



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

February 13, 2019

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2
EVALUATIONS OF CHANGES, TESTS, AND EXPERIMENTS
INSPECTION REPORT 05000254/2019010 AND 05000265/2019010

Dear Mr. Hanson:

On January 18, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Quad Cities Nuclear Power Station, Units 1 and 2, and discussed the results of this inspection with Mr. Hal Dodd and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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

Sincerely,

/RA/

Robert C. Daley, Chief
Engineering Branch 3

Docket Nos.: 05000254 and 05000265
License Nos.: DPR-29 and DPR-30

Enclosure:
IR 05000254/2019010; 05000265/2019010

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ROPreports.Resource@nrc.gov

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

Docket Number(s): 05000254 and 05000265

License Number(s): DPR-29 and DPR-30

Report Number(s): 05000254/2019010 and 05000265/2019010

Enterprise Identifier: I-2019-010-0035

Licensee: Exelon Generation Company, LLC

Facility: Quad Cities Nuclear Power Station, Units 1 and 2

Location: Cordova, IL

Inspection Dates: January 14, 2019 to January 18, 2019

Inspectors: M. Domke, Reactor Inspector
I. Hafeez, Reactor Inspector
A. Shaikh, Senior Reactor Inspector

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

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a Evaluations of Changes, Tests, and Experiments inspection at Quad Cities Nuclear Power Station, Units 1 and 2, 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.

No findings or violations were identified.

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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 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

71111.17T - Evaluations of Changes, Tests, and Experiments

02.01 Sample Selection (29 Samples)

The inspectors evaluated the following:

- (1) QC-S-2016-0028; TSI –Bypass Unit 1 Turbine Rotor Expansion
- (2) QC-E-2017-001; Updated QDC Dose Calculations to Increase the Core Average Exposure (CAVEX) Limit
- (3) QC-S-2016-0043; Install Jumper Around Unit 1 Non-Essential 250VDC Battery Cell 45
- (4) QC-S-2016-0031; Return 2-4601 Service Air Compressor to Original Design and Incorporate Vendor (NEAC) Recommended Upgrades
- (5) QC-S-2016-0036; Unit 1 Containment Coatings Condition and Deferral of Inspection
- (6) QC-S-2017-0025; RHR Pump/Loop Operability Test
- (7) QC-S-2017-0026; Removing the Actuator from the 1-5772-32A Damper and Gagging the Damper in the Open or Closed Position
- (8) QC-S-2017-0029; Update Procedures and Calculation QDC-1000-M-0131 for Unit 0 DGCW Upper Flow Limit
- (9) QC-S-2017-0053; Return 1-3999-56 to Normal Open Position by Installing a Disc Lifting Gag to Mitigate Stem-Disc Separation Problem
- (10) QC-S-2017-0079; Replace SBLC Tank Heater Controller TIC 1(2)-1154
- (11) QC-S-2018-0038; Diesel Generator Cooling Water Pump Flow Rate Test
- (12) QC-S-2017-0002; 345KV Switchyard Line L0401 System 1 Relay Protection Upgrade
- (13) QC-S-2017-0007; Temp Power For HRSS Valves 1-8941-727/728/729/701 During Q1R24
- (14) QC-S-2017-0008; Provide Temp Power Feed To U1 TB Lighting During Q1R24 When Bus 15 is OOS
- (15) QC-S-2017-0010; Reactor Recirc Pump Motor Lube Oil Level Indication-Unit 1
- (16) QC-S-2017-0011; Provide Temp Power For EDG Equipment Associated with Bus 15 OOS
- (17) QC-S-2017-0014; 345KV Bus Tie (BT) 3-4 Gas Circuit Breaker (GCB) Replacement
- (18) QC-S-2017-0022; Perform Field Mod of HU-1 for 2nd Harmonic Restraint From 15% to 7.5%
- (19) QC-S-2017-0022; Operation of Transformer Severon Monitors for Maintenance
- (20) QC-S-2017-0033; Temporarily Isolate Turbine Bearing #* Deluge Detector to Remove Ground Fault Alarm
- (21) QC-S-2017-0059; Reactor Recirc Pump Motor Lube Oil Level Indication-Unit 2

- (22) QC-S-2018-0015; 345KV Switchyard Line L0404 MOD and Stability Scheme Upgrade
- (23) QC-E-2017-002; Perform 50.59 Evaluation of UFSAR Change in Accordance with Recommendation of IR 01418982
- (24) QC-S-2016-0029; H2 Area Leak Detectors Set Point Change
- (25) QC-S-2016-0030; Structural Analysis of the Quad Cities Low Profile Transporter
- (26) QC-S-2017-0089; Lifting Devices for the 2B Core Spray Motor Replacement
- (27) QC-S--2017-0078; Perform Field MODs of HU-1 Relays for 2nd Harmonic Restraint From 15% to 7.5%
- (28) QC-S-2016-0042; Revise Outdated UFSAR Description of Reactor Building Penetration Seal Material
- (29) QC-S-2018-0046; Technical Support Center (TSC) HVAC Upgrade

INSPECTION RESULTS

No findings of significance were identified.

EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On January 18, 2019, the inspector presented the Evaluations of Changes, Tests, and Experiments inspection results to Mr. Hal Dodd and other members of the licensee staff.

DOCUMENTS REVIEWED

- QC-S-2016-0028; TSI –Bypass Unit 1 Turbine Rotor Expansion; Revision 0
- QC-S-2016-0031; Return 2-4601 Service Air Compressor to Original Design and Incorporate Vendor (NEAC) Recommended Upgrades; Revision 0
- QC-S-2016-0036; Unit 1 Containment Coatings Condition and Deferral of Inspection; Revision 0
- QC-S-2017-0025; RHR Pump/Loop Operability Test; Revision 0
- QC-S-2017-0026; Removing the Actuator from the 1-5772-32A Damper and Gagging the Damper in the Open or Closed Position; Revision 0
- QC-S-2017-0029; Update Procedures and Calculation QDC-1000-M-0131 for Unit 0 DGCW Upper Flow Limit; Revision 0
- QC-S-2017-0053; Return 1-3999-56 to Normal Open Position by Installing a Disc Lifting Gag to Mitigate Stem-Disc Separation Problem; Revision 0
- QC-S-2017-0079; Replace SBLC Tank Heater Controller TIC 1(2)-1154; Revision 0
- QC-S-2018-0038; Diesel Generator Cooling Water Pump Flow Rate Test; Revision 0
- ECR 428527; Provide Input to Procedure Change on QCOS 1000-06; 04/11/2017
- ECR 48466; Develop Suction Head Pressure/Cavitation Limit for QCOS 1000-06; 02/25/1998
- ECR 436259; Document the Basis for Moving the QCOS 6600-06 DGWP NPSH Limit; 07/31/2018
- EC 404993; Updated QDC Dose Calculations to Increase the Core Average Exposure (CAVEX) Limit
- EC 619709; Return 1-3999-56 Valve to Normal Open Position by Installing a Disc Lifting Gag to Mitigate Stem Disc Separation Problem; 08/02/2017

- EC 406699; Unit 1 Containment Coatings Condition and Deferral of Inspection; 10/06/2016
- ER-AA-330-008; Exelon Safety-Related (Service Level I) Protective Coatings; Revision 12
- ER-QC-330-1000; Primary Containment and Coatings Inspection; Revision 7
- QDC-1000-M-0131; NPSH Availability vs. Requirements for DGCW and RHRSW Pumps; Revision 4
- CWE097.0200.40; Base Suppression Pool Level Required for Proper Operation of the RHR/LPCI and Core Spray Pumps During Plant Cold Shutdown and Refueling Conditions; Revision 0
- CWE097.0200.41; Minimum Suppression Pool Water Level Required During Cold Shutdown and Refueling Conditions; Revision 0
- IR 4036334; NOS ID: 50.59 Screening Weaknesses Noted; 07/27/2017
- IR 4158916; EO ID: 1-4601-B, Service Air Compressor Leak; 07/26/2018
- QC-S-2016-0043; Install Jumper Around Unit 1 Non-Essential 250VDC Battery Cell 45; Revision 0
- QC-S-2017-0002; 345KV Switchyard Line L0401 System 1 Relay Protection Upgrade; Revision 0
- QC-S-2017-0007; Temp Power For HRSS Valves 1-8941-727/728/729/701 During Q1R24; Revision 1
- QC-S-2017-0008; Provide Temp Power Feed To U1 TB Lighting During Q1R24 When Bus 15 is OOS; Revision 0
- QC-S-2017-0010; Reactor Recirc Pump Motor Lube Oil Level Indication-Unit 1; Revision 0
- QC-S-2017-0011; Provide Temp Power For EDG Equipment Associated with Bus 15 OOS; Revision 0
- QC-S-2017-0014; 345KV Bus Tie (BT) 3-4 Gas Circuit Breaker (GCB) Replacement; Revision 0
- QC-S-2017-0022; Perform Field Mod of HU-1 for 2nd Harmonic Restraint From 15% to 7.5%; Revision 0
- QC-S-2017-0022; Operation of Transformer Severon Monitors for Maintenance; Revision 0
- QC-S-2017-0033; Temporarily Isolate Turbine Bearing #* Deluge Detector to Remove Ground Fault Alarm; Revision 0
- QC-S-2017-0059; Reactor Recirc Pump Motor Lube Oil Level Indication-Unit 2; Revision 0
- QC-S-2018-0015; 345KV Switchyard Line L0404 MOD and Stability Scheme Upgrade; Revision 1
- IR 02682387; 50.59 Screening Records Retention - Scaffolds > 90 Days; 06/16/2016
- IR 04077416; Obsolete RHR, ADS & CREV Relays Require DCP For Replacement; 11/22/2017
- QC-E-2017-002; Perform 50.59 Evaluation of UFSAR Change in Accordance with Recommendation of IR 01418982
- QC-S-2016-0029; H2 Area Leak Detectors Set Point Change
- QC-S-2016-0030; Structural Analysis of the Quad Cities Low Profile Transporter
- QC-S-2017-0089; Lifting Devices for the 2B Core Spray Motor Replacement
- QC-S--2017-0078; Perform Field MODs of HU-1 Relays for 2nd Harmonic Restraint From 15% to 7.5%

- QC-S-2016-0042; Revise Outdated UFSAR Description of Reactor Building Penetration Seal Material
- QC-S-2018-0046; Technical Support Center (TSC) HVAC Upgrade
- IR02676983; MODA/50.59 CISA DEF – 50.59 Screening Records Retention
- GE-NE-A22-00103-56—01-Q; Appendix R Fire Protection Extended Power Uprate; Revision 0C
- QDC-0030-S-2306; Evaluation of New 5 Ton Trolley Beam and IP Turbine Building Steel at Elevation 611'-6" in Support of the 2B Core Spray Motor Replacement; Revision 9
- EC 395566; Evaluation of GODWIN DPC300 Pump Capacity to Provide Sufficient Makeup Flow to the Ultimate Heat Sink; Revision 1
- QDC-0000-N-1481; Quad Cities Units 1 and 2 Post LOCA EAB, LPZ, and CR Dose – AST Analysis; Revision 2
- HI-2114950; Structural Analysis of the Quad Cities Low Profile Transporter; Revision 001A
- QCAP 1500-02; Administrative Technical Requirements for Non-Functional Safe Shutdown Equipment; Revision 35
- EC 620686; Lifting Devices for the 2B Core Spray Motor Replacement; Revision 1