—Operability Determinations and Functionality Assessments

Unresolved Item (Open)	Enforcement Action: EA–18–016: Unanalyzed Condition for Tornado Missiles	71111.15
<u>Description:</u> On June 10, 2015, the NRC issued Regulatory Issue Summary (RIS) 2015–06, “Tornado Missile Protection” (ML15020A419), focusing on the requirements regarding tornado-generated missile protection and required compliance with the facility-specific licensing basis. The RIS also provided examples of noncompliance that had been identified through different mechanisms and referenced Enforcement Guidance Memorandum (EGM) 15–002,		

“Enforcement Discretion For Tornado Generated Missile Protection Non-Compliance,” which was also issued on June 10, 2015 (ML15111A269) and revised on February 7, 2017 (ML16355A286). The discretion applied to Technical Specification (TS) limiting condition for operations (LCOs) that would require a reactor shutdown or mode change if the licensee could not meet the required actions within the TS completion time due to structures, system, and components (SSCs) declared inoperable because of tornado generated missile issues. The EGM stated that a bounding risk analysis performed for this issue concluded that tornado missile scenarios do not represent an immediate safety concern because their risk is within the LIC-504, “Integrated Risk-Informed Decision-Making Process for Emergent Issues”, risk acceptance guidelines. In the case of Dresden Station, the EGM provided for enforcement discretion of up to three years from the original date of issuance of the EGM.

The EGM allowed the licensee to re-establish operability when the licensee implemented, prior to the expiration of the time mandated by the affected LCOs, initial compensatory measures that provided additional protection such that the likelihood of tornado missile effects were lessened followed by more comprehensive compensatory measures within 60 days of issue discovery. The enforcement discretion was also conditional to the comprehensive measures remaining in place until permanent repairs are completed or until the NRC dispositions the non-compliance in accordance with a method acceptable to the NRC such that discretion is no longer needed.

Section 3.5 of the Dresden Power Station Updated Final Safety Analysis Report (UFSAR) states in part that SSCs important to safety shall be adequately protected against missiles generated by various causes, including natural phenomena. On February 12, 2018, the licensee initiated IR 04103159, identifying a nonconforming condition of Section 3.5. Specifically, the vent lines for the U2, U2/3, and U3 emergency diesel generator (EDG) fuel oil tanks were not adequately protected from tornado-generated missiles. The licensee declared fuel oil tanks and their associated EDGs inoperable, and promptly implemented compensatory measures designed to reduce the likelihood of tornado-generated missile effects.

The condition was reported to the NRC as Event Notice (EN) 53204 as an unanalyzed condition and potential loss of safety function.

Corrective Action(s): The licensee documented the inoperability of the SSCs in the Corrective Action Program (CAP) and in the control room operating log. In addition, the affected TS LCO conditions applicable in the mode of operation at the time of discovery were documented in the control room operating log. The shift manager notified the NRC resident inspector of implementation of EGM 15-002, and documented the implementation of the compensatory measures to establish the SSCs “operable but nonconforming” prior to expiration of the LCO required action.

The licensee’s immediate compensatory measures included:

- Verifying that procedures were in place and training was current for performing actions in response to a tornado event.
- Verifying that procedures were in place and training was current to respond to a tornado watch, such as: (1) actions to be taken relating to tornado missile hazards; (2) potential restoration of equipment important to maintaining safe shutdown conditions that is unavailable at the time of the tornado watch; (3) warning and

protection strategies for personnel; and (4) damage assessment and restorative actions for equipment that may be damaged during a tornado.

- Establishing a heightened level of station awareness and preparedness relative to identified tornado missile vulnerabilities.

The licensee's longer term compensatory measure was to modify DOA-0010-02, "Tornado Warning – Severe Winds" procedure to include actions for damage assessment and restorative actions for systems with a vulnerability to damage from tornado missiles.

Corrective Action Reference: IR 04103159

Enforcement:

Violation: The enforcement discretion was applied to the required shutdown actions of the following TS LCOs for both units:

- TS 3.0.3, "General Shutdown LCO"
- TS 3.8.1, "AC Sources – Operating"
- TS 3.8.2, "AC Sources – Shut down"

Severity/Significance: The subject of this enforcement discretion, associated with tornado missile protection deficiencies was determined to be less than red (i.e., high safety significance) based on a generic and bounding risk evaluation performed by the NRC in support of the resolution of tornado-generated missile non-compliances. The bounding risk evaluation is discussed in Enforcement Guidance Memorandum 15-002, Revision 1, "Enforcement Discretion for Tornado-Generated Missile Protection Non-Compliance," and can be found in ADAMS Accession No. ML16355A286.

Basis for Discretion: The NRC exercised enforcement discretion in accordance with Section 2.3.9 of the Enforcement Policy and EGM 15-002 because the licensee initiated initial compensatory measures that provided additional protection such that the likelihood of tornado missile effects were lessened. The licensee implemented actions to track the more comprehensive actions to resolve the nonconforming conditions within the required 60 days. These comprehensive actions were to remain in place until permanent repairs were completed, which for Dresden Station were required to be completed by June 10, 2018, or until the NRC dispositioned the non-compliance in accordance with a method acceptable to the NRC such that discretion was no longer needed. On March 13, 2018 the licensee submitted a request to extend the enforcement discretion in letter titled "Request to Extend Enforcement Discretion Provided in Enforcement Guidance Memorandum 15-002 for Tornado-Generated Missile Protection

Non-conformances Identified in Response to Regulatory Issues Summary 2015-06, 'Tornado Missile Protection'." At the time of this inspection period, the NRC was in the process of reviewing this request.

EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure. No proprietary information was documented in this report.

- On February 16, 2018, the inspector presented the emergency preparedness program inspection results to J. Washko, Plant Manager, and other members of the licensee staff.
- On March 2, 2018, the inspector presented In-Plant Airborne Radioactivity Control and Mitigation, Occupational Dose Assessment inspection and the Performance Indicator Verification inspection results to Mr. P. Karaba, Site Vice President, and other members of the licensee staff.
- On April 9, 2018, the inspector presented the quarterly resident inspector inspection results to Mr. P. Karaba, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.01—Adverse Weather Protection

- DOA 0010-04; Floods; Revision 54
- IR 1479686; Large Amount of Water U3 Torus Basement Bay 14
- IR 2695524; NOS ID: Rain Intrusion in Mixed Waste Building
- IR 2708560; Flood Barrier Inspection Procedures
- IR 2732207; U2 RB Flood Barrier Seal #FL-39/1 Cover Screws Stripped
- IR 2736431; Continued Flood Seal Water in-Leakage in Unit 2/3 EDG RM
- IR 4069701; D2R25: Flood Seal FL-12-6
- IR 4106055; Water Puddle in the U2 Reactor Building Corner Room
- IR 4106319; Rain Water Leaking Into Turb Bldg Behind Bus 31
- IR 4106322; Rain Water Leaking Into 2/3 EDG Interlock Under Door 3
- IR 4106323; Rain Water Leaking Into Refuel Floor Interlock Under Door 49
- IR 4106330; Rain Water Leakage Into U3 Torus Basement
- IR 4106333; Water Puddle on U3 Refuel Floor 613
- IR 4106547; NRC Resident Inspector Q&A on Torus Basement Water
- IR 4106574; Entered DOA 0010-04 Floods
- IR 4106651; Missing Bolt on IC MU Hinged Louver #3 Flood Barrier
- IR 4107593; NRC Follow-up to IR 04106330 – U3 Torus Water In-Leakage
- IR 4109196; Operations 4.0 Critique for DOA 0010-04 Flooding

71111.04Q and S—Equipment Alignment

- IR 4087699; U3 100% Condensate Filter Valve Found 10% Open
- Drawing: 20300-001, Low Pressure Coolant Injection System and Instrumentation, Revision 0
- DOP 6620-E1; Unit 2 Station Blackout Electrical Checklist; Revision 03
- DOP 6620-M1; Unit 2 Station Blackout Mechanical Checklist; Revision 10
- DOP 6620-16; SBO D/G 2(3) Preparation for Standby Readiness; Revision 16

71111.05Q—Fire Protection Annual/Quarterly

- Dresden Pre-Fire Plan for FZ 8.2.4
- Dresden Pre-Fire Plan for FZ 11.1.34
- Dresden Pre-Fire Plan for FZ 6.2
- IR 4117617; NRC ID Rope in AEER Above the 902-34 Panel

- IR 4108412; NRC ID: Rope Holding Cables in AEER
- IR 4117875; NRC SRI Questioned AEER Halon Placards
- Drawing: F-405; Fire Suppression System Computer Room Aux. Electric Equip. Rm; Revision B
- Dresden Pre-Fire Plan for FZ 8.2.6A
- IR 3974160; NRC FP Triennial Insp – U2 H2 So Area Prefire Plans
- Dresden Pre-Fire Plan for FZ 6.1

71111.06—Flood Protection Measures

- IR 2614834; Enhancements Identified to Localized and Global Flooding
- IR 2677804; Procedure Revision of DOA 0010–04, Floods
- IR 2708560; Flood Barrier Inspection Procedures
- IR 2718499; Documentation of NRC Requested Tour of Flood Barriers
- IR 2727350; Flood Penetrations Seal Leaked Past the (Thermafiber)
- IR 2727438; D3R24 Scope Add For Fukushima Flood Seals
- IR 2736431; Continued Flood Seal Water In-Leakage in Unit 2/3 EDG Rm
- IR 4023660; 2A CCSW Pump Suction Pressure Line Leak
- IR 4033556; U2 CCSW Vault Door Spring Latch Not Functioning Properly
- IR 4069701; D2R25: Flood Seal FL–12–6 Failure
- WO 01946125–03; D2 18M TSTR CCSW Pump Vault Water Tight Door Leak Test
- DOS 1500–21; CCSW Pump Vault Watertight Door Leak Test; Revision 01
- DTP 70; Evaluation of CCSW Pump Vault Flood Protection Leakage Test Results; Revision 002

71111.07—Heat Sink Performance

- WO 04624946–01; D2 SA Com HX Thermal Performance Test – 2B LPCI HX
- IR 3959897; 2B LPCI Heat Exchanger Thermal Performance
- IR 4023453; 3B LPCI Heat Exchanger Thermal Performance Testing
- IR 4055687; 3B LPCI Heat Exchanger Thermal Performance Results
- DTS 1500–05; Containment Cooling Heat Exchanger Thermal Test Data; Revision 12
- ER-AA–340; GL 89–13 Program Implementing Procedure; Revision 8

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

- IR 4103440; LORT DEP Failure on NARS Transmittal
- IR 4105143; OPS Crew 2 Discretionary Clock Reset
- WO 04750540–01; Replace U3 Turbine Controller S1 Power Supply
- IR 4110621; U3 Hydrogen Addition Tripped During Load Drop
- IR 4110773; U3 CRD K–12 Fast Withdrawal
- IR 4110980; Steam Leak on 2–3101–C3 2C Low Pressure Heater
- IR 4111362; Emergent Dose Taken For Unit 3 Down Power
- IR 4111369; Emergent Dose Taken for Unit 2 Down Power
- IR 4112106; Unexpected Response From ASD Mater Controller
- IR 4112707; Unit 3 Downpower Scope Change
- IR 4113540; 4.0 Critique: U3 Load Drop
- DGP 03–01; Power Changes; Revision 135

71111.12—Maintenance Effectiveness

- IR 4092384; U2 MRule Function 02-3 Needs A(1) Determination

- IR 4090806; Isolation Condenser High Flow Switch Out of Cal.
- IR 4079307; Historical Operability Review for IR 406471
- IR 4069471; MOV 2–1301–3 Stroke Length Found Shorter Than Acceptable
- IR 4061383; MOV 2–1301–10 Failed to Close
- IR 4030278; 2/3A ISO Condenser Make-up Pump
- IR 4026860; 2/3A ISO Cond Make-Up Pump Failed Start
- IR 4002983; PMC: ISO Condenser 3–1341 LT Performance
- IR 3995280; Found DPIS 3–1350–B Out of Tolerance – Non Tech Spec
- IR 3984623; NRC Identified Issue With DOP 1300–M1–E1
- IR 3984617; NRC Identified Buzzing of Solenoid
- IR 2722528; Steam Leak on 2–1301–16 Has Increased
- IR 2712349; Degraded Hoffman Junction Box in 2/3B IC Makeup Pump House
- IR 2711782; August 2016 Forecast for HP (IC) SSPI Was Exceeded
- IR 2706381; NRC Identified Issues Dealing With the Isolation Condenser
- IR 2705590; CCP NRC Identified Proc Issues Suring Walkdown
- IR 2688489; 2/3A Iso Cond Make-Up Pump Failed Start
- IR 2680300; Historical Operability Review for IR 2668322
- IR 2668322; MOV 2–1301–3 As-Found Stroke Length High
- IR 2668194; 2–1301–10 Valve Failed to Close
- IR 2655325; 2–1350–B Found Out of Tolerance
- IR 2607347; 2/3 'A' Isolation Condenser MU Pump Failed to Start
- WO 01375077; Unit 3 CCSW Vault DTP 70 Leakage Near Administrative Limit
- WO 01375104; U3 CCSW Vault Penetration Leakage Above Operability Limit
- IR 2694102; U3 CCSW Vault Door
- IR 4081812; U3 CCSW Vault Penetration Leakage Above Operability Limit
- IR 4082164; Unit 3 CCSW Vault DTP 70 Leakage Near Administrative Limit
- IR 4093045; A1/A2 Determination Required for CCSW Vault Leakage
- ER-AA-310; Implementation of the Maintenance Rule; Revision 11
- ER-AA-310-1005; Maintenance Rule – Dispositioning Between (a)(1) and (a)(2); Revision 7

71111.13—Maintenance Risk Assessments and Emergent Work Control

- IR 02636511; Main TR 2 Trouble
- IR 4095100; Main TR 2 Trouble
- WO 04737036-01; Main TR 2 Trouble
- DOA 6100-01; Main Transformer Trouble; Revision 34
- Drawing: 12E-2376; Schematic Diagram Main Power Transformer Cooling; Revision Z
- Protected Equipment List for Unit 2/3 EDG
- Protected Equipment List for Unit 3 EDG
- IR 4107418; U3 HPCI CO Modification Required
- IR 4108270; Severly Degraded Plug Needs Expanded Scope to be Replaced
- IR 4108357; MOV 3–2301–49 Testing Delays
- IR 4109128; U3 HPCI GSLO Motor Bridge Readings
- IR 4109194; Unable to Lube North Bearing on Blower Shaft of Room Cooler
- Protected Equipment List for Unit 3 ADS
- Protected Equipment List for Unit 3 Div 1 CS
- Protected Equipment List for Unit 3 Div 2 Core Spray
- Protected Equipment List for Unit 3 Div 1 LPCI
- Protected Equipment List for Unit 3 Div II LPCI
- Protected Equipment List for Unit 3 Isolation Condenser
- Operator log for 02/25/2018 20:00; Unit 3

- IR 4112802; NRC RI Question on PPW
- Protected Equipment List for Unit 2 ADS
- Protected Equipment List for Unit 2 Div 1 Coe Spray
- Protected Equipment List for Unit 2 Div 2 Core Spray
- Protected Equipment List for Unit 2 Div I LPCI
- Protected Equipment List for Unit 2 Div II LPCI
- Protected Equipment List for Unit 2 Isolation Condenser
- WO 4755175-04; Troubleshoot ASF6 Board and OPRM 6 Center Power Supply
- IR 4112084; OPRM 6 Power Supply Failure
- DIS 0700-09; Preventive Maintenance and Calibration of RBM, LPRM, APRM, and OPRM Power Supplies; Revision 23
- Protected Equipment List for Unit 2 EDG
- Protected Equipment List for Unit 3 EDG
- DOP 6600-E1; Unit 2 Standby Diesel Generator; Revision 04
- DOP 6600-E1; Unit 3 Standby Diesel Generator; Revision 06
- OP-AA-108-117; Protected Equipment Program; Revision 5

71111.15—Operability Determinations and Functionality Assessments

- IR 2716770; DOS 1500-02 Acceptance Criteria for HPCI Room Coolers
- IR 3949714; U3 HPCI Room Cooler Fan Degraded
- IR 3984974; Unit 3 HPCI Room Cooler Eddy Current Results
- IR 4079788; Unit 3 HPCI Room Cooler Vibrations Elevated
- IR 4093842; Small U3 HPCI Room Cooler Leak Identified by NLO on Rounds
- IR 4096414; NRC Questions on Previous HPCI Issue Reports
- DOS 2300-03; High Pressure Coolant Injection System Operability and Quarterly IST Verification Test; Revision 115
- RSA-D-92-06; HPCI Room Thermal Response With Loss of HPCI Room Cooler at Dresden Station; dated November 13, 1992
- Calculation DRES98-077; Dresden HPCI Room Thermal Response with Reduced Room Cooler Capability; Revision 001B
- Design Analysis Minor Revision and 50.59 Screening Form for EC 352023; Dresden HPCI Room Thermal Response With Reduced Room Cooler Capacity; Revision 000
- Design Analysis Minor Revision for EC 365221; Dresden HPCI Room Thermal Response With Reduced Room Cooler Capacity; Revision 001A
- Memorandum to Mr. P. Chabot, Site Engineering Manager, Subject: Dresden Unit 2 HPCI Cooler Operability System Code 1500, 2300, 3900, Dated July 7, 2000
- Memorandum for T. Martin, Acting Director, DRS, RIII from J. Zwolinski, Assistance Director, DRP, RIII, Subject: Resolution of Request for Technical Assistance Isolation of the ECCS Pump Room Coolers (AITS 91-0523); dated July 30, 1993
- Unit 3 HPCI Room Cooler Fan Vibration Data for 02/28/2018
- Drawing: M-355, Diagram of Service Water Piping, Revision SN
- IR 2739263; Valve Failed to Move (3-1501-18A)
- IR 2742041; MOV 3-1501-18A High Motor Current
- IR 4098218; Request Contingency Tasks for Upcoming LPCI Window
- MOV PVT Interval Performance Review Data Collection for DRE-3-1501-18A; dated 02/08/2018
- MOV Post-Test Data Review Worksheet for DRE-3-1501-18A; dated 11/13/2016 (WO 01966473-06)
- Teledyne Test Service; 3-1501-18A AL Tor TH/TQ As-left; dated 11/13/2016; File 16318R10
- Teledyne Test Service; 3-1501-18A AL Tor Timing As-left; dated 11/13/2016; WO#1966473

- Corrective Action Program Evaluation Report (Equipment) for MOV 3–1501–18A Motor Failed; Condition Reports 03972295, 02739263; Dated 03/20/2017
- Drawing: M–360; Sheet 1; Diagram of L.P. Coolant Injection Piping; Revision VX
- Drawing: M–360; Sheet 2; Diagram of L.P. Coolant Injection Piping; Revision BJ
- WO 04674355–01 and –02; 3B SBLC Pump Oil Leak
- WO 04703184–01; D3 Qtr TS 3B SBLC Pmp Test for IST
- IR 4085972; Corporate OPS ID’s Work Area Issues After Work Window
- IR 4106643; Work Request for U3 SBLC Addition/Sparge/Sample
- IR 4101039; NRC Concern: SBLC 3–1101–33 Valve Position Question
- IR 4101071; 3–1101–33 Valve Stem Too Long
- DOS 1100–04; Standby Liquid Control System Quarterly/Comprehensive Pump Test for Inservice Testing (IST) Program;Revision 53
- OP–AA–108–101–1001; Component Position Determination; Revision 4
- Drawing: M–364; Diagram of Standby Liquid Control Piping; Revision AS
- IR 0459779; U3 EDG Fuel Consumption Test Below Nominal Range
- IR 2419428; U3 EDG Fuel Consumption Below Low Limit
- IR 2415891; EDG Fuel Oil Pump Coupling Looks to be Mis-aligned
- IR 4105679; Sensor Removed to Support D3 EDG Work
- IR 4107241; U3 EDG Fuel Consumption Below Nominal
- Event Notification # 53204
- Event Notification # 53235
- DOA 0010–02; Tornado Warning/Severe Winds; Revision 23
- OP–AA–108–111–1001; Severe Weather and Natural Disaster Guidelines; Revision 16
- Operator log for 02/12/2018 12:00:00
- Letter from B. Franzen, Exelon Nuclear Power Station, to NRC; Subject: Request to Extend Enforcement Discretion Provided in Enforcement Guidance Memorandum 15–002 for Tornado-Generated Missile Protection Non-Conformance Identified in Response to Regulatory Issues Summary 2015–06, “Tornado Missile Protection”, dated March 13, 2018

71111.18—Plant Modifications

- DOS 0500–25; RPS Channels A1, A2, B1, and B2 Automatic Scram Contactor Test; Revisions 15 and 16
- Document Site Approval Form for EC 623479
- IR 4114764; 4.0 Critique For DOA Entry Due to U3 Partial Half-Scram
- CA–AA–112; Temporary Configuration Changes; Revision 26
- Design Analysis No. DRE05–0081; Dresden Unit 3 MCC Breaker Setting for Continuous Duty Motors and Motor Operated Valves ***Key Calc***; Revision 002
- Design Analysis No. DRES02–0034; Motor Operated Valve AC Motor Terminal Voltage Calculation for Dresden System 1501, Unit 3 ***Key Calc**** Essential Calc; Revision 001
- Drawing: 12E–3320; Key Diagram Reactor Building 480V MCC 38–4, 38–7 & 39–7; Revision AM

71111.19—Post Maintenance Testing

- IR 4090023; 3–1501–5B Failed to Reopen Following Stem Lube
- WO 04731611-01; 3–1501–5B Failed to Reopen Following Stem Lube
- OP–AA–103–105; Limitorque Motor-Operated and Chainwheel Operated Valve Operations; Revision 5
- Drawing: 12E–3440; Schematic Diagram LPCI/Containment Cooling System Motor Operated Valves 3–1501–3A, –3B, –5A, –5B, –5C, –5D; Revision AE

- IR 4091990; Old Power Packs Need to be Sent Out to Be Rebuilt
- IR 4092076; 3B SBO ENG DC Lube Oil Pump Brush Holder Cover Stuck
- IR 4092395; U3 SBO Sump Pump Auto Lock Out Light is Lit
- IR 4092480; Unexpected Alarm on IRM 15
- IR 4093314; 3B SBO Engine B Coolant Relief CAP Failed PMT
- IR 4093316; U3 SBO Engine A Crank Case Pressure Too Low
- IR 4093319; U3 SBO Engine A Crank Case Pressure Too Low
- IR 4093321; 3B SBO Eng Jacket Wtr Expansion Tank High
- IR 4093322; U3 SBO Engine B Cylinder 4 and Turbo Temperature Low
- IR 4093336; U3 SBO Generator Kilovars Reading High
- IR 4093339; U3B SBO Rack Position High
- IR 4093350; U3 SBO Did Not Achieve 110% KW Rating During DOS 6620-07
- IR 4093355; 3B SBO Engine Left Duplex Filter High DP
- IR 4093359; U3 SBO Radiator Outlet Temp Low
- IR 4093364; U3 SBO DG Room Temperature Was Low During Run
- WO 00510431-03; D3 18Y PM Replace Head/Liner Gaskets, Head Seat Rings & Cyl
- WO 00510432-03; D3 12Y PM Replace Head/Liner Gaskets, Head Seat Rings & Cyl
- WO 01900744-03; D3 2Y PM SBO DG Mechanical Maintenance Inspection
- WO 04697768-01; DS3 QTR COM SBO Diesel Generator Surveillance
- DOS 6620-07; SBO 2(3) Diesel Generator Surveillance Tests; Revision 46
- WO 01379080-03; D2 40Y PM EDG Replace Fuel Oil Transfer Pump Motor 2-5203
- WO 01616812-03; D2 10Y PM Replace "FFC" & "EXC" 2 EDG Relays
- WO 04702714-01; D2 San TS Diesel Generator Fast Start Operability Surveillance
- WO 04733763-01; D2 1M TS Unit Diesel Generator Operability
- IR 4104856; U2 EDG Fragnet Critique
- IR 4105278; U2 EDG Cylinder #1 EGT Reading Low
- Appendix X; Technical Specification Action Statement Initiated Surveillance; Revision 36
- DOS 6600-01; Diesel Generator Surveillance Tests; Revision 138
- DOS 6600-14; Diesel Oil Transfer Pump Operation and Fuel Consumption Test; Revision 22
- Drawing: M-41; Diagram of Turbine & Diesel Oil Piping; Revision A1
- WO 04738387-02; Small U3 HPCI Room Cooler Leak Identified by NLO on Rounds
- WO 04745625-01; D3 QTR TS HPCI Pump Oper Test and IST Surv
- IR 4109028; HPCI Room Cooler Tube Plugging
- IR 4109048; Motor/Fan Belt Shroud Has Missing Hold Down Bracket
- IR 4108598; Indications From Eddy Current Testing of U3 HPCI Room Cooler
- IR 4109128; U3 HPCI GSLO Motor Bridge Readings
- IR 4109627; HPCI Thrust Brg Oil Temp Erratic Again
- IR 4109628; Unexpected Alarm: HPCI Oil Tank Level Low
- DOS 2300-03; High Pressure Coolant Injection System Operability and Quarterly IST Verification Test; Revision 115
- Eddy Current Examination Final Report for HPCI Room Cooler; EPN: 3-5747; February 2018
- IR 4113106; U2 HPCI MSC Could Not Reach the HSS
- IR 4113714; 4.0 Critique for U2 HPCI Run on 03/09/2018
- WO 01524831-05; D2 6Y COM MOV Diagnostic Testing & Limitorque Surv 2-2301-48
- WO 01760557-02; 2-2301-48 Valve Packing Leak
- WO 01910329-02; D2 2Yr PM Insp HPCI Oil Fltr/Clean Element
- WO 01911448-02; D2 2Yr PM HPCI Inlet Drain Pot Strainer/Trap Inspection
- WO 01911750-04; D2 2Y Com Open/Clean/Insp/Eddy Current Test HPCI Rm Clr Coil
- WO 01912382-02, and -04; D2 2Yr PM Check/Adjust Repack Valve 2301-64
- WO 04657858-05; U2 HPCI EOP Motor Heater Not Energized
- WO 04716759-01; D2 Qtr TS HPCI Pump Oper Test and IST Surv

- DOS 2300-03; High Pressure Coolant Injection System Operability and Quarterly IST Verification Test; Revision 115

71111.22—Surveillance Testing

- WO 04692336; D3 QTR TS HPCI Pump Oper Test and IST Surv
- WO 01894816; D3 2Y PM Pot Refuel HPCI Fast Init Test
- DOS 2300-03; High Pressure Coolant Injection System Operability and Quarterly IST Verification Test; Revision 115
- DOS 2300-07; High Pressure Coolant Injection Fast Initiation Test; Revision 44
- IR 4091951; U2 CCSW Pump 2D Discharge Check Valve Chatter
- DOS 1500-02; Containment Cooling Service Water Pump Test and Inservice Test (IST); Revision 92
- DOS 1500-12; Containment Cooling Service Water LOOP Flow Verification; Revision 35
- WO 04713351-01; D2 QTR TS 2B SBLC Pmp Test for IST
- DOS 1100-04; Standby Liquid Control System Quarterly/Comprehensive Pump Test For the Inservice Testing (IST) Program; Revision 53
- WO 04742227-01; D2/3 Qtr Com 'A' ISO Cond Make-up Pump Operability
- DOS 1300-03; 2/3A(B) Isolation Condenser Makeup Pump Quarterly Operability; Revision 25
- Drawing: 20700LN001-001; Unit 2 Isolation Condenser System; Revision 03
- Drawing: 20700LN001-011; Unit 2 Isolation Condenser System; Revision 01
- M-359; Diagram of Isolation Condenser Piping; Revision BQ
- WO 01876031-01; D3 24M TS Div 1 & 2 LPCI INJ ECCS Initiation Circuitry LSFT
- DIS 1500-05; Division I & II Low Pressure Coolant Injection ECCS Initiation Circuitry Logic System Functional Test; Revision 35

71114.02—Alert and Notification System Testing

- Off-site Emergency Plan Alert and Notification System Addendum for Dresden Nuclear Power Station; Revision 2
- Braidwood/Dresden Siren Report; 01/01/2016 – 12/31/2017
- Dresden Siren Report; 01/01/2016 – 12/31/2017
- Braidwood/Dresden Plant Warning System Maintenance and Operational Reports; January – December 2016 and January – December 2017
- IR 2667268; Inadvertent Siren Activation of Will County Sirens; 05/07/2016
- IR 2685013; EP-Siren Failure (BD11)
- IR 2696424; EP-Siren Failure (BD11)
- IR 2699770; EP-Siren Failure (BD11)
- IR 2706219; EP-Siren Failure (BD18)
- IR 3987170; EP-Siren Failure (BD18)
- IR 3989049; EP-Siren Failure (BD18)
- IR 3993263; EP-Siren Failure (BD01)
- IR 4026899; EP-Siren Failure (BD01)
- IR 4021679; EP-Siren Failure (BD01)

71114.03—Emergency Response Organization Staffing and Augmentation System

- Quarterly Call-In Drill Test Results from 1st quarter 2016 through 4th quarter 2017
- IR 2683956; Missed EP Call-In
- IR 2684117; Late Call In for ERO Call In Drill
- IR 2694205; ERO Call In Drill Late Response
- IR 2694324; Missed ERO Call-In

- IR 3961357; ERO Qualification Expired at the End of 2016
- IR 3997928; NOS ID ERO Individuals Missed EP Re-Training Frequencies

71114.05—Maintenance of Emergency Preparedness

- Dresden Alert Event Report; 06/27/2016
- Dresden 2017 NRC Graded Exercise Evaluation Report; 05/09/2017
- Dresden 1Q16 TSC Performance Indicator Drill Evaluation Report; 03/25/2016
- Dresden 1Q17 Focus Area Drill Report; 04/14/2017
- IR 4005789; EP Dresden EAL E-HU1 Threshold Value
- IR 4002406; DRE-EP-2017-NRC-CR Failed DCS
- IR 4002418; DRE-EP-2017-NRC-OSC Failed DCS
- IR 4002822; DRE-EP-2017-NRC-EOF Failed DCS
- IR 4002957; DRE-EP-2017-NRC-JIC Failed DCS
- IR 2618606; EP-DEP Failure and Missed NARS Time During TSC Drill
- IR 2644532; EP-NRC Resident Comments During 02/18/2016 EP TSC Drill

71124.03 In-Plant Airborne Radioactivity Control and Mitigation

- IR 04072156; D2R25 Local Leak Rate Test for 2A CAM Drywell Air Sample Inlet Recorded Leakage
- IR 03971624; Deficiency Found in TSC Electronic Dosimeters will be Out of Calibration
- IR 02717473; CREVS Charcoal Test Results did not Meet Acceptance Criteria
- IR 03999041; Enhanced Opportunity to Control Air around Drycask
- IR 03975702; Spectacle Kit Not Maintained in the MCR
- IR 03990763; Unable to get a Mask Fit
- IR 04045287; Confined Space Rescue Team Member Qualification Issue Due to Expired Mask Fit Test
- IR 02740268; Eagle Air Compressor CO Monitor not Working
- Occupational Health Dynamic Quantifit Respirator Fit Tester and Software; User Manual
- RP-DR-831; MSA Self-contained Breathing Apparatus Inspection; Revision 12
- PSI Engineering; Quarterly Service air and Self Contained Breathing Apparatus Quality Air Analysis; dated February 2017 through February 2018
- RP-AA-443; Quantitative Respiratory Fit Testing; Revision 15
- RP-AA-444; Controlled Negative Pressure Fit Testing; Revision 6
- RP-AA-224; CEDE Dose Tracking Using Lapel Air Sampling; Revision 2
- RP-AA-870; Set-Up and Operation of Portable Air Filtration Equipment; Revision 7
- SCBA Cylinder Hydro Testing Record provided by Air One Equipment, Inc.; dated February 5, 2018
- RP-AA-870-1001; Sample HEPA Issuance and Inspection Checklist; dated March 3, 2017 and June 22, 2017

71124.04 Occupational Dose Assessment

- IR 04001959; Resolution of Error and Warning for Annual Dose Reporting due to Unreturned or Lost DLR
- IR-04038286; Period 1 Control DLR Dose Variance due to Control DLRs were Moved and not Returned to their Usual Storage Area
- IR 04053581; Incorrect Monitoring End Date for Recently Issued Spare DLR
- IR 03971624; Deficiency Found in TSC Electronic Dosimeters will be Out of Calibration
- RP-AA-220; Bioassay Program; Revision 12

- RP-AA-222; Methods for Estimating Internal Exposure from In-Vivo and In-Vitro Bioassay Data; Revision 5
- RP-AA-441; TEDE ALARA Evaluation; Revision 8
- RP-AA-223; Calculating and Crediting Dose from Tritium Exposure; Revision 1
- RP-AA-215; Calculating and Crediting Dose from Noble Gas Exposure; Revision 1
- NVLAP; Scope of Accreditation to ISO/IEC 17025:2005; dated January 1, 2018

71151—Performance Indicator Verification

- NRC Performance Indicator Data; Emergency Preparedness – Drill/Exercise Performance; 1st quarter 2017 – 4th quarter 2017
- NRC Performance Indicator Data; Emergency Preparedness – ERO Readiness 1st quarter 2017 – 4th quarter 2017
- NRC Performance Indicator Data; Emergency Preparedness – Alert and Notification System Reliability; 1st quarter 2017 – 4th quarter 2017
- LS-AA-2090; Monthly Data Elements for NRC Reactor Coolant System (RCS) Specific Activity; Revision 4
- Data Elements RCS Occurrences Reviewed from January 2017 through December 2017

71152—Problem Identification and Resolution

- IR 4097210; Current Shiftly RP Work-Arounds
- IR 4009373; Unexpected Alarm: 903–3 F–1, Area Rad Mon Downscale
- IR 4018908; Unexpected Alarm 903–3 C–1
- IR 4046011; Unexpected Alarm 902–3 A–1, RX Bldg Rad Hi
- IR 4054695; Unexpected Alarm 902–3 F–1 ARM Downscale HPCI Cubicle
- IR 4064804; U2 Unexpected Alarm; ARM Downscale, CRD Repair Rm
- IR 4066595; Unexpected Alarm 903–3 D–1, Turb Bldg Rad Hi