



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

July 31, 2019

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

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2—INTEGRATED
INSPECTION REPORT 05000254/2019002 AND 05000265/2019002

Dear Mr. Hanson:

On June 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Quad Cities Nuclear Power Station, Units 1 and 2. On July 11, 2019, the NRC inspectors discussed the results of this inspection with Mr. Ken Ohr and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection.

The inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

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/

Kenneth R. Riemer, Chief
Branch 1
Division of Reactor Projects

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

Enclosure:
As stated

cc: Distribution via LISTSERV®

Letter to Bryan Hanson from Kenneth Riemer dated July 31, 2019

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2—INTEGRATED INSPECTION REPORT 05000254/2019002 AND 05000265/2019002

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

Docket Numbers: 05000254 and 05000265

License Numbers: DPR-29 and DPR-30

Report Numbers: 05000254/2019002 and 05000265/2019002

Enterprise Identifier: I-2019-002-0063

Licensee: Exelon Generation Company, LLC

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

Location: Cordova, IL

Inspection Dates: April 01, 2019 to June 30, 2019

Inspectors: J. Cassidy, Senior Health Physicist
G. Edwards, Health Physicist
R. Murray, Senior Resident Inspector
J. Park, Reactor Inspector
C. Phillips, Project Engineer
D. Tesar, Resident Inspector

Approved By: Kenneth R. Riemer, 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 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. Licensee-identified non-cited violations are documented in report sections: 71111.05Q.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000254,05000265/ 2017-002-01	LER 2017-002-01 for Quad Cities Nuclear Power Station, Unit 1, Four Main Steam Isolation Valves (MSIVs) Closure Times Exceeded	71153	Closed
LER	05000254,05000265/ 2018-001-01	LER 2018-001-01 for Quad Cities Nuclear Power Station, Unit 2, Two Main Steam Isolation Valves (MSIVs) Closure Times Exceeded	71153	Closed
LER	05000254,05000265/ 2019-001-00	LER 2019-001-00 for Quad Cities, Unit 1, HPCI System Inoperable Due to Blown Fuse in the Motor Speed Changer Circuit	71153	Closed

PLANT STATUS

Unit 1

The unit began the inspection period shut down for refueling outage Q1R25. Startup on Unit 1 was commenced on April 6, 2019, and the unit was synchronized to the grid on April 7, 2019. The unit reached full rated thermal power on April 9, 2019, where it remained for the entire inspection period with the exception of planned power reductions for turbine testing, control rod pattern adjustments, and other short-term power reductions as requested by the transmission system operator.

Unit 2

The unit began the inspection period at full rated thermal power, where it remained for the entire inspection period, with the exception of short-term power reductions as requested by the transmission system operator.

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 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

External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated readiness to cope with external flooding for the following areas:
 - Units 1 and 2 turbine building during rising Mississippi River levels on April 1, 2019

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

- (1) The inspectors evaluated readiness for seasonal extreme weather (summer/ hot weather) conditions prior to the onset of extreme temperatures for the following systems:
 - transformer cooling, adjustable speed drive cooling, offsite power systems

Summer Readiness Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated summer readiness of offsite and alternate alternating current (AC) power systems on May 10, 2019

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (3 Samples)

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

- (1) Unit 1B core spray during refueling outage Q1R25 on April 1, 2019
- (2) Units 2A and 2B core spray during Unit 2 high pressure coolant injection system maintenance on April 30, 2019
- (3) Unit 1/2 emergency diesel generator during unavailable Unit 1 emergency diesel generator on May 9, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (3 Samples)

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

- (1) Fire zone 1.2.1; Unit 1 reactor building, elevation 544'-0"/666'-6", drywell and drywell expansion gap on April 3, 2019
- (2) Fire zone 11.1.1 A, B, C; Unit 1 turbine building, elevation 547'-0", residual heat removal service water pumps on May 27, 2019
- (3) Fire zone 8.2.8.E; Units 1 and 2 turbine building, elevation 639'-0", main turbine floor (outside shield wall) on June 25, 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 following areas:

- (1) Units 1 and 2 residual heat removal service water vaults on April 29, 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 the Unit 1 start-up from refueling outage Q1R25 on April 6, 2019

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated training scenarios in the simulator on June 24, 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) 345 kV system
- (2) 4kV switchgear

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

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

- (1) Q1R25 outage shutdown safety and Unit 2 online risk the week of April 1, 2019
- (2) repair instrument air leak on containment vent valve on April 16, 2019
- (3) Unit 1B adjustable speed drive (ASD) speed hold and severe weather during week of April 23, 2019
- (4) Work week risk for weeks of May 27 and June 3, 2019
- (5) Emergent work and operational risk activity for repairs on the Unit 1B ASD cooling water leak the week of June 24, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (4 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Issue Report 4238910, "RV 1-1402-28A Set-Point Test Exceeded 10-Year Test Frequency," on April 15, 2019
- (2) Issue Report 4242536, "Unexpected Speed Hold on [1] 'B' ASD," on April 23, 2019
- (3) Issue Report 4236078, "EDG [emergency diesel generator] to ESS [essential service system] BUS Ducts in EQ [environmental qualification] Harsh Zones," on May 8, 2019
- (4) Issue Report 4258635, 'B' CREVS [control room emergency ventilation system] Rough Pre-Filters Installed Backwards," on June 20, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Engineering Change 402298, "U1 Core Spray Pipe Repairs In-Vessel," which performs structural replacement of the P4D weld at the core spray piping downcomer-to-shroud elbow on April 1, 2019
- (2) QOA 4700-06, "Loss of Instrument Air," procedure number 28 on June 16, 2019

71111.19 - Post-Maintenance Testing

Post Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post-maintenance tests:

- (1) Residual heat removal pump/loop operability test following outage on April 1, 2019
- (2) QCOS 0201-08, "Reactor Vessel Class 1 and Associated Class 2 System Leak Test," following refueling outage Q1R25 on April 3, 2019
- (3) QCOS 0250-12, "MSIV (main steam isolation valve) Stroke Test," and QCOS 0250-04, "MSIV Closure Timing Following Q1R25 Maintenance," on April 5, 2019
- (4) Scram Time Testing of Control Rods Following Outage work on April 5, 2019
- (5) Work Order 4877341 (QCOS 5750-04), "Quarterly Testing of Control Room HVAC (heating, ventilation, and air conditioning) System Valves and Dampers," following 'B' Train Control Room Emergency Ventilation Maintenance on April 12, 2019

71111.20 - Refueling and Other Outage Activities

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

- (1) The Inspectors Evaluated Unit 1 Refueling Outage Q1R25 Activities that Continued into the Second Quarter (began on March 18, 2019) and Completed on April 6, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) QCOS 1200-01, "RWCU (reactor water cleanup) Power Operated Valve Testing," on April 1, 2019

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Core Flow Calibration on April 9, 2019

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Division II Emergency Core Cooling System Simulated Auto Initiation With Diesel Auto Start and load on April 3, 2019
- (2) Surveillance Test Interval Change Request QC-18-008: Revised TS [Technical Specification] SR (Surveillance Requirement) for the HPCI (high pressure coolant injection)/RCIC (Reactor Core Isolation Cooling] Low Pressure Flow Rate and RCIC Automatic Initiation Testing from 24-Months to 48-Months, on May 29, 2019

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) Emergency preparedness drill on May 21, 2019

RADIATION SAFETY

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

Calibration and Testing Program (Process & Effluent Monitors) (IP Section 02.02) (1 Sample)

The inspectors reviewed the following gaseous and liquid effluent monitor instrument calibrations and tests:

- (1)
 - Unit 1 Reactor Building Vent Monitor
 - Main Chimney Special Particulate Iodine Noble Gas Monitor
 - Unit 1 Service Water Radiation Monitor
 - Radioactive Waste Liquid Effluent Monitor

Dose Calculations (IP Section 02.05) (1 Sample)

The inspectors reviewed the following to assess public dose:

- (1) The inspectors reviewed the following liquid and gaseous discharge permits to evaluate public dose calculations:
 - Liquid Discharge, Permit Number 2018004
 - Liquid Discharge, Permit Number 2018005
 - Gaseous Discharge, Permit Number 2019199
 - Gaseous Discharge, Permit Number 2019201
 - Gaseous Discharge, Permit Number 2019203

The inspectors reviewed the following annual radiological effluent release reports:

- 2017 Radioactive Effluent Release Report
- 2018 Radioactive Effluent Release Report

The inspectors also reviewed the following abnormal gaseous or liquid tank discharges:

- none were available for review during this inspection

Instrumentation and Equipment (IP Section 02.04) (1 Sample)

The inspectors reviewed the following radioactive effluent discharge system surveillance test results:

- (1)
 - Stand-By Gas Treatment System
 - Control Room Ventilation System
 - Technical Support Center Ventilation System

Sampling and Analysis (IP Section 02.03) (1 Sample)

The inspectors reviewed the following:

- (1)
 - Main Chimney
 - Unit 1 Reactor Building Vent
 - Unit 2 Reactor Building Vent

Effluent discharges with inoperable monitors

- none were available for review during this inspection

Walk Downs and Observations (IP Section 02.01) (1 Sample)

The inspectors walked down the following gaseous and liquid radioactive effluent monitoring and filtered ventilation systems to assess the material condition and verify proper alignment according to plant design:

- (1)
 - Main Chimney Monitoring System
 - Unit 1 Reactor Building Vent Monitoring System
 - Unit 2 Reactor Building Vent Monitoring System

71124.07 - Radiological Environmental Monitoring Program

Groundwater Protection Initiative (GPI) Implementation (IP Section 02.02) (1 Sample)

- (1) The inspectors examined the remediation efforts associated with the 2018 Radwaste Piping Vault Leak and other historical leaks at the facility.

Site Inspection (IP Section 02.01) (1 Sample)

The inspectors evaluated the radiological environmental monitoring program implementation.

- (1) Walkdowns, Calibrations, and Maintenance Record Review
 - Air Sampling Station Q-01
 - Air Sampling Station Q-02
 - Air Sampling Station Q-04
 - Optically Stimulated Luminescent Dosimeter (OSLD) Monitoring Station Q-01
 - OSLD Monitoring Station Q-02
 - OSLD Monitoring Station Q-04

Environmental Sample Collections and Preparation Observation

- Water Sample Q-33
- Water Sample Q-34

Licensee Actions in Response to Missed Sample, Inoperable Sampler, Lost TLD or Anomalous Measurement

- Q-01 (AI) (Air Sample); 01/04/2019; No Sample, Power Outage
- Q-36 (WW) (Well Water); 01/10/2019; Sample leaked during transportation. New Sample Completed 01/14/2019.

- Q-33 (SW) (Surface Water); 01/05/2019; No Sample, Water Frozen

Sampling Program for the Potential of Licensed Material Entering Groundwater

- Monitoring Well QC-GP-18
- Remediation Well RW-1
- Radwaste Piping Vault

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

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

- (1) Unit 1 (04/01/2018–03/31/2019)
- (2) Unit 2 (04/01/2018–03/31/2019)

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual
Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample
(IP Section 02.16) (1 Sample)

- (1) 10/01/2018 - 03/31/2019

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 drywell radiation monitor failures that might be indicative of a more significant safety issue on June 21, 2019.

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

Event Report (IP Section 03.02) (3 Samples)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 265/2018-001-01 “Two Main Steam Isolation Valves (MSIVs) Closure Times Exceeded” (ADAMS Accession: ML19115A142). The inspectors reviewed the updated LER submittal. The previous LER submittal was reviewed in Inspection Report 05000254/ 2018002; 05000265/ 2018002.
- (2) LER 254/2017-002-01, “Four Main Steam Isolation Valves (MSIVs) Closure Times Exceeded” (ADAMS Accession: ML19115A136). The inspectors reviewed the updated LER submittal. The previous LER submittal was reviewed in Inspection Report 05000254/2017002; 05000265/2017002.
- (3) LER 254/2019-001-00, “HPCI System Inoperable Due to Blown Fuse in the Motor Speed Changer Circuit” (ADAMS Accession: ML19095A380). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in

the LER therefore no performance deficiency was identified. The inspectors also concluded that no violation of NRC requirements occurred.

INSPECTION RESULTS

Licensee-Identified Non-Cited Violation	71111.05Q
<p>This violation of very low safety significance was identified by the licensee and has been entered into the licensee corrective action program and is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.</p> <p>Violation: Quad Cities Units 1 and 2 license condition 3.F requires the licensee to implement and maintain, in effect, all provisions of the approved fire protection program as described in the Final Safety Analysis Report and as approved through Safety Evaluation Reports dated July 27, 1979, with supplements dated November 5, 1980, and February 12, 1981; December 30, 1982; December 1, 1987 with supplement dated April 20, 1988; December 11, 1987 with supplement dated July 21, 1988; and February 25, 1991.</p> <p>The Updated Final Safety Analysis Report Section 9.5.1, Fire Protection System, states Quad Cities Administrative Procedures (QCAP) define the fire protection program by assigning responsibilities, defining the organization, and providing information and procedures pertinent to fire protection. These procedures provide the Administrative Technical Requirements for fire protection and safe shutdown equipment and specify surveillance requirements for the applicable systems and equipment.</p> <p>QCAP 1500-01, "Administrative Requirements for Fire Protection," 39, outlines the administrative requirements for the fire protection system.</p> <p>QCAP 1500-01, "Procedure – Fire Detection System," section D.1.a.(d), states in part:</p> <p><u>IF</u> supervisory device listed in Attachment A is inoperable, <u>THEN</u> perform one of the following:</p> <ul style="list-style-type: none"> -Test detection system at a frequency of once per month <u>OR</u> -declare system inoperable <p>Contrary to the above, from March 23, 2019 to May 16, 2019, the licensee failed to maintain in effect all provisions of the approved fire protection program. Specifically, on March 23, 2019, the licensee documented in Issue Report 4232291 that fire alarm system (FAS) device 32-24 was in alarm and initiated an impairment for the device. Fire alarm system device 32-24 was a supervisory device for the Unit 1 residual heat removal service water vaults and was an emergency fire protection system listed in Attachment A of QCAP 1500-01. From March 23, 2019, to May 16, 2019, the licensee failed to either declare supervisory device 32-24 inoperable or test the detection system at a frequency of once per month.</p>	
<p>Significance: Green. The inspectors determined the issue was more than minor because the performance deficiency was associated with the Mitigating Systems cornerstone attribute of Protection Against External Factors (fire) and it adversely affect the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).</p> <p>The inspectors determined the significance of the finding could be determined using</p>	

Inspection Manual Chapter (IMC) 0609, Appendix F, Fire Protection Significance Determination Process, dated May 2, 2018. The inspectors used IMC 0609, Appendix F, Attachment 1, Fire Protection Significance Determination Process Worksheet, and determined the finding needed to be assigned a fire degradation rating using IMC 0609, Appendix F, Attachment 2, Degradation Rating Guidance. The inspectors concluded the finding represented a high fire degradation rating because the finding was related to fire detection and annunciators were disabled, inaudible, or nonfunctional. Specifically, FAS device 32-24 was non-functional, and control room annunciators would not have alerted operators of a fire in the Unit 1 residual heat removal service water vaults (local alarm panel annunciation was available).

In IMC 0609, Appendix F, Attachment 1, Step 1.4.2: Fixed Fire Protection Systems, the inspectors determined that the non-functional detection system did not adversely affect the ability of the system to protect any equipment important to safe shutdown. The affected residual heat removal service water rooms were supplied with a fixed fire suppression system that were always functional. Therefore, the inspectors determined the finding was of very low safety significance (Green).

Corrective Action References: The licensee identified this issue in condition report Issue Report 4251296. The licensee corrected this concern on May 16, 2019, when FAS device 32-24 was repaired and tested.

Observation: Drywell Radiation Monitor Failures

71152

The inspectors reviewed recent failures of the 2A drywell radiation monitors as documented in IRs 4251706 and 4258115, written on May 24 and June 19, 2019, respectively. Both failures were attributed to dirty contacts in the radiation monitor chassis. After the first failure, documented under IR 4251706, the licensee was able to clean the contacts in the detector chassis and retested it satisfactorily. In the most recent failure documented in IR 4258115, the licensee documented that they had replaced the detector chassis and attributed the failure of the chassis to dirty contacts in the detector selector switch. The licensee decided to replace the entire chassis because this was the second failure of the detector within the previous month. The failed chassis was sent to Power Labs for a failure analysis under assignment number 05 (IR 4258115-05). The inspectors recommend the biennial problem identification and resolution (PI&R) team review the results of the failure analysis and any licensee generated corrective actions. In addition, the licensee discussed that all four drywell radiation monitor chassis (2 per unit) sit in the same environment; they are close to the floor in the control room and susceptible to dust intrusion. The licensee also documented in IR 4251706 that IR 4252208 assignment number 04 was created to evaluate if a preventative maintenance change frequency was warranted for the drywell radiation monitors. The inspectors recommend the biennial PI&R team review both the licensee's evaluation of IR 4252208 assignment number 04 and the performance of all of the drywell radiation monitors because they are in a similar environment. The licensee's corrective actions should address the extent of cause and condition.

EXIT MEETINGS AND DEBRIEFS

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

- On June 6, 2019, the inspectors presented the radiation protection inspection results to Mr. K. Ohr, Site Vice President, and other members of the licensee staff.
- On July 11, 2019, the inspectors presented the integrated inspection results to Mr. K. Ohr, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	or Date	
71111.01	Corrective Action Documents	IR 4238374	U1 Main Transformer Leaking Oil	04/11/2019	
		IR 4244757	1A ASD Temporary Cooling Needed for Summer Readiness	04/30/2019	
		IR 4244760	1B ASD Temporary Cooling Needed for Summer Readiness	04/30/2019	
		IR 4244763	2A ASD Temporary Cooling Needed for Summer Readiness	04/30/2019	
		IR 4244768	2B ASD Temporary Cooling Needed for Summer Readiness	04/30/2019	
	Miscellaneous			Advanced Nuclear Dispatch, Number: 229	02/26/2016
				Nuclear Load Following Congestion Relief Program; Number: 219	11/18/2014
		Risk Issue Number: QDC-2-2019-0124		ODM: U2 Main	0
		SPOG: 1-3-C		Station 4 Quad Cities Units 1 and 2 Special Protection System	13
	Procedures	OP-AA-102-102		General Area Checks and Operator Field Rounds	16
		OP-AA-108-107		Switchyard Control	4
		OP-AA-108-107-1001		Station Response to Grid Capacity Conditions	7
		OP-AA-108-107-1002		Interface Procedure Between BGE/ComEd/PECO and Exelon Generation (Nuclear/Power) for Transmission Operations	11
		QCOA 0010-16		Flood Emergency Procedure	29
		QCOA 6100-03		Loss of Offsite Power	42
		WC-AA-107		Seasonal Readiness	21
		WC-QC-8003-1008		Quad Cities Station Units 1 and 2 , Nuclear Plant Interface Requirements (NPIRs)	4
	Work Orders			Contingency Seasonal Readiness Work Orders	
	71111.04	Procedures	AD-AA-101-F-10	Unit 1 Core Spray System Preparation for Standby Operation	1
QCOP 1400-09			Unit 2 Core Spray System Preparation for Standby Operation	5	
QCOP 6600-04			Diesel Generator 1/2 Preparation for Standby Operation	34	
QOM 2-1400-08			Core Spray System Fuse and Breaker Checklist	5	

Inspection Procedure	Type	Designation	Description or Title	or Date
71111.04S		QOM 2-1400-09	2A Core Spray Valve Checklist	8
		QOM 2-1400-10	2B Core Spray Valve Checklist	6
		QOM-1-1400-10	Unit 1B Core Spray Valve Checklist	8
		QCOP 6600-04	Diesel Generator 1/2 Preparation for Standby Operation	34
		QCOP 6600-24	Unit 2 Diesel Generator Preparation for Standby Operation	3
		QOM 0-6600-01	Unit 0 Diesel Generator Valve Checklist	17
71111.05Q	Corrective Action Documents	CR 4251296	Missed QCAP 1500-01 Actions	05/23/2019
		IR 4232291	FAS Device 32-24 and 52-11 Alarm	03/23/2019
		IR 4251296	Missed QCAP 1500-01 Actions	05/23/2019
	Drawings	Drawing F-264	Fire Suppression System RHR Service Water Pumps Area G Control Rod Drive Feed Pumps Area J	H
	Engineering Changes	EC 623395	Temporary Supplemental Cooling to the ASD Cabinets	0
		EC 623395	CC-AA-209; Approved Fire Protection Program Configuration Change Impact Review	0
	Fire Plans	Fire Zone 8.2.8.E	Unit 1 TB 639'-0" Elev. Main Turbine Floor (Outside Shield Wall)	June 2010
		FZ 11.1.1 A, B, and C	Unit 1 TB 547'-0" Elev. RHR Service Water Pumps	March 2012
		FZ 11.1.1.B	Unit 1 RHR Service Water Pump Room	23
		FZ 11.1.1.C	Unit 1 RHR Service Water Pump Room	23
	Procedures	ER-AA-425-1001	Surveillance Test Interval (STI) Evaluation Form	1
		QCAP 1500-01	Administrative Requirements for Fire Protection	39
		QCMM 5700-04	Installation and Removal of ASD Temporary Cooling Units	0
		QCOA 4100-11	TRX(I) Supervisory (Trouble) Devices Monitoring Local System Panels	34
	71111.12	Corrective Action Documents	IR 4121737	Unexpected Trip of GCB 3-4 In 345kV Switchyard
IR 4234556			QDC Readiness to Replace/Address a Failed 4kV/480V XFMR	03/30/2019
IR 4247012			Create WO to Document Risk Assessment for 345 kV Switching	05/07/2019
IR 4247090			MRule A1DE Required for SY9700-01, 345kV Switchyard	05/07/2019
IR 4250438			Issue in IR 4233332 Requires MRFF Processing	05/20/2019

Inspection Procedure	Type	Designation	Description or Title	or Date	
71111.13	Miscellaneous	Tagout: 02-IA-1240FIX-001		02/11/2019	
	Procedures	OP-AA-109-103	Tag-Out Requester Checklist; WO 04768967-01	01/14/2019	
		WC-AA-104-F-01	Risk Screening/Mitigation Plan; MM Repair Instrument Air Leak on Solder Joint WO 04768967-01	01/14/2019	
71111.15	Corrective Action Documents	IR 4236078	EDG to ESS Bus Ducts in EQ Harsh Zones	04/03/2019	
		IR 4238910	RV 1-1402-28A Set-Point Test Exceeded 10-Year Test Frequency	04/12/2019	
		IR 4242536	Unexpected Speed Hold on 'B' ASD	04/23/2019	
		IR 4258635	'B' CREVS Rough Pre-Filters Installed Backwards	06/21/2019	
	Drawings	Drawing 4E-1426	Recirculating Pump ASD 1B Input Breaker Control	J	
		Drawing 4E-1426	Recirculating Pump ASD 1B Input Breaker Control	E	
		Drawing 4E-6577F	ATWS Recirc Pump Trip System ECCS INIT-FW, RCIC, HPCI and Turb Trips Div I and Div II - Part 6	T	
	Engineering Changes	EC 440244	Review Use of Materials in Non-Seg Bus Routed from EDGS to Dash Busses through EQ Harsh Zones		
		ECR 441826	Engineering Evaluate Acceptability of Filters for the Control Room HVAC Charcoal Absorber Installed Backwards	06/20/2019	
	Miscellaneous		Consolidated Safety Relief Valve Sizing and Selection Report for Core Spray Pump Discharge Over Fire Protection	08/07/2013	
		ASME OM Code-2004	Code for Operation and Maintenance of Nuclear Power Plants		
	Procedures	QCAN 901(2)-4 C-5	Recirculation Adjustable Speed Drive 'B' Speed Hold	12	
		QCOA 0202-08	Reactor Recirculation Control System Trouble	17	
		QCOA 0202-08	Attachment D; RRCS/ASD Event List	17	
		QCOS 0202-19	Online Testing of Unit 1 Division I ATWS Recirculation Pump Trip and Alternate Rod Insertion Logic	10	
		QCOS 0202-20	Online Testing of Unit 1 Division II ATWS Recirculation Pump Trip and Alternate Rod Insertion Logic	12	
		UFSAR 7.8	Anticipated Transient Without Scram Mitigation System	13	
	Work Orders	WO 1817554	Flushing Cores Spray Lines into Reactor (IST)	03/27/2017	
	71111.18	Miscellaneous	FWAA 4227272-66-08	NC-19-004-Y, Yellow NER for Fitzpatrick Loss of Instr Air	

Inspection Procedure	Type	Designation	Description or Title	or Date
	Procedures	DOA 4700-01	Instrument Air System Failure	53
		OP-AA-101-111	Roles and Responsibilities of On-Shift Personnel	12
		OP-AA-101-111-1001	Operations Standards and Expectations	22
		OP-QC-103-102-1002	Quad Cities Strategies for Successful Transient Mitigation	25
71111.19	Corrective Action Documents	IR 4230579	PSU Leakage Identified on the 0203-1D Inboard MSIV	03/18/2019
		IR 4235323	1D RHR Pump Tripped During QCOS 1000-06	04/01/2019
	Miscellaneous	Inservice Testing Bases Document	Valve EPN: 0-5741-319A-AO; CR HVAC-B Train RCU HX RHR SW Supply Isolation	
		Inservice Testing Bases Document	Valve EPN: 0-5741-319B-AO; CR HVAC-B Train RCU HX Serv Wtr Supply Isolation	
	Procedures	QCOS 0250-04	MSIV Closure Timing (PMT for MSIV Outage Maintenance)	28
		QCOS 0250-12	MSIV Closure Scram Sensor Channel Outage Functional Test	2
		QCOS 1000-06	RHR Pump/Loop Operability Test	61
		QCOS 5750-04	Quarterly Testing of Control Room HVAC System Valves and Dampers	38
	Work Orders	WO 4832132	CRD Scram Timing in Hot Condition (IST)	04/07/2019
		WO 4877341	Control Room HVAC System Check Vlv Test (IST)	04/08/2019
		WO 4911981	RHR 'C' Pump Flow Rate (IST)	04/01/2019
		WO 4911983	RHR 'D' Pump Flow Rate (IST)	04/02/2019
71111.20	Corrective Action Documents	IR 4230600	PSU Q1R25 As Found MSIV 1B LLRT Exceeds TS Limit <34	03/18/2019
		IR 4231752	PSU Q1R25: Failed Relay	03/21/2019
		IR 4231753	Found Bad Relay for HPCI Circuit	03/21/2019
		IR 4231897	Fatigue Assessment IR	03/21/2019
		IR 4232031	Rapid Trending Identified Negative Trend in FME	03/22/2019
		IR 4232329	Foreign Material Event - Unit 1 Reactor Vessel	03/23/2019
		IR 4232493	WHR Fatigue Assessment	03/24/2019
		IR 4232916	Incorrect Valve Tag Removed	03/25/2019
		IR 4236198	Unable to Perform DW Spray Header Air Flow Test	04/04/2019
IR 4236574	MSIV-1-0203-1A As-Left Thrust Readings Less Than As-	04/05/2019		

Inspection Procedure	Type	Designation	Description or Title	or Date
			Found	
	Drawings	Diagram 4E-1331A	Relaying and Metering Diagram Generator and Main Power Transformer 1	1
		Drawing 4E-1331	Relaying and Metering Diagram Generator and Main Transformer 1	BB
		Drawing 4E-1338	Schematic Diagram Generator and Transformer Tripping Relays Primary System	AY
	Miscellaneous		Haul/Deployment Paths	01/03/2019
		Shutdown Safety Log #01	Modification Activities for Q1R25	01/09/2019
		Shutdown Safety Log #02	Q1R25 Shutdown Safety FLEX Considerations	01/09/2019
		Shutdown Safety Log #03	List of High Risk Activities and First Time Activities for Q1R25	01/09/2019
		Shutdown Safety Log #04	Communication Plan for Q1R25	01/09/2019
		Shutdown Safety Log #05	List of System Health Review for Q1R25	01/16/2019
	Procedures	MA-AA-736-620	Application of Freeze Seal Using RIDGID SuperFreeze SF-2500	1
		NF-AB-715	Critical Prediction Checklist	13
		NF-AB-720-F-1	Control Rod Sequence Review and Approval Sheet for Unit 1 Cycle 26	1
		OU-AA-103	Shutdown Safety System Health Review	20
		QCGP 1-1	Normal Unit 1 Startup	115
		QCOP 1000-24	Draining Reactor Cavity and Vessel to the Torus	23
		QCOS 0201-02	Primary System Boundary Thermal Limitations	31
		QCOS 0201-02	Reactor Thermal Limitations Surveillance Data Sheet	31
	Work Orders	WO 4628169	Core Verification	03/31/2019
71111.22	Corrective Action Documents	IR 4232248	PSU Q1R25 FW CV 1-0220-62A Exceeded Required Action Limit	03/23/2019
		IR 4232654	Q1R25 LLRT 1-2001-3 Leakage Could Not Be Quantified	03/25/2019
		IR 4235847	Q1R25 RPV Class 1 & Class 2 System Leakage Test Results	04/03/2019

Inspection Procedure	Type	Designation	Description or Title	or Date
	Procedures	ER-AA-425	Implementation of the Technical Specification Surveillance Frequency Control Program	2
		QCOS 1000-31	1A Loop LPCI and Containment Cooling Modes of RHR Non-Outage Logic Test	29
		QCOS 6600-50	Unit One Division II Emergency Core Cooling System Simulated Automatic Actuation and Diesel Generators Auto-Start Surveillance	43
		STI Change Request Number QC-18-008	Review the Frequency of Technical Specification (TS) Surveillance Requirements (SR) for the HPCI/RCIC Low Pressure Flow Rate and RCIC Automatic Initiation Testing from 24 Months to 48 Months	0
	Work Orders	WO 1659536	Part 21 Issue on 1-1201-2	03/30/2019
		WO 4620642	MM Part 21 Action Item for MOV 1-1201-5 in Q1R25	04/01/2019
		WO 4690630	Core Flow Calibration	04/09/2019
WO 4907182		RX WTR Cleanup Valve Timing Test (IST)	04/07/2019	
71124.06	Calculations	Permit Number 2018005	Liquid Release Permit Report - River Discharge Tank	05/04/2018
		Permit Number 2019191	Gaseous Release Permit Report - Main Chimney Noble Gas Unit 1+2	06/03/2019
		Permit Number 2019193	Gaseous Release Permit Report - Reactor Vent Noble Gas Unit 1	06/03/2019
		Permit Number 2019199	Gaseous Release Permit Report	06/04/2019
		Permit Number 2019201	Gaseous Release Permit Report	06/04/2019
		Permit Number 2019203	Gaseous Release Permit Report - Reactor Vent Iodine and Particulate Unit 2	06/04/2019
		Release Report 2019004	Liquid Release Permit Report - Discharge Bay	05/01/2019
	Miscellaneous	CY-QC-170-301	Offsite Dose Calculation Manual Quad Cities Station Units 1 and 2	13
		SVP-18-029	Radioactive Effluent Release Report for 2017	04/27/2018
		SVP-19-026	Radioactive Effluent Release Report for 2018	04/30/2019
	Procedures	CY-QC-110-605	Reactor Building Cent Gaseous & Particulate Sampling	12

Inspection Procedure	Type	Designation	Description or Title	or Date
		CY-QC-110-606	Main Chimney Gaseous & Particulate Sampling	20
		CY-QC-120-735	Main Chimney & Reactor Building Vent Noble Gas Release Rate	9
	Work Orders	01836282-01	Stand-By Gas Treatment Charcoal Absorber Test	05/10/2017
		01906646-01	Technical Support Center Charcoal Absorber Surveillance	09/07/2017
		01918595-01	Control Room Emergency Filtration System Charcoal Absorber	10/11/2017
		04635819-01	Main Chimney Noble Gas Monitor Calibration	03/06/2019
		04670696	Service Water Monitor Calibration	12/20/2018
		0467582-01	Radwaste Effluent Monitor Calibration	01/04/2019
	04876363-01	Reactor Building Vent/Fuel Pool Rad Monitor Calibration/Functional Test	02/20/2019	
71124.07	Corrective Action Documents	04120126	Water Found in Radwaste Piping Vault	03/28/2018
		04136730	REMP 2018 1st Quarter Missing/Anomalies Samples	05/11/2018
		04202852	REMP Air Sampler Station Found Without Power	12/07/2018
		04249167	1st Quarter 2019 Missed REMP Samples	05/15/2019
	Miscellaneous		Quad Cities Nuclear Power Station, Units 1 and 2 Annual Radiological Environmental Operation Report	05/10/2019
			Meteorological Monitoring Program at the Quad Cities Nuclear Generating Station January 2019	03/21/2019
			Meteorological Monitoring Program at the Quad Cities Nuclear Generating Station February 2019	04/25/2019
	Procedures	EIML-SPM-1	Sampling Procedures Manual Environmental Incorporated Midwest Laboratory	16
		EN-AA-407	Response to Inadvertent Releases of Licensed Materials to Groundwater, Surface Water, Soil or Engineered Structures	10
		EN-AA-408	Radiological Groundwater Protection Program	0
		EN-AA-408-4000	Radiological Groundwater Protection Program Implementation	9
		EN-QC-408-4160	Quad Cities Station Radioactive Groundwater Protective Program Reference Material	2
71151	Miscellaneous	CY-QC-120-720 Attachment 2	Actual Dose Data and Supporting Information Package	10/31/2018 through 03/31/2019

Inspection Procedure	Type	Designation	Description or Title	or Date
	Procedures	CY-QC-120-720	Plant Effluent Dose Calculations	7
71152	Corrective Action Documents	IR 3990038	MSIVs 1-0203-1B, 1-0203-1D, 1-0203-2C and 1-0203-2D Closure Times Exceeded the Maximum Technical Specification Limit of <5 Seconds	03/27/2017
		IR 4116642	MSIVs 2-0203-1A and 2-0203-1C Closure Times Exceeded the Maximum Technical Specification Limit of <5 Seconds	03/19/2018
		IR 4230672	EO ID: 1C RHRSW HP O/B Seal Leaking	03/18/2019
		IR 4231463	HPCI Motor Speed Changer Cycling Off of High Speed Stop	03/21/2019
		IR 4232959	Bus 19 Main Feed Breaker Failed to Trip During Crosstie	03/26/2019
		IR 4233634	Paint Flaking from Refuel Floor Ceiling (FME)	03/27/2019
		IR 4234060	Evaluation of Paint Chips that Fell from RB Overhead	03/28/2019
		IR 4235733	Rising Trend on PI 2-0262-17D 2B Recirc Pump OB Seal Press	04/02/2019
		IR 4237779	MCR Alarm Not Received on 902-56 Panel	04/09/2019
		IR 4238831	1C RHRSW High Pressure Pump OB Seal Leak During Run	04/12/2019
		IR 4245286	VT3 of Support M-994D-22 During Q1R26	05/01/2019
		IR 4251168	Logic Test Discrepancies and Improvements QCOS 1000-31	05/23/2019
		IR 4251706	The U2 'A' Drywell Rad Monitor (2-2419A) Failed Downscale	05/24/2019
		IR 4252249	OOT, RIS 1-2419-A, Trend Code B3	05/28/2019
		IR 4258115	U2 'A' Drywell Radiation Monitor, 2-2419A, Failed Downscale	06/19/2019
		IR 4259369	MRule A1DE Required for CM2400-02, Unit 2 DW Rad Monitor	06/25/2019
	Drawings	Drawing M-37	Diagram of RHR Service Water Piping	BI
	Procedures	QCIS 2400-04	Unit 2 Division I Drywell Radiation Monitor Calibration and Functional Test	8
	Work Orders	WO 4924935	The Unit 2 'A' Drywell Rad Monitor Failed Downscale	05/28/2019
71153	Corrective Action Documents	ECAPE 4217557	U1 HPCI Failed to Roll During QCOS 2300-27	03/08/2019