



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

January 29, 2020

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

**SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 – INTEGRATED
INSPECTION REPORT 05000237/2019004 AND 05000249/2019004**

Dear Mr. Hanson:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Dresden Nuclear Power Station, Units 2 and 3. On January 10, 2020, the NRC inspectors discussed the results of this inspection with Mr. P. Karaba, Site Vice President and other members of your staff. The results of this inspection are documented in the enclosed report.

Five findings of very low safety significance (Green) are documented in this report. Five of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, 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 the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC Resident Inspector at Dresden Nuclear Power Station, Units 2 and 3.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; and the NRC Resident Inspector at Dresden Nuclear Power Station, Units 2 and 3.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

David E. Hills, Chief
Branch 1
Division of Reactor Projects

Docket Nos. 05000237 and 05000249
License Nos. DPR-19 and DPR-25

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Bryan C. Hanson from David Hills dated January 29, 2020.

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 – INTEGRATED INSPECTION REPORT 05000237/2019004 AND 05000249/2019004

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000237 and 05000249

License Numbers: DPR-19 and DPR-25

Report Numbers: 05000237/2019004 and 05000249/2019004

Enterprise Identifier: I-2019-004-0062

Licensee: Exelon Generation Company, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Inspection Dates: October 01, 2019 to December 31, 2019

Inspectors: J. Corujo-Sandin, Senior Resident Inspector
M. Domke, Reactor Inspector
G. Edwards, Health Physicist
R. Elliott, Resident Inspector
T. Go, Health Physicist
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Approved By: David E. Hills, Chief
Branch 1
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated 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.

List of Findings and Violations

Failure to Identify and Control Hot Work			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000237/2019004-01 Open/Closed	[H.2] - Field Presence	71111.05Q
The inspectors identified a Green finding and associated non-cited violation (NCV) of Technical Specification 5.4.1.c, for the licensee's failure to establish, implement, and maintain Fire Protection Program procedures which ensure fire prevention for hot work. Specifically, the licensee failed to follow OP-AA-201-004, "Fire Prevention for Hot Work," Revision 16, which stated before hot work is permitted a hot work permit shall be posted at the job site, a designated fire watch established, and fire extinguisher readily available to the designated fire watch.			
Inaccurate and Incomplete Post Maintenance Testing Documentation for Containment Isolation Valve 2-1301-2			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000237/2019004-02 Open/Closed	[P.1] - Identification	71111.19
On November 12, 2019, the inspectors identified a Green finding and associated non-cited violation when the licensee failed to have acceptance criteria for testing containment isolation valves per Technical Specification Surveillance Requirement 3.6.1.3.5, in accordance with 10 CFR 50, Appendix B, Criterion V, and identify and document the action taken in regard to a deficiency in a quality record in accordance with 10 CFR 50, Appendix B, Criterion XVII.			
Failure to have Appropriate Installation Procedure for Relief Valve 2-4899-72			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000237/2019004-03 Open/Closed	[H.9] - Training	71111.19
On November 14, 2019, a self-revealed Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when the licensee failed to have an appropriate procedure for the installation of the Unit 2 containment cooling heat exchanger shell side relief valve.			

Failure to Survey for Work Conducted in a High Radiation Area			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000249,05000237/2019004-04 Open/Closed	[H.14] - Conservative Bias	71124.01
<p>A self-revealed finding of very low safety significance (i.e., Green) and an associated Non-Cited Violation (NCV) of 10 CFR 20.1501 (a)(1) "Surveys and Monitoring, General" was identified by inspectors when the licensee did not make surveys to assure compliance with 10 CFR 20.1601 (a)(3), which requires positive control for entries into areas where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. Specifically, the licensee failed to survey all accessible areas in the Unit 2/3 Radwaste 507' Basement Barreling Area and did not provide positive controls for all individuals that entered the room. Consequently, an individual encountered elevated dose rates in an area that had not been previously surveyed following a change of radiological conditions.</p>			

Failure to Positively Control a Door That Granted Access to a High Radiation Area			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000237/2019004-05 Open/Closed	[H.8] - Procedure Adherence	71124.01
<p>A self-revealed finding of very low safety significance (i.e. Green) and an associated NCV of 10 CFR 20.1601 (a)(3) was identified by inspectors when the licensee failed to lock and demonstrate positive control over a door that is the access point to an area having general area dose rates of approximately 3000 mrem/hour at 30 cm from the radiation source.</p>			

Additional Tracking Items

None.

PLANT STATUS

Unit 2 began the inspection period in coast down to prepare for refueling outage D2R26. The unit came offline on October 27, 2019, to commence D2R26. The refueling outage ended and the unit synchronized to the grid on November 15 and returning to full power on November 16, 2019. On December 9, 2019, the unit was down powered to 22 percent due to unidentified reactor coolant system leakage and returned to full rated thermal power on December 11, 2019. On December 14, 2019, power was reduced to 62 percent for a rod pattern adjustment and returned to full rated power the next day. On December 22, 2019, operators reduced electrical power to 65 percent for a complete rod pattern adjustment and returned to full power the same day. On December 28, 2019, the unit was down powered for a forced outage (D2F59) to repair a generator hydrogen leak and remained in that condition for the remainder of the inspection period.

Unit 3 began the inspection period at full power. On December 3, 2019, the unit was down powered to 82 percent for rod pattern adjustments and 3D3 feed water heater leak repair. The unit returned to full rated thermal power on December 7, 2019, and operated there 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

Seasonal Extreme Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of extreme cold temperatures and conditions that could adversely affect the ultimate heat sink such as ice blockages and frazil ice

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) Unit 2 shutdown cooling on October 28 - 30, 2019

- (2) Unit 2 fuel pool cooling with alternate decay heat removal on November 5, 2019
- (3) Unit 2 emergency diesel generator on November 5, 2019
- (4) Unit 2 AC power while on 4kv cross ties during October 30 through November 5, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (4 Samples)

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

- (1) Fire Zone (FZ) 1.2.2, U2 Drywell Primary Containment, elevation 517' on November 1, 2019
- (2) FZ 8.2.5B, U2 Low Pressure Heater Bay, elevation 517' on October 31, 2019
- (3) FZ 8.2.5A, U2 High Pressure Heater Bay, elevation 517' on November 7, 2019
- (4) FZ 11.3, Unit 2/3 Circulating Water Pumps, elevation 490'; Unit 2/3 Service Water Pumps / Traveling Screens, elevation 509'; and Unit 2/3 Crib House Ground Floor, elevation 517' on December 30, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) 2/3 Cribhouse (Submersible Emergency Diesel Generator Cooling Water Pumps)

71111.08G - Inservice Inspection Activities (BWR)

BWR Inservice Inspection Activities Sample - Nondestructive Examination and Welding Activities (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from October 30, 2019 to November 6, 2019:

03.01.a - Nondestructive Examination and Welding Activities.

- Volumetric, manual ultrasonic examination of low pressure coolant injection system piping welds 2/1/1519-16/16-K5 and 2/1/1519-16/16-K6, ASME category R-A, items R1.11/R1.16 located in the drywell
- Volumetric, manual ultrasonic examination of reactor recirculation system welds 2/1/0201A-22/L1/L2 and 2/1/0201A-28/PD1A/L2 and 2/1/0201A-22/L2-D17 and 2/1/0201A-28/PD1A-D15, augmented IGSCC category D, located in the drywell
- Surface, magnetic particle examination of low pressure coolant injection heat exchanger support 2-1503-B located in the reactor building

- Pressure boundary weld review for jet pump instrumentation nozzle overlay weld for weld number 6 designated JP1A/N20A-6

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered from April through May 2019

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the Control Room during Plant Shutdown for Refueling Outage, D2R26, on October 25 and October 27, 2019, and Plant Startup on November 14 - 15, 2019

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

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

- (1) Fuel Pool Radiation Monitor (a)(1) AR4276469
- (2) Control Rod Drive System WO 04768029-03

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

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

- (1) Unit 2 Yellow Risk for Lowered Inventory during outage on October 29, 2019
- (2) 4kv Crosstie after maintenance on October 30, 2019
- (3) Plant Risk associated with performing Unit 2, Division 1 undervoltage test on November 5, 2019
- (4) Fire Risk associated with removing the 2/3 service water pump from service on November 6, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (7 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) D2R26 Main Steam Isolation Valve Timing Issues
- (2) D2R26 Local Leak Rate Test Local Leak Rate Test (LLRT) Feedwater 0220-62A failed LLRT as found conditions
- (3) D2R26 Motor Operated Valve 2-1301-2 actuator degradation
- (4) D2R26 Relief Valve 2-4899-72 post installation operability
- (5) Historical Operability Review: Low Pressure Coolant Injection Loop Logic (DPIS 2-0261-35C)
- (6) Part 21 Emergency Diesel Generator Seized Fuel Injector Plunger and Bushing
- (7) High Pressure Coolant Injection and post-fire safe shutdown operation

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) U2 High Pressure Coolant Injection closure control MOV 2-2301-8

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (9 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Work Order (WO) 04590899, Unit 2 low pressure coolant injection valve on November 2, 2019
- (2) Unit 2 Source Range Monitor 22 prior to fuel moves in SE quadrant on November 7 and 8, 2019
- (3) WO 04771815, Unit 2 - 59" Main Steam Isolation Valve key interlock bypass test on November 9, 2019
- (4) WO 04708044-01, Unit 2 Scram Dump Valves on November 11, 2019
- (5) WO 01704408-01, Unit 2 2B Reactor Recirculating Pump Seal on November 11, 2019
- (6) WO 04741694, 2A Reactor Recirculating pump on November 12, 2019
- (7) Motor Operated Valve 2-1301-2 after control circuit work on November 12, 2019
- (8) WO 04856283-01, 2B Control Rod Drive Pump on November 13, 2019
- (9) WO 04797506-20, D2R26 PMTs [post maintenance tests] Required Prior to Entering Mode 2, relief valve 2-4899-72 post installation testing on November 19, 2019

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample 1 Partial)

- (1) The inspectors evaluated Unit 2 refueling outage D2R26 activities from October 27 to November 14, 2019
- (2) (Partial)
The inspectors evaluated a forced outage, D2F59, due to Unit 2 Generator Hydrogen Leak which began December 28, 2019, and continued into the year 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (4 Samples)

- (1) Low Pressure Coolant Injection Logic System Functional Test (LSFT) on October 3, 2019, WO 04701722
- (2) Unit 2 Reactor Cooldown Rate Monitoring on October 28, 2019
- (3) Unit 2 Division 1 Under Voltage Test on November 4, 2019
- (4) Unit 2 Anticipated Transient Without Scram LSFT per DIS 0263-08 (2 parts), WO 04718556 on October 29 and November 6, 2019

Containment Isolation Valve Testing (IP Section 03.01) (2 Samples)

- (1) Unit 2 Local Leak Rate Testing of Main Steam Isolation Valves (MSIV) 203-1A & 203-2A as per WO 04711481 on October 28, 2019
- (2) Unit 2 Reactor Water Clean Up - Local Leak Rate Testing of Primary Containment Isolation Valve as per WO 04797506 on October 30, 2019

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 02.01) (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

- (1) The inspectors reviewed the following:

Radiological Surveys

- Survey 2019-056853; Reactor Building Equipment Drain Tank Room
- Survey 2019-056188; 2/3 Radwaste 507' Barrel Area Basement
- Survey 2019-053762; 2/3 Radwaste 507' Barrel Area Basement

Risk Significant Radiological Work Activities

- Reactor Building Equipment Drain Tank Hydrolasing
- 2/3 Radwaste 507' Barrel Area Basement Hydrolasing
- D3R25 Drywell Control Rod Drive Exchange

Air Sample Survey Records

- Survey 2019-055827; Unit 2 Reactor Building Equipment Drain Tank Room
- Survey 2019-056853; Unit 2 Reactor Building Equipment Drain Tank Room
- Survey 2019-121830; Unit 2 Cavity N/E

Instructions to Workers (IP Section 02.02) (1 Sample)

The inspectors evaluated instructions to workers including radiation work permits used to access high radiation areas.

- (1) The inspectors reviewed the following:

Radiation Work Packages

- DR-2-19-00333; 2019 Unit 2 Floor Drain System Activities; Revision 1
- DR-2-19-00233; Radwaste Concentrator Maintenance; Revision 00
- DR-2-19-00548; D2R26 Dry Well Reactor Water Clean UP 1201-1 Valve Repairs

Electronic Alarming Dosimeter Alarms

- Electronic Alarming Dosimeter Dose Rate Alarm on 2/3 Radwaste 507' Barrel Area Basement on 10/22/2019

Labeling of Containers

- Trash Container Located in Dresden Radwaste
- Trash Container Located in Dresden 2/3 Turbine Building
- Trash Container Located in Dresden 2/3 Reactor Building

Contamination and Radioactive Material Control (IP Section 02.03) (1 Sample)

The inspectors evaluated licensee processes for monitoring and controlling contamination and radioactive material.

- (1) The inspectors verified the following sealed sources are accounted for and are intact:
- Small Plate Source; Cs137
 - Small Plate Source; Cs137

Radiological Hazards Control and Work Coverage (IP Section 02.04) (1 Sample)

The inspectors evaluated in-plant radiological conditions during facility walkdowns and observation of radiological work activities.

- (1) The inspectors also reviewed the following radiological work package for areas with airborne radioactivity:
- DR-2-19-00548; D2R26 Dry Well Reactor Water Clean UP 1201-1 Valve Repairs
 - DR-2-19-00333; 2019 Unit 2 Floor Drain System Activities; Revision 1

High Radiation Area and Very High Radiation Area Controls (IP Section 02.05) (1 Sample)

- (1) The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 02.06) (1 Sample)

- (1) The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

71124.02 - Occupational ALARA Planning and Controls

Implementation of ALARA and Radiological Work Controls (IP Section 02.03) (1 Sample)

The inspectors reviewed as low as reasonably achievable practices and radiological work controls.

- (1) The inspectors reviewed the following activities:
 - DR-2-19-00548; D2R26 Dry Well Reactor Water Clean UP 1201-1 Valve Repairs; Revision 1
 - DR-2-19-00333; 2019 Unit 2 Floor Drain System Activities; Revision 1

71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Radioactive Material Storage (IP Section 02.01) (1 Sample)

The inspectors evaluated radioactive material storage.

- (1) The inspectors toured the following areas:
 - Advance Liquid Processing System (ALPS) Radwaste Area 517'
 - Sea Vans Storage Yard located at Protected Area
 - Radwaste Barreling Area 519'
 - Unit-2/3 Radwaste 519' Stock Area and Truck-bay Area

The inspectors performed a container check (e.g., swelling, leakage and deformation) on the following containers:

- Turbine Equipment Sealand
- Reactor Building Equipment Sealand
- Torus Filters Sealand
- B-25 Box Containing Contaminated Hoses
- B-25 Box Containing Condensate Storage Tank Equipment
- Sealand for Shipment of Rolls-Royce Equipment DM-19-142

Radioactive Waste System Walkdown (IP Section 02.02) (1 Sample)

The inspectors evaluated the following radioactive waste processing systems and processes during plant walkdowns:

- (1) Liquid or Solid Radioactive Waste Processing Systems
 - Advance Liquid Processing System (ALPS) Radwaste Area 517'
 - Dry Active Waste (DAW) Processing at Radwaste Barreling Area 519'

Radioactive Waste Resin and/or Sludge Discharges Processes

- Sluicing of Resin Bed from ALPS Filter Tanks at 517' to a High Integrity Container (HIC) in the Radwaste Building 519'

Waste Characterization and Classification (IP Section 02.03) (1 Sample)

The inspectors evaluated the radioactive waste characterization and classification for the following waste streams:

- (1)
 - 2019 DAW -10CFR61 Database Analysis
 - 2019 Unit-2/3 Condensate Resin 10CFR61 Analysis

Shipment Preparation (IP Section 02.04) (1 Sample)

The inspectors evaluated and observed the following radioactive material shipment preparation processes:

- (1) DM-19-142; Rolls Royce Equipment to Roll-Royce Nuclear Field Service, UN3321, Low Specific Activity (LSA-II)

Shipping Records (IP Section 02.05) (1 Sample)

The inspectors evaluated the following non-excepted package shipment records:

- (1)
 - DM-19-142; UN3321, Radioactive Material, Low Specific Activity (LSA-II), 7; to Rolls Royce Nuclear Services
 - DW-18-012; UN3321, Radioactive Material, LSA-II, 7; U-1 Dry Active Waste (DAW) to Energy Solution's Bear Creek Facility
 - DW-19-019; UN3321, Radioactive Material, LSA-II, 7; Sludge from B-Max Waste to Energy Solution's Bear Creek Facility
 - DW-19-030; UN3321, Radioactive Material, LSA-II, 7; U-2/3 DAW to Energy Solution's Bear Creek Facility
 - DM-19-021; UN2915, Radioactive Material, Type-A Package, 7; Shepherd Seal Source (A1 Special Form) in a Type-A Drum to J.L. Shepherd Facility
 - DW-19-009; UN3321, Radioactive Material, LSA-II, 7; U-2/3 DAW to Energy Solution's Bear Creek facility

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 2, October 1, 2018 – September 30, 2019
- (2) Unit 3, October 1, 2018 – September 30, 2019

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 2, October 1, 2018 - September 30, 2019
- (2) Unit 3, October 1, 2018 - September 30, 2019

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the fire protection program implementation during the last year that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

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

- (1) Non-Cited Violation for Security Equipment Loss of Power as documented in Inspection Report 05000237/2019411; 0500249/2019411 (ML19339D759 issued December 5, 2019)

71153 - Followup of Events and Notices of Enforcement Discretion

Event Followup (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated 2D3 high pressure feedwater heater leak repair and licensee's response on November 19 - 22, 2019
- (2) The inspectors evaluated Unit 2 downpower and drywell entry for identifying/correcting increasing unidentified reactor coolant system leakage and licensee's response on December 9, 2019

INSPECTION RESULTS

Failure to Identify and Control Hot Work			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Initiating Events	Green NCV 05000237/2019004-01 Open/Closed	[H.2] - Field Presence	71111.05Q
The inspectors identified a Green finding and associated non-cited violation (NCV) of Technical Specification 5.4.1.c, for the licensee's failure to establish, implement, and maintain Fire Protection Program procedures which ensure fire prevention for hot work. Specifically, the licensee failed to follow OP-AA-201-004, "Fire Prevention for Hot Work," Revision 16, which stated before hot work is permitted a hot work permit shall be posted at the job site, a designated fire watch established, and fire extinguisher readily available to the designated fire watch.			
<u>Description:</u> On November 6, 2019, during the Unit 2 refueling outage (Reactor in Mode 5), the inspectors observed contract pipe-fitters performing grinding work, using a flapper wheel, which resulted in visible sparks inside the drywell. The two workers were preparing to install small bore piping for the 2A Reactor Recirculating pump nozzles. The inspectors were unable to locate a hot work permit, fire watch, or fire extinguisher in the work area. The inspectors asked one			

of the workers if he was the fire watch and if there was a fire extinguisher available for the hot work. The worker replied he was not the fire watch and that hot work had not yet started. The inspectors informed the workers that visible sparks are considered hot work. While one continued with the grinding, the other worker searched the work area for a fire extinguisher and then exited the drywell to continue searching for a fire extinguisher. After approximately 10 minutes, the inspectors exited the drywell and again informed the worker that grinding was still occurring without a hot work permit present, a fire watch, or a fire extinguisher. At this time, the worker returned to the work area and informed the other individual to stop the job.

The inspectors reviewed several of the licensee's fire protection implementation procedures including OP-AA-201-004, "Fire Prevention for Hot Work," Revision 16 and CC-AA-501-1027, "Hot Work Precautions and Safety Practices," Revision 2. These procedures outline the site's policies regarding the proper control of hot work. Procedure OP-AA-201-004, Section 2.3 defined, in part, "Hot Work" as work activities that involve welding, cutting, grinding and open flame operations that are capable of initiating fires or explosions. Section 4.1.9 stated, in part, that "an operable Exelon fire extinguisher appropriate for the class of fire that could occur shall be available and conveniently located in the work area." Section 4.2.4 stated, "a designated fire watch is required during the performance of all hot work operations governed by this procedure." Section 4.2.7 stated, "The fire watch shall be aware of the location of fixed fire extinguisher(s) in the area and visually observe the fixed extinguisher to confirm that it appears to be in good condition prior to starting the hot work activity...or have an additional Exelon fire extinguisher that is appropriate for the hazard readily available." Section 4.3.1 stated, "An authorized hot work permit is required before any hot work operation is started within the protected area and the permit must be properly filled out and posted at the job site before the operation commences." In addition, procedure CC-AA-501-1027, Section 2.2 defines "Hot Work" as "all processes that use or created an arc, flame, spark, or intense heat. These includes welding, cutting, gouging, grinding, and open flame operations."

Based on their review, the inspectors determined the work performed met the definition of "hot work" and needed to be controlled under the site's requirements for such work. Specifically, the licensee did not have a hot work permit posted at the job site, no designated fire watch, and no fire extinguisher readily available.

Corrective Actions: In response to the inspectors' observation, the workers stopped the grinding activities and licensee managers met with the crew. Licensee managers informed the workers they should have stopped when they started producing sparks, acquired a fire extinguisher, established a fire watch, signed into their hot work permit, and then continued work. In addition, the licensee performed a Work Group Evaluation.

Corrective Action References: AR 4295218, "Visible Sparks During 2A RR Pump Bowl Piping."

Performance Assessment:

Performance Deficiency: The inspectors determined the licensee's failure to follow fire protection program implementing procedures regarding fire prevention for hot work was contrary to Technical Specification 5.4.1.c, which required that written procedures covering Fire Protection Program implementation, be established, implemented, and maintained and was a performance deficiency. Specifically, the licensee failed to follow OP-AA-201-004, "Fire Prevention for Hot Work," Revision 16, which stated before hot work is permitted a hot work permit shall be posted at the job site, a designated fire watch established, and fire extinguisher readily available to the designated fire watch.

Screening: The inspectors determined the performance deficiency was more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, failing to comply with fire protection procedure requirements while performing hot work (e.g. without a designated fire watch and fire extinguisher) increases the fire hazards to the plant by delaying the time it would take to identify and mitigate a potential fire resulting from the hot work.

Significance: The inspectors assessed the significance of the finding using Appendix G, "Shutdown Safety SDP." Specifically, the inspectors determined this finding was of very low safety significance (Green) because the performance deficiency was not expected to increase the likelihood of a fire that would cause a Shutdown Initiating Event, as defined in IMC 0609 Appendix G. This was determined based on the specific work being performed and the very limited combustibles observed in the work area.

Cross-Cutting Aspect: H.2 - Field Presence: Leaders are commonly seen in the work areas of the plant observing, coaching, and reinforcing standards and expectations. Deviations from standards and expectations are corrected promptly. Senior managers ensure supervisory and management oversight of work activities, including contractors and supplemental personnel. Specifically, the licensee's lack of field presence during the contractors grinding prevented them from promptly correcting the expectations for hot work.

Enforcement:

Violation: Technical Specification 5.4.1.c, "Procedures," requires, in part, that written procedures shall be established, implemented, and maintained covering the following activities: Fire Protection Program Implementation.

Procedure CC-CC-211, "Fire Protection Program," Revision 8, described the site's Fire Protection Program. Section 4.8.1 designated procedure OP-AA-201-004 as the administrative positive control process over hot work (via a permit system).

Procedure OP-AA-201-004, "Fire Prevention for Hot Work," Revision 17:

Section 2.3 defined, in part, "Hot Work" as work activities that involve welding, cutting, grinding and open flame operations that are capable of initiating fires or explosions.

Section 4.1.9 required, in part, that an operable Exelon fire extinguisher appropriate for the class of fire that could occur shall be available and conveniently located in the work area.

Section 4.2.4 stated, in part, that a designated Fire Watch is required during the performance of all hot work operations governed by this procedure.

Section 4.3.1 stated, an authorized Hot Work Permit is required before any hot work operation is started within the protected area and inside any building located outside the protected area unless the location is a Designated Hot Work Area. The permit must be properly filled out and posted at the job site before the operation commences.

Contrary to the above, on November 6, 2019, the licensee failed to implement procedures covering activities regarding the Fire Protection Program implementation. Specifically, the licensee failed to follow the requirements of procedure OP-AA-201-004. The licensee failed to: (1) realize the grinding work being performed was considered hot work; (2) obtain an

appropriate fire extinguisher; (3) designate a fire watch during the performance of the hot work; and (4) fill and post the Hot Work Permit.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Inaccurate and Incomplete Post Maintenance Testing Documentation for Containment Isolation Valve 2-1301-2

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000237/2019004-02 Open/Closed	[P.1] - Identification	71111.19

On November 12, 2019, the inspectors identified a Green finding and associated NCV when the licensee failed to have acceptance criteria for testing containment isolation valves per Technical Specification Surveillance Requirement 3.6.1.3.5, in accordance with 10 CFR 50, Appendix B, Criterion V, and identify and document the action taken in regard to a deficiency in a quality record in accordance with 10 CFR 50, Appendix B, Criterion XVII.

Description:

On October 28, 2019, per the licensee's motor operated valve test program, an as-found diagnostic test was performed (Work Order 01693537-01, D2 3RFL Com MOV Elect Insp & Diagnostic Testing 2-1301-2) on an isolation condenser containment isolation valve 2-1301-2 and the work order documentation stated that the valve passed the test. The licensee was also required to do an internal inspection of the valve actuator and found some degradation. The licensee repaired the degradation and performed another as left diagnostic test (WO 01742662-09, MOV 2-1301-2 Stem Scoring Nut Rust) on November 9, 2018, which the work order documentation stated was acceptable. However, the valve failed to operate from the control room and additional maintenance was performed. The licensee performed post-maintenance testing on the 2-1301-2 on November 12, 2019, which consisted of closing the valve from the control room.

On November 12, 2019, the inspectors observed the post-maintenance testing of primary containment isolation valve 2-1301-2. During the test the licensee timed the valve closure in accordance with DOS 1300-02, Isolation Condenser Valve Operability Check, Revision 21, Step I.5, which was labeled as acceptance criteria within the procedure. The inspectors questioned against what criteria the closure time of the valve was to be compared against to determine operability. The licensee responded that the station was no longer required to time motor operated valves and that valve closure was sufficient to determine operability. The inspectors questioned how the licensee met Technical Specification Surveillance Requirement 3.6.1.3.5, which required the verification that the isolation time of each primary containment isolation valve was within limits. The licensee responded that the Technical Specification Surveillance Requirement was met when the valves were timed during diagnostic testing required by the motor operated valve test program requirements. The inspectors reviewed the as-found diagnostic testing work order performed on October 28, 2019, and the as left diagnostic testing work order performed on November 9, 2019, for the 2-1301-2 valve. The valve was timed during the diagnostic test but the inspectors thought there was no quantitative or qualitative acceptance criteria in the work order documentation.

The inspectors met with members of the licensee's engineering staff on November 21, 2019. The licensee's staff pointed out there was a line in the as-found work order documentation that stated that the maximum valve closure time was 22.84 seconds and that this was the acceptance criteria. The inspectors pointed out that the actual valve closure time was 28.6 seconds and that the work order documentation stated that the valve passed the test even though the test documentation showed otherwise. The licensee stated that they were aware of this discrepancy at the time of the as-found test and had evaluated the results and later determined the test result was satisfactory. The licensee stated that the 22.84 second acceptance criteria was incorrect and should have been much closer to the actual 28 second closure time. The inspectors asked if this evaluation was documented in a corrective action document or in the work order documentation that the inspectors were not aware of. The licensee stated that the evaluation determination was not documented in the work orders. The inspectors pointed out the as-found test was performed 12 days before the as-left test and the discrepancy with incorrect acceptance criteria still existed in the as-left test documentation and had not been corrected. Quantitative acceptance criteria for timing of primary containment isolation valves was located in Appendix A of the Technical Requirements Manual which was not referenced in the work order. However, since the valve closure limit time was 45 seconds as listed in Appendix A of the Technical Requirements Manual and the valve closed in about 28 seconds the inspectors had no concern with the operability of the valve.

Corrective Actions: The licensee planned to ensure actions were in place to revise the MOV work orders instructions to document results, ensure accurate acceptance criteria, require written resolution or create a corrective action document for deficiencies, and reference Technical Specification and Technical Requirements Manual requirements. An extent of condition review for similar deficiencies was planned.

Corrective Action References: AR 4299125, MOV Stroke Time Documentation Issue
AR 4300288, NRC Quality Assurance of MOV Work Orders
AR 4301626, MOV 2-1301-2 Documentation Inquiry
AR 4299431, MOV Program Improvements Resulting from IR 4299125

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's work orders that covered the testing of valve 2-1301-2 required by Technical Specification Surveillance Requirement 3.6.1.3.5 to verify that the closure time of primary containment isolation valves were within limits did not have appropriate acceptance criteria. Procedures that affect quality were required to contain appropriate acceptance criteria in accordance with 10 CFR 50, Appendix B, Criterion V. Valve 2-1301-2 was a safety-related valve and Technical Specification Surveillance Requirement 3.6.1.3.5 was an activity that affected quality. The valve was returned to service and both the work orders were closed without any documentation of the action taken in connection with the deficiency associated with the acceptance criteria as required by 10 CFR 50, Appendix B, Criterion XVII. This was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Procedure Quality attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to have appropriate acceptance criteria in

technical specification surveillance test procedures impacted the procedure quality attribute to ensure the valve worked properly in service.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding did not constitute an actual open pathway in the physical integrity of the reactor containment and there are no hydrogen ignitors at Dresden so therefore the finding screened as Green.

Cross-Cutting Aspect: P.1 - Identification: The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, had the workers identified that the incorrect acceptance criteria was a problem and addressed the issue in the work order documentation this violation would not have occurred.

Enforcement:

Violation: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, required that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVII, Quality Assurance Records, required, in part, that sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include the action taken in connection with any deficiencies noted.

The licensee established Work Orders 01693537-01 and 01742662-09 as the implementing procedures for verifying the closing time of containment isolation valve 2-1301-2 in accordance with Technical Specification Surveillance Requirement 3.6.1.3.5, an activity affecting quality.

Contrary to the above,

A. On October 28, and November 9, 2019, the licensee conducted motor operated valve diagnostic testing on safety-related valve 2-1301-2, an isolation condenser primary containment isolation valve, an activity affecting quality, with Work Orders 01693537-01 and 01742662-09 that did not include appropriate acceptance criteria. The acceptance criteria listed in the Work Orders was inaccurate, causing the documentation to show that the valve failed the timing test.

B. On November 12, 2019, both work orders 01693537-01 and 01742662-09 contained information indicating the tests performed were unsatisfactory in that the time required for the valve to close was deficient in that it did not meet the acceptance criteria given. The valve was returned to service and both the work orders were closed without any documentation of the action taken in connection with the deficiency associated with the acceptance criteria still in the work order.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to have Appropriate Installation Procedure for Relief Valve 2-4899-72			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000237/2019004-03 Open/Closed	[H.9] - Training	71111.19
<p>On November 14, 2019, a self-revealed Green finding and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when the licensee failed to have an appropriate procedure for the installation of the Unit 2 containment cooling heat exchanger shell side relief valve.</p> <p><u>Description:</u></p> <p>On November 13, 2019, while Unit 2 was in Mode 2, torus level lowered to -6.16" resulting in the licensee entering T.S. 3.6.2.2, Condition A on Suppression Pool Water Level not within limits per DOS 1600-16, Suppression Chamber Water Level Correction. The licensee also entered DEOP 200-01, Primary Containment Control, per DOP 1600-02, Torus Water Level Control, limitations. The operators filled the torus using high pressure coolant injection (HPCI) per DOP 1600-02.</p> <p>On November 14, 2019, the licensee was troubleshooting the emergency core cooling system (ECCS) keep fill system as part of the torus level lowering, and identified the 2A Containment Cooling Heat Exchanger Shell Side Relief Valve (2-4899-72) was open. The licensee reset the valve to the closed position. The relief valve had been replaced in refueling outage D2R26 per Work Order 04709186-01 on November 6, 2019. The inspectors questioned if the relief valve had undergone post-maintenance testing. The licensee responded the valve had been tested on November 11, 2019, and that the testing was considered satisfactory. The inspectors questioned how the relief valve was not reset after the post-maintenance testing. The licensee stated the relief valve has a mechanical gag that can be operated from a lever installed at the top of the valve. Determining whether the valve was open or closed was not part of the post-maintenance testing.</p> <p>The inspectors met with the licensee staff on November 19, 2019. The inspectors asked the licensee if the control room received an alarm for low torus level. The licensee stated the alarm was already lit for other work being done. The inspectors asked the licensee if any of the pumps aligned to the torus would have a potential to vortex. The licensee pointed out based on the recorded level, the vortex limit was not expected to occur. The inspectors also asked about the operability of the ECCS systems. The licensee stated there were no loss of safety function due to the HPCI turbine exhaust remaining covered as well as the relief valve quenchers remaining covered. The licensee also pointed out that HPCI was not required to be operable until reactor pressure reaches 150 psig and the reactor had been at 0 psig so based on this information as well, the licensee observed that all safety functions had been met for the ECCS systems.</p> <p>Corrective Actions: The licensee closed relief valve 2-4899-72. The licensee planned to perform a Corrective Action Program Evaluation (CAPE) and generate corrective actions from the results.</p>			

Corrective Action References: AR 4297084, DEOP 200-01 Entry for Low Torus Water Level AR 4297420, Relief Valve 2-4899-72 Identified to be Lifted AR 4303551, 4.0 Critique - Unplanned Entry into TS 3.6.2.2 & DEOP 200-1

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee's work order for installation of relief valve 2-4899-72, a safety-related component, did not contain appropriate instructions for installation. The licensee's failure to have appropriate work instructions for verifying the relief valve was installed in the correct position was contrary to the requirements of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Specifically, the work order failed to have instructions to verify the relief valve was closed after its installation. This was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, this condition resulted in the inoperability of the suppression pool which is the safety source of water for ECCS systems.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Specifically, the finding did not constitute an actual loss of probable risk assessment functionality for the suppression pool and ECCS systems, and therefore screens to Green.

Cross-Cutting Aspect: H.9 - Training: The organization provides training and ensures knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values. Specifically, the workers installing relief valve 2-4899-72 did not have the knowledge to recognize the valve was open, and that the relief valve was installed in the incorrect configuration.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances and be accomplished in accordance with these procedures.

The licensee established Work Order 04709186-01 as the implementing procedure for installing relief valve 2-4899-72, an activity affecting quality.

Contrary to the above, from November 6 to November 14, 2019, the licensee failed to have a procedure appropriate for the circumstances for the installation of relief valve 2-4899-72, a safety-related component. Specifically, the work order did not have a step to verify relief valve 2-4899-72 was installed in the correct position.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Survey for Work Conducted in a High Radiation Area			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000249,05000237/2019004-04 Open/Closed	[H.14] - Conservative Bias	71124.01
<p>A self-revealed finding of very low safety significance (i.e., Green) and an associated non-cited violation (NCV) of 10 CFR 20.1501 (a)(1) "Surveys and Monitoring, General" was identified by inspectors when the licensee did not make surveys to assure compliance with 10 CFR 20.1601 (a)(3), which requires positive control for entries into areas where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. Specifically, the licensee failed to survey all accessible areas in the Unit 2/3 Radwaste 507' Basement Barreling Area and did not provide positive controls for all individuals that entered the room. Consequently, an individual encountered elevated dose rates in an area that had not been previously surveyed following a change of radiological conditions.</p>			
<p><u>Description:</u></p> <p>On October 21, 2019, three individuals accompanied by a Radiation Protection Technician (RPT) entered the Unit 2/3 Radwaste Basement Barreling Area to complete hydrolasing work that was being conducted in support of the installation of the new Advanced Liquid Processing Station at Dresden Station. During the initial attempt to complete the task, the individuals involved with the work experienced issues with the hydrolasing equipment which caused the individuals and the RPT to exit the Unit 2/3 Radwaste Basement Barreling Area to troubleshoot the issue. During the troubleshooting session, it was decided that the individuals would use a drain port that was in a back corridor of the Radwaste Barreling Area to drain excess water from the hydrolasing equipment that was causing the issues with the task. Access to that area was not included in the original scope of the work activity. The troubleshooting session also involved discussions around how transient conditions existed in the back corridor due to a previous resin transfer that had occurred in the area.</p> <p>The individuals returned to the Radwaste Barreling Area with a different RPT than who initially covered the job. Before the work resumed, the RPT surveyed the area of the back corridor that contained the drain port only. This survey revealed conditions that were less than 20 mrem/hour general area. When the work was resumed, the individuals began taking turns proceeding to the back corridor to place the excess water into the drain port. While traveling to the back corridor to empty the water in the drain port, one of the individuals heard a loud sound in the opposite direction of the drain port when they entered the corridor. The individual felt that this sound may be result of the issues that the work crew had been experiencing with the hydrolasing equipment and took 2 steps in this direction (to the left) to investigate this noise. The individual then received an electronic dosimeter dose rate alarm of 567 mrem/hour. When RP became aware of elevated dose rates, an RPT measured dose rates that ranged from 400 mrem/hour to 2500 mrem/hour at 30 centimeters from the source of radiation (resin transfer piping) that was unknown yet accessible to workers in the area without barricades to prevent authorized access.</p> <p>Corrective Actions: When the licensee became aware of elevated dose rates due to the electronic dose rate alarm that was received by an individual conducting work in the area, an</p>			

RPT was sent to the Unit 2/3 Radwaste Barreling Area to perform follow-up surveys. The survey results revealed dose rates that ranged from 400 mrem/hour to 2500 mrem/hour at 30 centimeters from the source of radiation (resin transfer piping). The licensee also conducted interviews with all involved parties to gain further insights into the cause of the event and to aide in creating an operating experience tool for future reference. Supervisors were also required to observe high radiation area briefings and to periodically shadow technicians in the field while taking radiation surveys.

Corrective Action References: AR 4290588, "Dose Rate Alarm While Working in the Radwaste Basement"

Performance Assessment:

Performance Deficiency: The licensee did not make surveys (as required by 10 CFR 20.1501 (a)(1)) to assure compliance with 10 CFR 20.1601 (a)(3), which requires positive control for entries into areas where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. Specifically, the licensee failed to survey all accessible areas in the Unit 2/3 Radwaste 507' Basement Barreling Area and did not provide positive controls for all individuals that entered the room. Consequently, an individual encountered elevated dose rates in an area that had not been previously surveyed following a change of radiological conditions.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Program & Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, the licensee did not make surveys (as required by 10 CFR 20.1501 (a)(1)) to assure compliance with 10 CFR 20.1601 (a)(3) which requires positive control for entries into areas where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. The licensee failed to survey all accessible areas in the Unit 2/3 Radwaste 507' Basement Barreling Area and did not provide positive controls for all individuals that entered the room. Consequently, an individual encountered elevated dose rates in an area that had not been previously surveyed following a change of radiological conditions.

Significance: The inspectors assessed the significance of the finding using Appendix C, "Occupational Radiation Safety SDP." The inspectors determined that the finding was of very low safety significance (i.e., Green) because: (1) it did not involve as-low-as reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised.

Cross-Cutting Aspect: H.14 - Conservative Bias: Individuals use decision making-practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop. Specifically, the licensee determined that the RP staff knew that a resin transfer had occurred within the area in question and failed to perform a radiation survey. The decision to not survey the area after a resin transfer had occurred was deemed to be non-conservative. Consequently, this led to individuals entering an area where dose rates were not known and/or established.

Enforcement:

Violation: Title 10 CFR 20.1501 (a)(1) requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

Contrary to the above, on October 21 2019, the licensee did not make surveys to assure compliance with 10 CFR 20.1601 (a)(3), which requires positive control for entries into areas where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. Specifically, the licensee failed to survey all accessible areas in the Unit 2/3 Radwaste 507' Barrel Area Basement and did not provide positive controls for all individuals that entered the room. Consequently, an individual encountered elevated dose rates in an area that had not been previously surveyed following a change of radiological conditions.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Positively Control a Door That Granted Access to a High Radiation Area

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Occupational Radiation Safety	Green NCV 05000237/2019004-05 Open/Closed	[H.8] - Procedure Adherence	71124.01

A self-revealed finding of very low safety significance (i.e. Green) and an associated non-cited violation (NCV) of 10 CFR 20.1601 (a)(3) was identified by inspectors when the licensee failed to lock and demonstrate positive control over a door that is the access point to an area having general area dose rates of approximately 3000 mrem/hour at 30 cm from the radiation source.

Description:

On October 29, 2019, the licensee continued to conduct piping modification work in the Unit 2 Reactor Building Equipment Drain Tank Room (RBEDT Room). At the end of the shift, the workers and the RP technician responsible for covering the job exited the area, but the RP Technician failed to have another technician verify that the door leading into the Unit 2 RBEDT Room had been locked and secured. The RP Technician then performed shift turnover with the new RP Technician that would be covering the job on the next shift. When the new RP Technician approached the door with the new work crew, a member of the work crew pointed out to the RP Technician that the door did not appear to be locked. The RP Technician verified this claim, and the door was unlocked. The RP Technician immediately entered the area to verify that no individuals were currently in the room and to perform follow up surveys to verify if conditions in the room had changed. Conditions in the room were unchanged and were consistent with the initial survey data that showed the Tank in the Unit 2 RBEDT Room having dose rates of 5000 mrem/hour on contact, and 3000 mrem/hour at 30 centimeters from the radiation source. After the survey, the RP Technician did not allow the

new shift work in the room to begin. The RP Technician immediately reported the event to their supervisor, and the Radiation Protection Manager was also notified. The site performed a stand down of work activities in the area until the prompt investigation of the event was completed. The investigation revealed that the failure to verify that the door had been locked at the end of the previous shift was the primary cause for this event.

Corrective Actions: The licensee initiated a high radiation area (HRA) door verification practice that involved supervisors verifying that HRA doors were secured and locked after technicians had verified that the doors were secured and locked also. The licensee also verified that all HRA doors at the facility were secured and locked regardless of if the room had been accessed during this time frame. The licensee also placed door guards at the Unit 2 RBEDT Room until the job was completed, and also notified the NRC Resident Inspection staff and Regional Inspector.

Corrective Action References: AR 4292469, "U2 REBT Room Door Left Unsecured"

Performance Assessment:

Performance Deficiency: The licensee failed to lock and demonstrate positive control over a door that is the access point to an area where an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source. The area had been posted as an HRA and controlled by a locked door in accordance with 10 CFR 20.1601 (a)(3). General Area dose rates were measured up to 3 Rem/hour.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Program & Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Specifically, the failure to lock and demonstrate positive control over a door that is the access point to an HRA could have led to an individual being exposed to dose rates that were greater than or equal to 3 Rem (30 mSv) at 30 centimeters from the radiation source.

Significance: The inspectors assessed the significance of the finding using Appendix C, "Occupational Radiation Safety SDP." The inspectors determined that the finding was of very low safety significance (i.e., Green) because: (1) it did not involve as-low-as reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised.

Cross-Cutting Aspect: H.8 - Procedure Adherence: Individuals follow processes, procedures, and work instructions. Specifically, the licensee determined that the RP Technician's failure to verify that the Unit 2 RBEDT Room was locked and secured which is required by procedure was the cause of the event.

Enforcement:

Violation: Title 10 CFR 20.1601(a) requires, with exceptions not applicable here, that the licensee ensure that each entrance to a high radiation area has one or more of the following features: (1) a control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep-dose equivalent of 0.1 rem in 1 hour at 30 centimeters from the radiation source or from any surface that the

radiation penetrates; (2) a control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or (3) entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry. Title 10 CFR 20.1601(b) provides that, in place of the controls required by 10 CFR 20.1601(a) for a high radiation area, a licensee may substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

Contrary to the above, as of October 29, 2019, the entrance to the Unit 2 Reactor Building Equipment Drain Tank Room, a high radiation area with a radiation dose rate of approximately 3000 millirem in 1 hour at 30 centimeters from the radiation source, was not controlled by any methods described in 10 CFR 20.1601 (a) or (b).

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Observation: Semiannual Trend Review	71152
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The NRC and Illinois Emergency Management Agency (IEMA) inspector have noticed what appears to be an adverse trend in the area of fire protection program implementation during the last year (calendar year 2019). There were various issue reports (IRs) documented in the corrective action program system addressing fire protection related deficiencies. In addition, there appeared to be an increasing number of these items being identified by external parties (NRC, IEMA and Exelon corporate Nuclear Oversight). For the purposes of a simple comparison, a comparable time frame was searched in the CAP. The search focused on items related to inoperable or degraded fire equipment or program implementation issues (e.g. fire doors, fire risk assessment, transient combustibles, and intervening combustibles). This cursory search found the following:

From 6/1/18 to 12/31/18

Two NRC/IEMA-identified issues (IRs 4167042 and 4206398)
 Four licensee-identified issues (IRs 4156094, 4188719, 4188731 and 4200212)

From 6/1/19 to 12/19/19

Nine NRC/IEMA-identified issues (IRs 4259040, 4260129, 4271776, 4273498, 4274824, 4291271, 4292782, 4295069 and 4295218)
 Nine licensee-identified issues (IRs 4268037, 4269072, 4281360, 4290524, 4290768, 4294704, 4295095, 4295198 and 4299099)

Inspectors noted, not only the increasing number of identified items, but also the increase in number and percentage of items identified by NRC and IEMA. In addition, the inspectors noted the majority of the items identified by NRC and IEMA were in areas typically traversed by plant personnel.

An additional search of the CAP over the last year (keywords "fire"; "TRM 3.7.n"; "hotwork"; "transient combustibles") noted the following number of IRs documenting issues related to:

- 16 - Fire Door Deficiencies
- 28 - Fire protection pipping/component leaks, degradation or issues
- 2 - Transient combustibles
- 14 - Fire Protection Procedures or fire report deficiencies
- 14 - Fire Alarm Issues (not counting valid actuation)

- 8 - Fire Extinguisher / Fire Hoses deficiencies
- 5 - Fire Wraps or Barriers deficiencies (other than doors)
- 4 - Hot Work issues

It was important to note these searches were not meant to be exhaustive, but done for the purpose of highlighting what appeared to be an emerging adverse trend. The reasons for this trend have not been determined, however, over the last year the NRC and licensee have identified adverse trends regarding procedure use/adherence and human performance in other areas. It is worth mentioning that the licensee's corporate office noticed a trend in the last few weeks of 2019 regarding support workers performance and fire protection across multiple sites, including Dresden Station. This was documented in corporate IR 04304700.

Based on a review of the available information, and in accordance with our inspection and documentation procedures, the inspectors did not identify any findings or violations of more than minor significance, except for one example. The issue of concern described under IR 4295218, "NRC Id'd - Visible Sparks During 2A RR Pump Bowl Piping," was evaluated by the resident inspectors and determined to result in a Green finding with an associated non-cited violation. The details of this finding are documented in this report under Section 71111.05Q, "Failure to Identify and Control How Work."

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On January 10, 2020, the inspectors presented the integrated inspection results to Mr. P. Karaba, Site Vice President and other members of the licensee staff.
- On November 6, 2019, the inspectors presented the D2R26 ISI exit meeting inspection results to Mr. P. Karaba, Site Vice President and other members of the licensee staff.
- On November 22, 2019, the inspectors presented the Radiation Protection Inspection Results inspection results to Mr. P. Karaba, Site Vice President and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	4290477	Heating Boiler Schedule Gaps	10/23/2019
		4298569	Ops Crew 1 Clock Reset - Heating Steam Leaks	11/18/2019
		4299671	DOA 5700-01 Entry	11/25/2019
		4299678	2/3A Heating Boiler Local Low Level Alarm Will Not Clear	11/25/2019
	Corrective Action Documents Resulting from Inspection	4301697	NRC Requests 12/04/19 Shift 2	12/04/2019
		4303211	NRC Request 2/3 Cribhouse Windows DOA 5700-01	12/04/2019
	Procedures	DOA 5700-01	Loss of Heating Boilers	26
		DOS 0010-19	Preparation for Cold Weather Operations for Unit 1 & Out Buildings	45
		DOS 0010-19	Checklist 1 Preparation for Cold Weather	45
		DOS 0010-22	Preparation for Cold Weather Operations for Unit 2	26
		DOS 0010-25	Preparation for Cold Weather Operations for Unit 3	23
		DOS 0010-31	Preparation for Cold Weather Operations at the Lift Station, Goose Lake Pump Station, Security Diesel Building, and Cooling Towers	20
	Work Orders	04883155-01	Preparation for Cold Weather for Unit 2	10/25/2019
		04883211-01	Prepare for Cold Weather Unit 1	10/25/2019
		04883215-01	Preparation for Cold Weather Chges For R/W	10/25/2019
		048833219-01	Preparation for Cold Weather for Unit 3	10/25/2019
		04891989-01	Prepare Out Bldgs for Cold Weather for Lift Attion	10/24/2019
71111.04Q	Corrective Action Documents	4297625	3D3 Heater Steam Leak	11/15/2019
	Drawings	205LN001-001	Shutdown Cooling System	04
		233LN001-001	Fuel Pool Cooling (FPC) System	04
		M-31	Diagram of Fuel Pool Cooling Piping	BT
	Procedures	DOP 1000-M1	Unit 2 Shutdown Cooling System Checklist	09
		DOP 10000-03	Shutdown Cooling Mode of Operation	82
		DOP 1900-E1	Fuel Pool Cooling Electrical	01
DOP 1900-M1		Unit 2 Fuel Pool Cooling System Checklist	17	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		DOP 6400-10	Removing/Restoring Transformer 22(32) For Outage Maintenance	17
		DOP 6400-14	TR 86 Load Tap Changer Operation	17
		DOP 6400-15	TR 32 Load Tap Changer Operation	18
		DOP 6500-08	Bus 24-1 to Bus 34-1 Tie Breaker Operation	25
		DOP 6500-30	Bus 23-1 to Bus 33-1 Tie Breaker Operation	16
		DOS 1000-02	Alternate Decay Heat Removal Using Shutdown Cooling and Fuel Pool Cooling	20
71111.05Q	Corrective Action Documents	4035503	2/3 Diesel Fir Pump Local Tachometer Failed PMT	07/26/2017
		4159567	2/3 DFP Tachometer Not Accurate	07/27/2018
	Corrective Action Documents Resulting from Inspection	4301893	2/3 - 3903 DGCWP / NRC Request for Info	12/05/2019
		4304481	NRC ID: Fire Protection Report Requires Clarification	12/16/2019
	Drawings	12E-2096C	Electrical Installation Cribhouse Partial Plans and Sections, Elevation 490'8"	G
		F-220, Sht 4	Fire Wrap - Cribhouse - Partial Plan & Sections, Elev. 490'8"	E
	Fire Plans	FZ 1.2.2	Unit 2 Drywell Primary Containment, Elev. 517'	2
		FZ 8.2.5A	Unit 2 H. P. Heaters/Steam Lines Elevation 517'	3
		FZ 8.2.5B	Unit 2 Low Pressure Heater Bays, Elevation 517'	2
	Procedures	DAN 923-1 G-4	U2/3 Diesel Fire PP Running	05
		DFPS 4123-05	2/3 Diesel Fire Pump Operability	56
		DFPS 4123-15	Returning 2/3 Diesel Fire Pump to Standby Following Start	03
71111.06	Corrective Action Documents	0120311	Unit 2 & 3 EDGCW Pump Submersibility Qualification	08/22/2002
	Corrective Action Documents Resulting from Inspection	4301697	NRC Requests 12/04/19 Shift 2	12/04/2019
		4301893	2/3 - 3903 DGCWP / NRC Request for Info	12/05/2019
		4302085	NRC Questions Consistency of Harsh Environment Definition	12/06/2019
	Engineering Changes	338567	Install Water Tight Seals Around Power Cables for the 2-3903 DGCW Pump	00
		338568	Install Water Tight Seals Around Power Cables for the 2-3903 DGCW Pump	00

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		338569	Install Water Tight Seals Around Power Cables For the 3-3903 DGCW Pump	00
		623268	Revise Flood Elevation Action Level in UFSAR, TRM and DOA 0010-04	000
	Miscellaneous	Binder #: D1528	Crane-Chempump Diesel Generator Cooling Water Pump	004
		Crane Chempump Series G	Instruction Manual	n/a
	Procedures	CC-AA-203	Environmental Qualification Program	14
		DES 6600-08	Diesel Generator Electrical Maintenance Surveillance Inspection	43
71111.08G	Corrective Action Documents	2017-6960	Dresden U2 Weld Overlay Drawing	11/12/2017
		4070767	Indications Found in Reactor Head Flange Weld	11/03/2017
		4071740	D2R25 -UT Indication -N20A Nozzle Weld 6	11/07/2017
		4074270	Nozzle N20A Repair Plan Requires Revision	11/13/2017
		4075547	NRC Relief Request for U2 Weld Overlay	11/16/2017
	NDE Reports	D2R25-APR-05	UT Examination Summary Sheet	11/12/2017
		D2R25-UT-030	UT Calibration/Examination	11/06/2017
		D2R25-UT-034	UT Calibration/Examination	11/06/2017
		D2R26-UT-005	UT Calibration/Examination	10/30/2019
		D2R26-UT-006	UT Calibration/Examination	10/30/2019
		D2R26-UT-008	UT Calibration/Examination	11/01/2019
		D2R26-UT-009	UT Calibration/Examination	11/01/2019
		D2R26-UT-010	UT Calibration/Examination	11/01/2019
	Procedures	ER-AA-335-003	Magnetic Particle Examination	9
		GEH-PDI-UT-2	PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds	12
		GEH-PDI-UT-3	PDI Generic Procedure for Ultrasonic Through Wall Sizing in Piping Welds	6
		GEH-UT-717	Procedure for the Examination of Reactor Pressure Vessel Welds from the Inside Surface with MICROTOMO in Accordance with Appendix VIII	4
		GEH-UT-737	Procedure for the Examination of Reactor Pressure Vessel	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Welds from the Inside Surface with the Z-Scan UT System in Accordance with Appendix VIII	
	Work Orders	4709411	Perform Weld Overlay on Unit 2 N20A Nozzle Weld Joint N20A-6	11/17/2017
71111.11Q	Corrective Action Documents	4292191	4.0 Critique - U2 Shutdown for D2R26	10/28/2019
		4292642	RTD Thermal Couple and Shackle Became Dislodged in RPV	10/30/2019
		4293035	Fuel Moves Stopped / RFB Comes in Contact with Camera Cable	10/30/2019
	Procedures	DGP 01-01	Unit Startup	197
		DGP 01-S1	Start-up Checklist	102
		DGP 01-S5	Mode 3 to Mode 2 Restart Checklist	26
		DGP 02-01	Unit Shutdown	171
		DGP 03-04	Control Rod Movements	77
		DOP 0500-06	Planned Movement of the Reactor Mode Switch	18
		DOP 10000-03	Shutdown Cooling Mode of Operation	82
DOP 1900-03	Reactor Cavity, Dryer/Separator Storage Pit and Fuel Pool Level Control	57		
71111.12	Corrective Action Documents	4269595	Unexpected Alarm - U2 Fuel Pool CH B Rad Hi	08/05/2019
		4269595	Unexpected Alarm - U2 Fuel Pool CH B RAD Hi	08/05/2019
		4269595-10	Review GE Reuter Stokes Failure Analysis Results	09/30/2019
		4269595-11	Revise WGE Based on the GE Reuter Stokes Failure	10/23/2019
		4273817	SPC4246346-19: 3-1705-16B Failure Analysis Results	08/22/2019
		4276469	Unexpected Alarm - U3 Fuel Pool CH A Rad Hi	09/03/2019
		4300107	Unexpected Alarm: 902-3 B-1 Refuel Floor RAD-Hi	11/26/2019
		4300120	Unexpected Alarm, Area Rad Monitor Downscale	11/26/2019
	Procedures	ER-AA-310-1002	Maintenance Rule Function Safety Significance Determination	3
Work Orders	04768029-03	Perform Vibration Analysis on 2-0302-3B CRD Pump	11/15/2019	
71111.13	Corrective Action Documents Resulting from Inspection	4295069	NRC ID'D Procedure Revision Required For Fire Risk Procedure	11/06/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Miscellaneous		Protected Equipment Lists for Unit 2 and Unit 3 Risk Significant Systems	
	Procedures	DOP 6500-08	Bus 24-1 to Bus 34-1 Tie Breaker Operation	25
		DOP 6500-14	Returning 4KV Bus 24-1 to Operation After Maintenance/Testing	08
		DOP 6500-15	Removing 4KV Buss 33-1 From operation for Maintenance/Testing	10
		DOP 6500-16	Returning 4KV Buss 33-1 to Operation After Maintenance	09
		DOP 6500-30	Bus 23-1 to Bus 33-1 Tie Breaker Operation	16
		DOS 6600-06	Bus Undervoltage and ECCS [emergency core cooling system] Integrated Functional Test For Unit 2/3 Diesel Generator to Unit 2	61
		OP-AA-108-117	Protected Equipment Program	5
OP-DR-201-012-1001	Dresden On-Line Fire Risk Management	6		
71111.15	Corrective Action Documents	4270543	Dresden OPEX Review for QDC IR 4266776	08/08/2019
		4270543	Dresden OPEX Review for QDC IR 4266776	08/08/2019
		4280928	DPIS will not Trip	09/20/2019
		4280928	DPIC will not Trip	09/20/2019
		4282612	Enhance DSSPs to Prevent Potential Spurious HPCI Actuation	09/26/2019
		4282612	Enhance DSSPs to Prevent Potential Spurious HPCI Actuation	09/26/2019
		4290427	Historical Operability Review for DPIS 3-0261-35C	10/23/2019
		4291863	MSIV 2-203-1A Needs Timing Adjustment	10/28/2019
		4291864	MSIV 2-203-1C Needs Timing Adjustment	10/28/2019
		4291865	MSIV 2-203-1D Needs Timing Adjustment	10/28/2019
		4291868	MSIV 2-203-2B Needs Timing Adjustment	10/28/2019
		4291993	Part 21 EMD Fuel Injector - Seized Plunger and Bushing	10/28/2019
		4292440	D2R26 LLRT FW 0220-62A Failed, Added Scope	10/29/2019
		4292595	D2R26 2C MSIV - Water Intrusion Misc EOC	10/29/2019
		4292986	DR26 2-0261-35B DPIS Not Zeroed Out	10/30/2019
4293026	1C MSIV Actuator is Leaking By Internally	10/31/2019		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4293026	1C MSIV Actuator Is Leaking By Internally	10/31/2019
		4294831	D2R26 Scope Addition 2-1201-2 Actuator Needs to be Rebuilt	11/05/2019
		QDC IR 4266776	HPCI not Disabled for Fire Areas TB-III and TB-1	09/26/2019
	Drawings	ISI-105	Inservice Inspection Class 1 Isolation Condenser Piping	H
		ISI-111	Inservice Inspection Class 1 High Pressure Coolant Injection Piping	F
		ISI-122	Inservice Inspection Class 1 High Pressure Coolant Injection Piping	G
		M-310	Instrument Installation Details Unit 2	05/25/1968
	Miscellaneous	OPXR 4259869-14 (QDC)	QDC IR 4266776 - HPCI not Disabled for Fire Areas	09/26/2019
	Procedures	DSSP 0100-A1	Hot Shutdown Procedure - Path A1	40
		DSSP 0100-A2/B2	Hot Shutdown Procedure - Path A2/B2	42
		DSSP 0100-B1	Hot Shutdown Procedure - Path B1	40
		DSSP 0100-CR	Hot Shutdown Procedure - Control Room Evacuation	51
		DSSP 0100-E/F	Hot Shutdown Procedure - Path E/F	04
	Work Orders	00457621	Perform Testing Following DPIS 3-0261-35C Replacement	09/21/2019
71111.18	Engineering Changes	620175	HPCI Injection MOV 2-2301-8 Closure Control Modification From Torque Switch Close to Limit Switch Close	001
	Work Orders	01693630-01	D2 5RFL Com MOV Elect Insp & Diagnostic Testing 2-2301-8	11/03/2019
		04726346-01	24M/RFL TS HPCI Motor Operated Valve Operability Surv	11/13/2019
		04797506-18	HPCI PMTS Prior to Startup	11/13/2019
71111.19	Corrective Action Documents	4296162	Cannot Full Stroke The 2-1301-2 Valve From the MCR	11/10/2019
		4297084	DEOP 200-01 Entry for Low Torus Water Level	11/13/2019
		4297420	Relief Valve 2-4899-72 Identified to be Lifted	11/14/2019
		4303551	4.0 Critique - Unplanned Entry into TS 3.6.2.2 & DEOP 200-1	12/13/2019
	Miscellaneous		White Paper to Answer NRC Questions	11/19/2019
		193133013202	U2 ISO COND RX OUTLET ISO (MOV Diagnostic Test Data)	11/09/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Procedures	DMP 0202-01	Recirculation Pump Seal Replacement and Pump Leak Test	36
		DOS 0700-03	SRM Detector Position Rod Block Functional Test	21
		DOS 0700-12	Determining Source Range Monitor Signal to Noise Ratio and Minimum SRM Count Rate	02
		DOS 1300-02	Isolation Condenser Valve Operability Check	21
		DOS 1600-18	Cold Shutdown Valve Testing	50
	Work Orders	01286811-01	D2 5RFL Solenoid Valve 2-302-20A	11/01/2019
		01310540-01	D2 5RFL PM Repl Solenoid Valve 2-302-20B	11/01/2019
		01487915-01	4RFL PM COM MOV Elec Insp & Diagnostic Test 2-1501-22A	10/31/2019
		01704408-01	2B Replace 2B RR Pump Mech Seal with New N-7500 STY	11/12/2019
		04590899-01	4 RFL Com MOV Electrical Insp & Diagnostic Test 2-1501-21A	11/02/2019
		04708044-01	D2 24M/RFL TS Mode Switch in S/D Scram Func Test	11/11/2019
		04709186-01	CM to Replace LPCI/CCSW Heat Exchanger Relief Valve	11/06/2019
		04709880-01	D2 rFL PM CRD 2B Gear Unit Change Oil/Take Oil Sample	11/07/2019
		04741694-03	U2 Hydrostatic Leak Test - 2RC01 Class 1 W/D	11/14/2019
		04768029-01	Replace 2B CRD Pump Motor (2-0302-3B)	11/11/2019
		04771815	59" MSIV Key Interlock Bypass Test	11/09/2019
		04797506-18	HPCI PMTS Required for Mode 2	11/15/2019
		04797506-20	LPCI Div 1 PMTs Required for Mode 2	11/11/2019
		04797506-28	Reactor Recirc PMTS Required for Mode 2	11/14/2019
		04856283-01	D2R26 CRD System	11/14/2019
71111.20	Corrective Action Documents	4289667	Apparent EMD WHR Violations	10/18/2019
		4292191	4.0-Critique - U2 Shutdown for D2R26	10/28/2019
		4292538	SRM 22 Has Increasing Count Rate Trend	10/29/2019
		4292561	FME on U2 RPV Steam Dryer	10/30/2019
		4292594	SRM Bypassed and INOP	10/30/2019
		4293016	Historical FME Discovered on Jet Pump 18- Vessel Side	10/31/2019
		4293614	D2R26 Feed Water Check Valve 2-0220-62A Failed LLRT	11/01/2019
		4293954	Unit 2 HPCI AOP Failed to Stay Running	11/02/2019
		4294290	D2R26 AF LLRT 1601-23 & 62 Test Volume Over Warning Limit	11/04/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4294413	D2R26 Torus and Centipede Coating Inspection Results	11/01/2019
		4294422	D2R26 Drywell Protective Coating Inspection Results	10/30/2019
		4295192	Fatigue Assessment	11/06/2019
		4295435	Snubber 2-0201B-17 Failed Operational Test D2R26	11/07/2019
		4295529	Whole Body Counts for Potential Internal Contamination	11/07/2019
		4295928	SRM 22 Identified to be Leaking	11/08/20219
		4296041	D2R26 Full Core Sipping Results	11/09/2019
		4297084	DEOP 200-01 Entry for Low Torus Water Level	11/13/2019
	Drawings	27100LN001-001a	Off Gas	08
	Miscellaneous	0710-80-0033	Flowserve Technical Notes, N-Seal Operation at Low System Pressures	December 2007
		Tagout Walkdown	02-02-ERVS-001	
		Tagout Walkdown	02-54-TRAPSV-001	
		Tagout Walkdown	02-54-OFFGAS-001	
		Tagout Walkdown	02-23-HPICISTM-001	
		Tagout Walkdown	02-32-2ARFPMN-001	
	Procedures	DFP 0800-01	Master Refueling Procedure	51
		DFP 0800-07	Fuel Movements During Refueling Operations	40
		DGP 02-02	Reactor Vessel Slow Fill	49
		DGP 04-01	Fuel Moves and Refueling	39
		DMP 5800-18	Load Handling of Heavy Loads and Lifting Devices	30
		DOP 1600-22	Drywell Entry (Initial, Following Closeout, or At Power	28
		DOP 1900-03	Reactor Cavity, Dryer/Separator Storage Pit and Fuel Pool Level Control	57
		LS-AA-119	Fatigue Management and Work Hour Limits	13
		MA-AA-716-008	Foreign Material Exclusion Program	14
		MA-AA-716-008-1008	Reactor Services, Refuel Floor FME Plan	16
	Work Orders	04713223-02	RFL Reactor Vessel and Cavity Level Instrumentation	10/21/2019
	71111.22	Corrective Action Documents	4284229	Delayed Alarm During DIS 1500-05
	Drawings	239LN001-001	Main Steam System	00

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
		DRE204LN001-001	Reactor Water Clean-Up System and Instrumentation	06	
		M-12	Diagram of Main Steam Piping	ABT	
	Procedures	DAN 902(3)-5 H-8	Panel 2202-70A(B) Trouble	09	
		DGP 02-03	Reactor Scram	115	
		DIS 0263-08	Unit 2 ATWS RPT/ARI Logic System Functional Test	22	
		DIS 1500-05	Division I & II Low Pressure Coolant Injection ECCS Initiation Circuitry Logic Functional Test	36	
		DOS 7000-01	Local Leak Rate Testing of Main Steam Isolation Valves (Dry Tests)	09	
		DOS 7000-02	Local Leak Rate Testing of Main Steam Isolation Valves (Wet Tests)	05	
		DOS 7000-08	Local Leak Rate Testing of Primary Containment Isolation Valves	14	
		DOS 7000-18	Local Leak Rate Testing of Unit 2(3) Reactor Water Cleanup (RWCU) System Valves	06	
		Work Orders	01906071-01	D2 48M/2RFL TS Bus 23-1 UV and ECCS Integrated Func Tests	11/06/2019
	04701722		D2 24M TS Division I & II LPCI Injection ECCS Initiation Circuitry LSFT	10/02/2019	
	04710348		Clean Up MO Valve Operability and IST Timing	11/13/2019	
	04711479		D2 TS LLRT MSIV 203-1C & 203-2C Dry Test	10/28/2019	
	04711480		D2 TS LLRT MSIV 203-1D & 203-2D Dry Test	10/28/2019	
	04711481		D2 TS LLRT MSIV 203-1A & 203-2A Dry Test	10/28/2019	
	04716605-01		As Found LLRT per RWCU MOVs per DOS 7000-18	10/30/2019	
	04718556		D2 24M/RFL TS ATWS RPT/ARI Logic System Functional Test	11/06/2019	
	71124.01	Corrective Action Documents	04797506-29	RWCU PMTS Required for Mode 2	11/09/2019
			2019-056888	B SJAE Room	10/28/2019
4294554			AR 04294554	11/03/2019	
4295116			Dose Alarm Received Providing Oversight in the 2B SJAE	11/06/2019	
4299113		Radiation Protection Improvement Plan	11/21/2019		
Corrective Action	4298840	NRC ID: NISP-RP-003 Paperwork not Found or	11/20/2019		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
	Documents Resulting from Inspection		Documented		
		4299123	NRC ID- Inconsistency in Use of RP-AA-460-002	11/21/2019	
		4299139	NRC ID - Documentation Discrepancy During Review	11/21/2019	
	Procedures	NISP-RP-005	Access Controls for High Radiation Areas	1	
	Radiation Surveys	2019-053762	2/3 Radiation 507' Barrel Area Basement	09/27/2019	
		2019-056188	2/3 Radwaste 507' Barrel Area Basement	10/22/2019	
		2019-056853	Reactor Building Equipment Drain Tank Room	10/28/2019	
		2019-056862	U2 Drywell 515' General Area	10/28/2019	
		2019-057152	2/3 Radwaste 507' Barrel Area Basement	10/30/2019	
	Radiation Work Permits (RWPs)	2019-057198	Reactor Equipment Drain Tank Room	10/30/2019	
		DR-0-19-00233	2019 Radwaste Concentrator Maintenance	0	
	71124.02	Radiation Work Permits (RWPs)	DR-2-19-00333	2019 Unit 2 Floor Drain System Activities	1
			DR-2-19-00548	D2R26 Dry Well Reactor Water Clean UP 1201-1 Valve Repairs	1
71124.08	Engineering Evaluations	14-210 and 14-215H Cask	Conformance of Energy Solutions 14-215H Cask with Specifications for DOT 7A, Type A Packaging	4	
	Miscellaneous	14-210 and 14-215H	Safety Analysis Report for 14-210 and 14-215 Packaging	1	
		2019 Unit-2/3 Condensate Resin	2019 Unit-2/3 Condensate Resin Sample Validation	11/05/2019	
		DAW D2R26-2019	2019 DAW-10CFR61 Database Analysis -2019 DAW Average Ave in Radman WMG Program	11/08/2019	
		FO-OP-023-161024	Dewatering Completion Record on Liner PL8-120FR Liner Serial Number 689557-19	10/18/2019	
	Procedures	CS-OP-PR-104	Energy Solutions; Operation of the Energy Solutions Demand Advance Liquid Processing System (ALPS)	2	
		FO-OP-023-161024	Energy Solutions: Waste Transfer and Bead Resin/Activated Carbon Dewatering Procedure for Energy Solutions 14-215 or Smaller Liners at Dresden Station	3	
		RP-AA-602	Packaging of Radioactive Material Shipments	21	
	Shipping Records	DM-19-021	UN2915, Radioactive Material, Type-A Package, 7; Shepherd Seal Source (A1 Special Form) in a Type-A Drum	08/20/2019	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			to J.L. Shepherd Facility	
		DM-19-142	UN3321, Radioactive Material, Low Specific Activity (LSA-II), 7; to Rolls Royce Nuclear Services	11/15/2019
		DW-18-012	UN3321, Radioactive material, LSA-II, 7; U-1 Dry Active Waste (DAW) to Energy Solution's Bear Creek Facility, TN	07/25/2018
		DW-19-009	UN3321, Radioactive Material, LSA-II, 7; Unit-2/3 DAW to Energy Solution's Bear Creek Facility, TN	03/27/2019
		DW-19-019	UN3321, Radioactive Material, LSA-II, 7; Sludge from B-Max Waste to Energy Solution's Bear Creek Facility, TN	09/06/2019
		DW-19-030	UN3321, Radioactive Material, LSA-II, 7; U-2/3 DAW to Energy Solution's Bear Creek Facility, TN	10/24/2019
71151	Corrective Action Documents	4304564	Incorrect Calculation of Unidentified and Total Leakage Rate	12/17/2019
	Corrective Action Documents Resulting from Inspection	4303649	NRC Asked Question Regarding Leakrate Reporting	12/13/2019
	Miscellaneous	LS-AA-2090	Monthly Data Elements for NRC Reactor Coolant System (RCS) Specific Activity (10/01/2018 - 09/30/2019)	4
	Procedures	DOP 2000-24, Appendix A	Unit Daily Surveillance Log, Attachment A	142
71152	Corrective Action Documents	4156094	RB 545 Centerline Fire Door Inop	07/16/2018
		4206398	U3 EDG Room Door Will Not Close and Latch on Its Own	12/28/2018
		4236627	ESOMS Hot Work Permit Does Not Match Att. 2 of OP-AA-201-004	04/05/2019
		4258569	Declining Trend in Procedure Use & Adherence	06/21/2019
		4259040	Fire Door 67 Inop - Not Consistently Latching	06/24/2019
		4271776	Contingency Fire Hoses Staged for CO Were Out of Date	08/09/2019
		4273498	Trans. Combustibles Below U3 W LPCI Stairs - IEMA Identified	08/20/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		4274824	IEMA ID: Issues During Walkdown in Turbine Building	08/27/2019
		4284652	Consider Cleaning Dirty Smoke Detectors	10/03/2019
		4284987	NOS ID ESOMS Hot Work Permit Does Not match	10/04/2019
		4284991	Independent Critique Report Not Retained	10/03/2019
		4292782	IEMA Questions 4kv X-tie	10/30/2019
		4304700	Corp Ops ID's Adverse Trend Supp Worker Perf Fire Protection	12/17/2019
	Corrective Action Documents Resulting from Inspection	4295069	NRC ID'd Procedure Revision Required for Fire Risk Procedure	11/05/2019
		4295218	NRC ID'd - Visible Sparks During 2A RR Pump Bowl Piping	11/06/2019
		4309162	IR Miscoded as NCAP for Potential Regulatory Impact	01/09/2020
71153	Corrective Action Documents	4298330	High Pressure Feedwater Heater Extent of Condition	11/19/2019
		4298508	IEMA Questions on 2D3 & 3D3 FWH Leak Repairs	11/18/2019
		4298831	NRC Request for Information	11/20/2019
		4298915	2D3 FWH Extraction MOV Leakby	11/21/2019
		4301802	NDE-UT Results for HP FW Htr. Extent of Condition	12/05/2019
		4301894	4.0 Critique for 2D3 FW Heater Restoration	11/30/2019
		4302516	Leakage From Pipe Cap Downstream of 2-0220-63B/64B	12/09/2019
		4304585	4.0 Critique U2 Downpower Performed 12/09/19 - 12/10/19	12/09/2019
	Corrective Action Documents Resulting from Inspection	4302546	NRC - Question Regarding Visitor Control	12/09/2019
	Drawings	260000-001	Feedwater Heating Flow Paths	02
Procedures	SY-AA-101-117	Processing and Escorting of Personnel and Vehicles	31	