



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

May 11, 2020

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

**SUBJECT: QUAD CITIES NUCLEAR POWER STATION – INTEGRATED INSPECTION  
REPORT 05000254/2020001 AND 05000265/2020001**

Dear Mr. Hanson:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Quad Cities Nuclear Power Station. On April 7, 2020, the NRC inspectors discussed the results of this inspection with Mr. K. Ohr, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation 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 Quad Cities Nuclear Power Station.

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 Quad Cities Nuclear Power Station.

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/***

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 w/ encl: Distribution via LISTSERV®

Letter to Bryan Hanson from Kenneth Riemer dated May 11, 2020.

SUBJECT: QUAD CITIES NUCLEAR POWER STATION – INTEGRATED INSPECTION  
REPORT 05000254/2020001 AND 05000265/2020001

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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: 05000254/2020001 and 05000265/2020001

Enterprise Identifier: I-2020-001-0053

Licensee: Exelon Generation Company, LLC

Facility: Quad Cities Nuclear Power Station

Location: Cordova, IL

Inspection Dates: January 01, 2020 to March 31, 2020

Inspectors: C. Matthews, Illinois Emergency Management Agency  
R. Murray, Senior Resident Inspector  
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, 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 Perform Post-Maintenance Testing Caused Inoperability of Control Room Heating, Ventilation, and Air Conditioning			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000254,05000265/2020001-01 Open/Closed	[H.11] - Challenge the Unknown	71153
A Green finding and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was self-revealed when the licensee failed to perform post-maintenance testing on the 'B' control room heating, ventilation, and air conditioning (HVAC) fire protection isolation valve, AOV 0-4199-315, following maintenance on the actuator, in accordance with Work Order 1845827 and procedure MA-AA-716-012, "Post-Maintenance Testing," Revision 24.			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000254/2019-003-00	LER 2019-003-00 for Quad Cities, Unit 1, Water Found in Control Room Emergency Ventilation Air Filtration Unit	71153	Closed

## **PLANT STATUS**

### **Unit 1**

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 for control rod sequence exchanges, testing, and as requested by the transmission system operator.

### **Unit 2**

The unit began the inspection period at full-rated thermal power. On January 10, 2020, the station performed an unplanned downpower to approximately 67 percent rated thermal power to perform repairs on the Unit 2 2B feedwater regulating valve. The unit returned to full power on the same day. On March 1, 2020, the unit began its end-of-cycle coastdown period. The unit shut down on March 30, 2020, for refueling outage Q2R25 and remained in a shutdown condition through the end of the inspection period. For all other periods, the unit was at full-rated thermal power with the exception of short-term power reductions for control rod sequence exchanges, testing, and 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 revision histories are located on the public website at

<http://www.nrc.gov/readingrm/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." From January 1 – March 19, 2020, 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week and during that time conducted plant status activities as described in IMC 2515, Appendix D; and observed risk significant activities when warranted. In addition, resident and regional baseline inspections were evaluated to determine if all or portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In the cases where it was determined the objectives and requirements could not be performed remotely, management elected to postpone and reschedule the inspection to a later date.

## **REACTOR SAFETY**

### 71111.04 - 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) QCOS 2900-06, "Safe Shutdown Makeup System," on January 8, 2020 (Unit 1/2)
- (2) QCOP 4700-01, "Instrument Air Startup," on February 12, 2020 (Unit 1/2)
- (3) QCOP 3800-02, "Unit 1 TBCCW [turbine building closed cooling water] System Operation," on February 12, 2020
- (4) Unit 1 high pressure coolant injection (HPCI) during reactor core isolation cooling (RCIC) planned maintenance on March 23, 2020

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Fire Zone 7.2, Unit 2 turbine building, elevation 628'-6", 250 V battery room on January 8, 2020
- (2) Fire Zone 8.2.6.C, Unit 1/2 turbine building, elevation 595'-0", electrohydraulic control fluid reservoir on January 8, 2020
- (3) Fire Zone 8.2.6.E, Unit 2 turbine building, elevation 595'-0", reactor feed pumps on January 29, 2020
- (4) Fire Zones 11.1.3 and 11.1.4, Unit 1 and Unit 2 reactor building, elevation 554'-0", Unit 1 and Unit 2 HPCI pump rooms and HPCI access tunnel on March 23, 2020

#### Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the onsite fire brigade training and performance during an announced fire drill on January 29, 2020.

### 71111.06 - Flood Protection Measures

#### Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 1 and Unit 2 reactor building basement areas and issues discussed in Issue Report 4321910, "Hydrolazing Floor Drains before the Unit 2 Outage," and Issue Report 4325342, "Follow up IR for the Unit 1 Floor Drains to be Cleaned," on March 9, 2020

## 71111.11Q - Licensed Operator Regualification 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 the Unit 2 down power for repairs to the Unit 2B feed regulating valve flow controller on January 10, 2020.

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

- (1) The inspectors observed and evaluated licensed operator requalification activities on January 23, 2020 and February 17, 2020.

## 71111.12 - Maintenance Effectiveness

### Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) fire protection and diesel driven fire pumps on March 2, 2020

### Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure SSCs remained capable of performing their intended function:

- (1) quality control (QC) verifications were reviewed for multiple work orders on February 20, 2020, for work associated with both Units

## 71111.13 - Maintenance Risk Assessments and Emergent Work Control

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

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed;

- (1) Work Order 4905309-01, "Replace Standby Liquid Control Heat Trace," on January 6, 2020
- (2) probabilistic risk assessment availability and planned work for week of January 20, 2020
- (3) Issue Report 4318617, "Designated vs Dedicated Operators and Availability," on February 17, 2020
- (4) Issue Report 4327418, "NRC ID: Fire Risk not Accurate in Paragon or WWSP [work week safety profile]," on March 18, 2020



## 71111.15 - Operability Determinations and Functionality Assessments

### Operability Determination or Functionality Assessment (IP Section 03.01) (7 Samples 2 Partial)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) Issue Report 4303137, "Drywell Radiation Monitor Part 21," as applicable to both units, on January 9, 2020
- (2) Issue Report 4311698, "[Unit] 1/2 EDG [emergency diesel generator] O/P Breaker Failed to Close to Bus 23-1," on January 22, 2020
- (3) Engineering Change 630446, "Evaluation to Support Backseating of [Unit 2] PCIV [primary containment isolation valve] MO 2-2301-5 Valve to Minimize or Stop Packing Leakage," on January 23, 2020
- (4) Issue Report 4321541 "Boron Solution in [Unit] 2A SBLC [standby liquid control] Gear Case 2-02-A," on February 26, 2020
- (5) (Partial)  
Issue Report 4323520, "[Unit 1] HPCI FIC [flow indicating controller] Stuck at Max Flow," on March 4, 2020. The inspectors review of this issue will continue into the next inspection period. The inspectors plan to complete this sample in the next inspection period.
- (6) Issue Report 4313985, "[Unit 1/2] HCVS [hardened containment ventilation system] Inop Due to Low N2 Pressure," on March 9, 2020
- (7) Issue Report 4303224, "[Unit 2] RV [relief valve] 2-1402-28B Failed Post-Removal Setpoint Test," on March 10, 2020
- (8) (Partial)  
Issue Report 4328207, "[Unit 2] LPCI [low pressure coolant injection] Loop Select," on March 20, 2020. The inspectors review of this issue will continue into the next inspection period. The inspectors plan to complete this sample in the next inspection period.
- (9) Issue Report 4324419, "Intentionally Abbreviated Maintenance on Unit 1 HPCI Signal Converter," on March 20, 2020

## 71111.19 - Post-Maintenance Testing

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

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) Unit 2B feedwater relief valve testing following emergent repairs to flow controller on January 10, 2020
- (2) Unit 1/2 'B' fire diesel overhaul/annual capacity test on January 30, 2020
- (3) reactor head lift strongback load test after weld repair on March 4, 2020
- (4) QCOS 1000-33, "Unit 1B Loop LPCI and Containment Cooling Modes of RHRs [residual heat removals] Non-Outage Logic Test," on March 18, 2020
- (5) Unit 1 RCIC operability test following planned maintenance on March 23, 2020

71111.20 - Refueling and Other Outage Activities

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

- (1) (Partial)  
The inspectors evaluated the Unit 2 refueling outage, Q2R25, activities from March 30 to March 31. The inspectors reviewed the licensee's shutdown safety plan and observed shutdown and cooldown activities (Inspection Procedure Sections 03.01 a and b.1). Refueling activities continued into the next inspection period.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

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

- (1) QIS 0004-02, "[Unit 1] RBM [rod-block monitor] Functional Test and Calibration," on February 19, 2020
- (2) QCOS 1100-07, "[Unit 2] SBLC Flow Rate Test," on March 3, 2020

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) QCOS 7500-05/06, "Unit 1/2 'A' Standby Gas Treatment Operability Test and Power Operated Valve Test," on February 14, 2020

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

- (1) (Partial)  
Unit 2 main steam isolation valve, local leak-rate test on March 31, 2020. The inspectors review of this issue continued into the next inspection period. The inspectors plan to complete this inspection sample in the next inspection period.

71114.06 - Drill Evaluation

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

- (1) The inspectors evaluated the emergency preparedness drill conducted on February 6, 2020.

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (2 Samples)

- (1) Unit 1 (01/01/2019-12/31/2019)
- (2) Unit 2 (01/01/2019-12/31/2019)

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02)  
(2 Samples)

- (1) Unit 1 (01/01/2019-12/31/2019)
- (2) Unit 2 (01/01/2019-12/31/2019)

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (2 Samples)

- (1) Unit 1 (01/01/2019-12/31/2019)
- (2) Unit 2 (01/01/2019-12/31/2019)

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

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

- (1) Issue Report 4308372, "[Unit 1] Offgas High Rad Alarm After Placing Demin Online," on January 8, 2020
- (2) Issue Report 4321488, "[Unit 2] New Fuel Assemblies Identified with Irregular Seal Springs," on February 26, 2020

71153 - Followup of Events and Notices of Enforcement Discretion

Event Followup (IP Section 03.01) (1 Sample)

- (1) Issue Report 4310554, "Fire in [Unit 1] SBO [station blackout] Diesel Isolimiter," on January 16, 2020

Event Report (IP Section 03.02) (1 Sample)

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

- (1) LER 05000254/2019-003-00 for Quad Cities, Unit 1, Water Found in Control Room Emergency Ventilation Air Filtration Unit (ADAMS Accession: ML19354A102). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153.

**INSPECTION RESULTS**

Failure to Perform Post-Maintenance Testing Caused Inoperability of Control Room Heating, Ventilation, and Air Conditioning			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000254,05000265/2020001-01 Open/Closed	[H.11] - Challenge the Unknown	71153
A Green finding and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," was self-revealed when the licensee failed to perform post-			

maintenance testing on the 'B' control room heating, ventilation, and air conditioning (HVAC) fire protection isolation valve, AOV 0-4199-315, following maintenance on the actuator, in accordance with Work Order 1845827 and procedure MA-AA-716-012, "Post-Maintenance Testing," Revision 24.

Description:

On October 27, 2019, an equipment operator on rounds identified water on the floor and overflowing from the air filtration unit (AFU) of the 'B' train of the control room HVAC system. Additional investigation and inspection by the licensee identified water was covering the bottom of the AFU filter trays. Several filters, including the pre and post high-efficiency particulate air (HEPA) filters and the charcoal filter trays, were submerged in approximately 3 inches of water, which caused the AFU to be unable to perform its function. The wetting of the filters inhibited the AFU's ability to properly filter contaminants from the air entering the control room during a design basis accident. The licensee declared the 'B' train of the control room HVAC system inoperable.

The 'B' train of the control room HVAC system is a single-train safety-related system, also referred to as the control room emergency ventilation (CREV) system. The licensee initially reported this condition in accordance with 10 CFR 50.72(a)(2)(v)(D), for any event or condition that could have prevented the fulfillment of the safety function of structures, systems, or components that are needed to mitigate the consequences of an accident. Investigation into this event identified that water was leaking from an installed safety-related fire protection deluge system inside the AFU. Specifically, air-operated valve (AOV) 0-4199-315 was leaking past its seat. The inspectors noted that the licensee documented the safety-related designation of AOV 0-4199-315 in Parts Evaluation 57887. Additionally, the licensee identified maintenance was performed on the fire protection system valve AOV 0-4199-315 on October 10, 2019, under Work Order 1845827, "Rebuild Actuator/Replace Air Regulator PCM [performance centered maintenance]." Following the maintenance on October 10, the licensee identified that it could not perform the post-maintenance testing as described in the work order package. The licensee identified this issue in Issue Report 4287032, "Unable to Perform PMT AO 0-4199-315, CR [control room] HVAC AFU Fire Protection Valve," on October 10, 2019. The licensee decided to return the fire protection system to service without performing post-maintenance testing, and once it was determined how to perform the post-maintenance test, they would perform the test at a later date. The licensee had not yet completed the post-maintenance test when they identified the water in the 'B' control room HVAC system, 17 days later, on October 27, 2019.

The licensee concluded that the system was inoperable since October 10, 2019, approximately 17 days, which was longer than the 7 days allowable outage time in accordance with Limiting Condition for Operation (LCO) 3.7.4, "Control Room Emergency Ventilation (CREV) System." Based on the licensee's conclusion, they subsequently submitted LER 05000254/2019-003, "Water Found Control Room Emergency Ventilation Air Filtration Unit," on December 20, 2019, in accordance with 10 CFR 50.73(a)(2)(v)(D) and 10 CFR 50.73(a)(2)(i)(B), for any event or condition that could have prevented the fulfillment of a safety function and any operation or condition which was prohibited by the plant's Technical Specifications, respectively.

Licensee procedure MA-AA-716-012, "Post Maintenance Testing," Revision 24, states, in part, that it "provides standard process guidance on requirements and expectations to ensure that when any maintenance is performed, that (1) the original deficiency is corrected, (2) **no** new deficiency has been created as a result of maintenance activities or configuration

change, and (3) equipment will perform its intended function when returned to service." Step 4.2.4 states, in part, that post-maintenance testing shall be performed on any corrective maintenance and some preventive maintenance activities, including maintenance that affects the integrity or operation of a fluid system or component within the system. Additionally, MA-AA-716-012, Attachment 3, "AOV [Air Operated Valve] Post Maintenance Test Matrix," lists the post-maintenance tasks for associated maintenance tasks. Included tests for actuator maintenance and air regulator maintenance are, in part, a functional stroke and an external leak check of process fluid and air.

Task 04 of Work Order 1845827 was for operations to perform the post-maintenance test. Following maintenance, operations identified that the valve could not be stroked due to interlocks not being met, the licensee generated the previously mentioned Issue Report 4287032. The licensee decided to not perform the post-maintenance test, and in the corrective actions for Issue Report 4287032, the licensee planned procedure revisions to include steps that would install a jumper around a temperature switch so that a functional stroking of the valve could be performed. The inspectors noted that the licensee did not assign a corrective action item to schedule or perform the post-maintenance test once the procedural change was completed. The original due date for the procedural change was November 21, 2019, over a month after the maintenance on the valve was performed. Sixteen days after the maintenance was performed, an equipment operator on rounds identified water leaking out of the AFU onto the floor in the CREVs room, and the CREV system was declared inoperable. The failure to perform the post-maintenance test following the maintenance performed on valve 0-4199-315 did not meet the licensee's procedural requirements and failed to ensure that no new deficiencies were created as a result of the maintenance performed or that the affected equipment could perform its intended function. The licensee determined that the work performed on the valve likely relaxed the closure force on the valve, causing the seat to leak, and water was able to reach the spray nozzles inside the AFU.

The inspectors determined this issue was self-revealed. Although Inspection Manual Chapter (IMC) 0612 defines licensee-identified findings as "those identified during...operator rounds...", it also says that licensee-identified issues are "identified as a result of deliberate observation by licensee personnel." The inspectors determined that the large amount of water that was overflowing in the 'B' control room HVAC room did not require deliberate observation. Additionally, the IMC 0612 definition of self-revealed items is: "those identified as a result of a condition that becomes apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations," and even more relevant, it states, "examples include those identified through... identification of large quantities of fluids in areas where one would not normally expect such a condition." The inspectors determined that self-revealed was more appropriate for this scenario.

**Corrective Actions:** Corrective actions included replacement of the AFU filters. Additionally, the licensee isolated AOV 0-4199-315, planned corrective actions to repair the valve, and planned actions to revise the model work order. Model work order improvements were required to ensure that steps for post-maintenance testing included actions required to ensure the temperature switch contacts were bypassed in order to meet the valve permissive interlocks required for opening the valve.

**Corrective Action References:**

Issue Report 4291738, "Water Found in Control Room HVAC Air Filtration Unit," dated October 27, 2019

Performance Assessment:

Performance Deficiency: The licensee failed to perform post-maintenance testing on the 'B' control room HVAC fire protection isolation valve, AOV 0-4199-315, following maintenance on the actuator, in accordance with Work Order 1845827 and procedure MA-AA-716-012, "Post Maintenance Testing," Revision 24.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance 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 perform post-maintenance testing on a fire protection valve inside the CREV system caused the system to become inoperable and lose the radiological barrier that the CREV system provides for the control room. The inspectors did not identify an applicable example in IMC 0612, Appendix E.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding was Green using IMC 0609, Appendix A, Exhibit 3, Barrier Integrity Screening Questions, Section D, "Control Room, Auxiliary, Reactor, or Spent Fuel Pool Building," because the finding only represented a degradation of the radiological barrier function provided for the control room.

Cross-Cutting Aspect: H.11 - Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, in Issue Report 4287032, "Unable to Perform PMT AO 0-4199-315, CR HVAC AFU Fire Protection Valve," dated October 10, 2019, the licensee identified the inability to perform post-maintenance testing as specified in the work order. The licensee made a decision to postpone the post-maintenance test to a later date that was not specified in the actions of the condition report. The licensee returned the CREV system to service without verifying the performance of AOV 0-4199-315, a safety-related valve that could impact the operation of the CREV system. The licensee did not evaluate and manage all of the associated risks before returning the AFU to service without testing AOV 0-4199-315.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires, in part, that a test program be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above, on October 10, 2019, the licensee failed to assure that testing required to demonstrate that safety-related valve AOV 0-4199-315, the 'B' train control room HVAC air filtration unit fire protection isolation valve, would perform satisfactorily in service was identified and performed in accordance with written test procedures which incorporated the requirements and acceptance limits contained in applicable design documents. Specifically, the licensee failed to assure that the testing identified in Work Order 1845827, "Rebuild Actuator/ Replace Air Regulator PCM [Performance Centered Maintenance]," to stroke the valve and verify no external leakage (i.e. that the valve would perform satisfactorily in

service), was performed prior to returning the deluge system and control room emergency ventilation system to service.

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

## **EXIT MEETINGS AND DEBRIEFS**

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

- On April 7, 2020, 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	Revision or Date
71111.04	Procedures	QCOP 3800-02	Unit 1 TBCCW System Operation	4
		QCOP 4700-01	Instrument Air System Startup	22
		QCOS 2900-06	SSMP Valve Position Verification	12
71111.05	Fire Plans	FZ 7.2	Unit 2 TB 628'-6" Elev. 250 V Battery Room	July 2009
		FZ 8.2.6.C	Unit 1/2 TB 595'-0" Elev. EHC Fluid Reservoir	March 2018
		FZ 8.2.6.E	Unit 2 TB 595'-0" Elev. Reactor Feed Pumps	November 2018
	Procedures	Fire Drill Scenario No.: 2020 1st Quarter #1	U-2 Reactor Feed Pump Room Rag Bin	01/29/2020
71111.06	Corrective Action Documents	4321910	U1 Floor Drains Need To Be Cleaned	03/10/2020
		4325342	Follow Up of IR for U-1 Floor Drains To Be Cleaned	03/10/2020
71111.12	Miscellaneous	QV Inspection Logs	QV Inspections Performed by Work Order	02/20/2020
71111.13	Corrective Action Documents	2417610	Wrong Fiberglass Tape Used on Heat Trace	11/24/2014
		4233407	Missing Heat Trace on Section of U1 SBLC Piping	03/27/2019
		IR 4318617	NRC ID: Designated vs Dedicated Operators and Availability	02/14/2020
		IR 4327418	NRC ID: Fire Risk Not Accurate In Paragon or WWSP	03/17/2020
	Work Orders	4657736	EM EWP Removal of U1 SBLC Temp	
		4684226	CM 1-1105-A Replace and Setpoint Test	
		4905309	EM Replace Missing Heat Trace U1 SBLC Piping	01/14/2020
71111.15	Corrective Action Documents	4251706	The U2 'A' Drywell Rad Monitor (2-2419A) Failed Downscale	05/24/2019
		4303224	2-1402-28B RV Failed Post-Removal Setpoint Test	12/12/2019
		4307904	Replace Effected RP-2 Module Board per 10 CFR 21 Notification	01/03/2020
		4311698	1/2 EDG O/P Breaker Failed to Close to Bus 23-1	01/21/2020
		4313958	HCVS Nitrogen Bottle Pressure Low	01/30/2020
		4321541	Boron Solution in 2A SBLC Gear Case 2-1102-A	02/26/2020
		4323520	HPCI FIC Stuck at Max Flow	03/03/2020
	4324419	Intentionally Abbreviated Maint. on U1 HPCI Signal Converter	03/06/2020	
Drawings	4E-1351A	Schematic Diagram Engine Control and Generator Excitation	AP	



Inspection Procedure	Type	Designation	Description or Title	Revision or Date	
			Standby Diesel Generator 1/2		
		4E-1351A	Loop Schematic Diagram Engine RPM Indication and Control on Local DG Panel Standby Diesel - Gen 1/2	B	
		4E-1351A	Schematic Control Diagram Engine Control and Generator Excitation Standby Diesel Generator 1/2	AU	
		4E-2345	Schematic Diagram 4160 V Bus 23-1 Standby Diesel Half Feed Breakers	BE	
	Engineering Changes	630446	Evaluation to Support Backseating of PCIV MO 2-2301-5 Valve to Minimize or Stop Packing Leakage	0	
	Engineering Evaluations	630927	Evaluate the Effect of the High Pressure Coolant Injection (HPCI) Signal Converter Span Shift on the Output to the Motor Gear Unit	00	
	Procedures	OP-AA-103-105	Limitorque Motor-Operated and Chainwheel Operated Valve Operations	5	
		QCOS 2300-05	HPCI Pump Operability Test	84	
		QOS 0005-S01	Operation Department Weekly Summary of Daily Surveillance	193	
	Work Orders	4997074	Emergency Portable Pump (B.5.B / FLEX)	01/29/2020	
	71111.19	Corrective Action Documents	4308853	2B FRV Locked Up	01/08/2020
			4309623	4.0 Critique - 2B FRV Downpower	01/12/2020
NDE Reports		2019-MT-023	Magnetic Particle Examination Data Sheet	01/03/2020	
		2020-MT-003	Magnetic Particle Examination Data Sheet	01/15/2020	
		2020-MT-010	Magnetic Particle Examination Data Sheet	03/04/2020	
Procedures		QCMMS 4100-33	1/2-4101B Diesel Driven Fire Pump Capacity Test	35	
		QCOS 1000-33	Unit 1 'B' LOOP LPCI And Containment Cooling Modes of RHRS Non-Outage Logic Test	35	
		QCOS 1300-05	RCIC Pump Operability Test	57	
Work Orders		4897578-04	MM Reactor Head Lifting Rig Load Test	03/05/2020	
	4995442	RCIC Pump Operability (IST)	03/23/2020		
71111.22	Procedures	QCOS 7500-05	SBGTS Monthly Operability Test	31	
		QCOS 7500-06	SBGTS Power Operated Valve Test	25	
		QIS 0004-01	RBM Rod Block Calibration	35	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		QIS 0004-02	RBM Rod Block Functional Test	27
	Work Orders	4985869	'A' SBLC Pump Flow Rate (IST)	03/02/2020
71152	Corrective Action Documents	4303137	Potential Part 21 - Hardware Failure in Rad Monitoring System	12/11/2019
		4304079	QOS 5600-01 Follow Up for Engineering Eval for Preconditioning	12/16/2019
		4315964	Unable to Complete QCIS 0300-05	02/06/2020
		4319929	1B RHRSW Discharge Piping Leak	02/21/2020
		4320747	U1 HPCI Gland Seal Exh. Expansion Coupling Hose Clamp Broken	02/24/2020
		4330129	IEMA [Illinois Emergency Management Agency] Identified Items	03/27/2020
71153	Corrective Action Documents	4310549	Emergency Vehicle on Site	01/16/2020
		4310554	U1 SBO Isolimiter Fire	01/16/2020
		4310830	4.0 Critique for U1 SBO Isolimiter Fire	01/17/2020