



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

July 10, 2018

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

SUBJECT: BRAIDWOOD NUCLEAR GENERATING STATION, UNITS 1 AND 2—NRC
TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000456/2018013;
05000457/2018013

Dear Mr. Hanson:

On June 8, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed a Triennial Fire Protection inspection at your Braidwood Nuclear Generating Station, Units 1 and 2. The NRC inspectors discussed the results of this inspection with Mrs. A. Ferko and other members of your staff. The results of this inspection are documented in the enclosed report.

Based on the results of this inspection, NRC inspectors did not identify any findings or violations 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/

Robert C. Daley, Chief
Engineering Branch 3
Division of Reactor Safety

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure:
IR 05000456/2018013; 05000457/2018013

cc: Distribution via LISTSERV®

Letter to Bryan C. Hanson from Robert C. Daley dated July 10, 2018

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TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000456/2018013;
05000457/2018013

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Numbers: 50-456; 50-457; 72-073

License Numbers: NPF-72; NPF-77

Report Numbers: 05000456/20180013; 05000457/20180013

Enterprise Identifier: I-2018-013-0001

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Nuclear Generating Station, Units 1 and 2

Location: Braceville, IL

Dates: May 7, 2018, through June 8, 2018

Inspectors: A. Shaikh, Senior Inspector (Lead)
B. Jose, Senior Inspector
G. Hausman, Senior Inspector

Approved by: R. Daley, Chief
Branch EB3
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a Triennial Fire Protection at Braidwood Nuclear Generating Station 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. Licensee-identified non-cited violations are documented under inspection results.

List of Findings and Violations

No findings or violations were identified

Additional Tracking Items

None

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 2515, "Light-Water Reactor Inspection Program - Operations Phase." 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

71111.05T—Fire Protection—(Triennial)

The inspectors evaluated the following from May 7, 2018, through June 8, 2018.

Fire Protection Inspection Requirements (3 Samples)

The inspectors evaluated Fire Protection Program implementation in the following selected areas:

- (1) Fire Area 11.4C-0, Radwaste and Remote Shutdown Control Panel Room
- (2) Fire Area 5.2-1, Division 11 Engineered Safety Feature Switchgear Room
- (3) Fire Area 5.2-2, Division 21 Engineered Safety Feature Switchgear Room

B.5.b Inspection Activities (2 Samples)

The inspectors evaluated feasibility of the following B.5.b Mitigating Strategies:

- (1) Makeup to Refueling Water Storage Tank
- (2) Spent Fuel Pool Spray—External Strategy

INSPECTION RESULTS

71111.05T—Fire Protection—(Triennial)

No findings or violations were identified

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 June 8, 2018 the inspectors presented the Triennial Fire Protection inspection results to Mrs. A. Ferko and other members of the licensee staff.

DOCUMENTS REVIEWED

- BRW-97-0339-M; Braidwood Control Room Heat Up Evaluation; Revision 3
- BRW-11-0119E; Multiple Spurious Operation Technical Evaluation; Revision 1
- IR 04140755; 2018 NRC FP Triennial Inspection—FPR References Update; 05/24/2018
- IR 00235431; Consider Testing of Remote Shutdown Panel Switches; 07/12/2004
- IR 00241151; Need ECR for Reset Point for 1/2PSL-IA009; 08/03/2004
- IR 02597947; NOS ID: Implementation of Testing for RSP Components; 12/09/2015
- IR 04038523; Box 8 On 2PMO5J Will Not Test; 08/02/2017
- AR 02499179; The Installed Relay has the Wrong Coil Voltage Rating; 05/11/2015
- AR 02512046; FP Zone 2D-36 Locked in Alarm; 06/09/2015
- AR 02548227; Recurrence of Spurious Alarm in Zone 1D-67; 08/29/2015
- 0BwOA PRI-5; Control Room Inaccessibility Unit 0; Revision 101
- 0BwOS PL-R2; Remote Shutdown Panel Control Switch Functional Check (PW Pumps); Revision 0
- 1BwOA PRI-5; Control Room Inaccessibility Unit 1; Revision 109
- 1BwOS PL-R2-AB; Remote Shutdown Panel Control Switch Functional Check (AB XFER Pump); Revision 0
- 1BwOS PL-R2-CC; Remote Shutdown Panel Control Switch Functional Check (CC Pumps); Revision 0
- 1BwOS PL-R2-CV.1; Remote Shutdown Panel Control Switch Functional Check (CV Pumps); Revision 1
- 1BwOS PL-R2-MS.2; Remote Shutdown Panel Control Switch Functional Check (PORVs); Revision 0
- 1BwOS PL-R2-RY; Remote Shutdown Panel Control Switch Functional Check (RY Heaters); Revision 0
- 1BwOS PL-R2-SX; Remote Shutdown Panel Control Switch Functional Check (SX Pumps); Revision 0
- 1BwOSR 5.5.8.AF-2A; Unit One Train 'A' Auxiliary Feedwater Valves Indication Test Surveillance; Revision 17
- 2BwOA PRI-5; Control Room Inaccessibility Unit 2; Revision 106
- 2BwOS PL-R2-AB; Remote Shutdown Panel Control Switch Functional Check (AB XFER Pump); Revision 0
- 2BwOS PL-R2-CC; Remote Shutdown Panel Control Switch Functional Check (CC Pumps); Revision 0
- 2BwOS PL-R2-CV.1; Remote Shutdown Panel Control Switch Functional Check (CV Pumps); Revision 0
- 2BwOS PL-R2-MS.2; Remote Shutdown Panel Control Switch Functional Check (PORVs); Revision 0
- 2BwOS PL-R2-RY; Remote Shutdown Panel Control Switch Functional Check (RY Heaters); Revision 0
- 2BwOS PL-R2-SX; Remote Shutdown Panel Control Switch Functional Check (SX Pumps); Revision 0
- 2BwOSR 5.5.8.AF-2B; Unit Two Train B Auxiliary Feedwater Valves Indication Test Surveillance; Revision 17
- BwOP VC-1; Shutdown of Control Room HVAC System; Revision 11
- BwOP VC-2; Startup of Control Room HVAC System; Revision 14
- BwOP VP-5; Reactor Containment Fan Cooler Start-Up; Revision 58
- BwOP VP-6; Reactor Containment Fan Cooler Shutdown; Revision 57
- BwAR 0-37-A4; Alarm No: 0-37-A4; Revision 16
- EDMG 4; External Spent Fuel Pool Spray Strategy; Revision 3

- EDMG 1; Extensive Damage Mitigation Guideline; Revision 8
- 00455864 01; Unit 1 1PSL-IA009 Remote Shutdown Control Panel IA Header Pressure Switch; 08/23/2004
- 01044558 01; Unit 1 1PSL-IA009 Remote Shutdown Control Panel IA Header Pressure Switch; 01/09/2009
- 01504332 01; Unit 1 1PSL-IA009 Remote Shutdown Control Panel IA Header Pressure Switch; 08/06/2014
- 01741169 01; Unit 2 Remote Shutdown Panel Control Power Check; 10/21/2015
- 01824974 01; Unit 1 Remote Shutdown Panel Control Power Check; 10/24/2016
- 01872317 01; Unit 2 Remote Shutdown Panel Control Power Check; 05/18/2017
- 04680419; Unit 2 Remote Shutdown Panel Control Power Check (PMID/RQ 54750-01; Partial Performance To Verify Box 8 Annunciator Window Lights); 08/02/2017
- 04711799 01; Unit 0 Operations Abnormal Procedures Local Equipment Check Quarterly Surveillance; 02/09/2018
- 04756762 01; Unit 1 Remote Shutdown Instrumentation Monthly Surveillance; 04/06/2018
- 04756766 01; Unit 2 Remote Shutdown Instrumentation Monthly Surveillance; 04/13/2018
- 20E-0-3672; Cable Pans Routing Aux Building; Revision K
- 20E-0-3361 CT1; Conduit Tabulation Aux Building; Revision AD
- 20E-0-3361; Electrical Installation Aux. Building; Revision DK
- 20E-1-4111D; External Wiring Diagram, Process I & C Rack Channel 4; Revision Y
- 20E-1-4108E; Internal/External Wiring Diagram, Safety Valve Room; Revision 1
- 20E-1-4086; Elevation, Remote Shutdown Panel; Revision W
- 20E-1-4006A; Key Diagram, 4160V ESF SWGR Bus 141; Revision 1
- 20E-1-4610A; Elevation, 4160V SWGR Bus 141; Revision 1
- 20E-1-4007A; Key Diagram, 480V ESF Substation Bus 131X; Revision M
- 20E-2-4006A; Key Diagram, 4160V ESF SWGR Bus 241; Revision F
- 20E-2-4610A; Elevation, 4160V SWGR Bus 241; Revision G
- 20E-2-4007A; Key Diagram 480V ESF Substation Bus 231X; Revision K