UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

August 5, 2020

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

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000317/2020002 AND 05000318/2020002

Dear Mr. Hanson:

On June 30, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant, Units 1 and 2. On July 29, 2020, the NRC inspectors discussed the results of this inspection with Mr. Thomas Haaf and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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,

X /RA/

Signed by: Matthew R. Young
Matthew R. Young, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos. 05000317 and 05000318
License Nos. DPR-53 and DPR-69

Enclosure:
As stated

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SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000317/2020002 AND 05000318/2020002 DATED AUGUST 5, 2020

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OFFICE	RI/DRP	RI/DRP	RI/DRP		
NAME	RClagg	LCline	MYoung		
DATE	8/4/2020	8/4/2020	8/4/2020		

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers:	05000317 and 05000318
License Numbers:	DPR-53 and DPR-69
Report Numbers:	05000317/2020002 and 05000318/2020002
Enterprise Identifier:	I-2020-002-0090
Licensee:	Exelon Generation Company, LLC
Facility:	Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Location:	Lusby, MD
Inspection Dates:	April 1, 2020 to June 30, 2020
Inspectors:	E. Bousquet, Resident Inspector R. Clagg, Senior Resident Inspector D. Kern, Senior Reactor Inspector C. Roettgen, Senior Resident Inspector D. Werkheiser, Senior Reactor Analyst
Approved By:	Matthew R. Young, Chief Reactor Projects Branch 5 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 Calvert Cliffs Nuclear Power Plant, 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.

List of Findings and Violations

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

Additional Tracking Items

None.

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On June 13, 2020, the unit was down powered to 83 percent to support main turbine valve testing. The unit was returned to rated thermal power on June 13, 2020, and remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On May 16, 2020, the unit was down powered to 85 percent to support main turbine valve testing. The unit was returned to rated thermal power on May 16, 2020, and remained at or near rated thermal power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors 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. As a result, at the beginning of the inspection period, resident inspectors performed periodic site visits each week, conducted plant status activities as described in IMC 2515, Appendix D, observed risk significant activities, and completed other onsite inspection activities as appropriate to the COVID-19 conditions onsite. During the remainder of the inspection period, required resident and regional baseline inspection samples were continually evaluated to determine if all or a portion of the requirements associated with each IP could be met through remote inspection or required onsite inspection activities. Based on this evaluation, and an ongoing assessment of the COVID-19 conditions onsite, inspection activities were completed remotely or onsite as appropriate. Unless otherwise noted, the inspection samples documented below met all the requirements of the applicable IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

(1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal hot temperatures for the Units 1 and 2 offsite and alternate AC power systems and the saltwater systems on June 18, 2020.

Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending forecasted severe thunderstorms and high winds on April 13, 2020.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (6 Samples)

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

(1) Unit 1, 12 component cooling train during 11 component heat exchanger out of service for maintenance, April 1, 2020
(2) Unit 2, 21 component cooling train during 22 component heat exchanger out of service for maintenance, April 7, 2020
(3) Unit 2, 2A emergency diesel generator during maintenance precluding the loading of the 2B emergency diesel generator, April 16, 2020
(4) Unit 1, 11 saltwater header during 12 saltwater header out of service for valve maintenance, May 4, 2020
(5) Unit 2, 21 switchgear room heating, ventilation, and air conditioning during 22 switchgear ventilation, 23 and 24 containment air coolers out of service for maintenance, May 13, 2020
(6) Unit 1, 11 and 12 auxiliary feedwater pumps during 13 auxiliary feedwater pump out of service for maintenance, May 26, 2020

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

(1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2 service water system on June 30, 2020.

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (7 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) Units 1 and 2, 1B, 2A, and 2B emergency diesel generators, fire areas 28, 30, and 31, April 9, 2020
(2) Units 1 and 2, outside yard area and buildings, including fire pump house, fire area YARD, April 13, 2020
(3) Unit 1, 27' and 45' switchgear rooms and purge air room, fire areas 19, 19A, and 34, April 16, 2020
(4) Unit 2, 27" and 45' switchgear rooms and purge air room, fire ares 18, 18A, and 25, April 16, 2020
(5) Unit 1, east and west electrical penetration rooms, fire areas 32 and 33, April 20, 2020

(6) Unit 2, east and west electrical penetration rooms, fire areas 26 and 27, April 20, 2020
(7) Unit 2, auxiliary feedwater pump room, fire area 43, April 28, 2020

71111.07A - Heat Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) Unit 2, 22 component cooling heat exchanger, April 7, 2020

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

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

(1) The inspectors observed and evaluated a training event involving post-trip immediate actions and reactor trip emergency operating procedures on June 18, 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) Unit 1, AR04328167, 11 emergency core cooling system air cooler saltwater relief valve leaking by, April 21, 2020

Aging Management (IP Section 03.03) (1 Sample)

The inspectors evaluated the effectiveness of the aging management program for the following SSCs that did not meet their inspection or test acceptance criteria:

(1) AR04337806, AR04338727, AR04339024, and AR04339875, cable aging management program elements implemented to verify health of inaccessible medium voltage cables potentially exposed to wet conditions, May 6, 2020

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (8 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) Unit 1, Yellow risk condition due to 11 component cooling heat exchanger out of service for maintenance, April 1, 2020
(2) Unit 2, Yellow risk condition due to 22 component cooling heat exchanger out of service for maintenance, April 7, 2020

(3) Unit 2, Yellow risk condition due to 21 component cooling heat exchanger out of service for maintenance, April 22, 2020
(4) Unit 1, unique configuration specific plant risk analysis for 11 saltwater pump out of service for maintenance, April 24, 2020
(5) Unit 1, Yellow risk condition due to 12 saltwater header out of service for valve maintenance, May 4, 2020
(6) Unit 2, elevated risk condition due to 22 switchgear ventilation, 23 and 24 containment air coolers out of service for maintenance, May 13, 2020
(7) Unit 1, Yellow risk condition due to 13 auxiliary feedwater pump out of service for maintenance, May 26, 2020
(8) Units 1 and 2, risk informed completion time for electrical distribution reliability improvement project, June 3, 2020

71111.15 - Operability Determinations and Functionality Assessments

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

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

(1) Unit 1, AR04335558, 1-CV-5208 failed drop test/stroke length during air-operated valve test, April 21, 2020
(2) Unit 1, AR04335620, 1-CV-5163 found to have excessive travel and high friction, April 21, 2020
(3) Unit 2, AR04339044, 2-HVAC-5429, 2A emergency diesel generator exhaust damper, failed to open until approximately 15 minutes after 2A emergency diesel generator start, April 28, 2020
(4) Unit 1, AR04341939, 1B emergency diesel generator ventilation fan recirc damper will not modulate, May 8, 2020
(5) Unit 2, AR04346113, 23 saltwater pump thrust bearing temperature is elevated, May 27, 2020
(6) Unit 2, AR04346924, flange leak downstream of 2-SW-5173, 22 emergency core cooling system cooler inlet isolation valve, June 1, 2020
(7) Unit 1, AR04349329, 12 saltwater pump failed motor testing, June 10, 2020

71111.18 - Plant Modifications

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

The inspectors evaluated the following temporary or permanent modifications:

(1) ECP-19-000214, Units 1 and 2, containment air cooler replace relays and add surge suppression, April 15, 2020

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (7 Samples)

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

(1) Unit 1, WO C93730273, clean 12 component cooling heat exchanger tubes and inspect saltwater piping, April 15, 2020
(2) Unit 1, WO C93713742, replace saltwater outlet for 12 component cooling heat exchanger, April 16, 2020
(3) Unit 1, WO C93713790, replace diaphragm on 1-CV-4533, 12 steam generator auxiliary feedwater block valve, April 22, 2020
(4) Unit 1, WO C93670684, diagnostic testing for 1-MOV-399, shutdown cooling heat exchanger recirculation isolation valve, April 23, 2020
(5) Unit 1, WO C93703392, replace 12 high pressure safety injection pump motor, May 12, 2020
(6) Unit 1, WO C93706590, inspect and lubricate 13 auxiliary feedwater pump coupling and check alignment, May 26, 2020
(7) Unit 1, WO C93708012, lubricate 12 spent fuel pool cooling pump motor, June 9, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (3 Samples)

(1) STP-F-77-0, "Staggered Test of Diesel Fire Pump," Revision 1007, April 6, 2020
(2) STP-O-067G-1, "Safety Injection Check Valve Cold Shutdown Test," Revision 5, April 23, 2020
(3) STP-F-76-0, "Staggered Test of Electric Fire Pump," Revision 1007, April 28, 2020

Inservice Testing (IP Section 03.01) (1 Sample)

(1) STP-O-065-1, "High Pressure Safety Injection and Low Pressure Safety Injection Check Valve Closure Test," Revision 04000, May 14, 2020

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (2 Samples)

(1) Unit 1, April 1, 2019 - March 31, 2020
(2) Unit 2, April 1, 2019 - March 31, 2020

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 that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (IP Section 02.03) (3 Samples)

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

(1) Unit 1, review the evaluation and corrective actions for AR04287312, "Halon Actuation Due to Fire Event," multiple halon bottles failed to actuate
(2) NCV 05000317, 05000318/2011004-01, Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables
(3) Units 1 and 2, technical specification interpretation and operability determination operating experience smart sample FY2012-02

INSPECTION RESULTS

Minor Violation	71152
Minor Violation: The inspectors determined that both the work instructions and the performance of periodic manhole/handhole inspections for submerged cables were deficient. Contrary to ER-AA-300-150, "Cable Aging Management Program," Revision 5, since January 2015, station personnel did not initiate issue reports to evaluate submerged cable health or adjust manhole/handhole inspection and pumping frequency when excessive cable moisture environments (submerged cable) were observed. Specifically, station personnel found submerged cables on five of nine semiannual inspections from 2015-2019, but did not initiate issue reports or notify the cable program owner for evaluation of the degraded cable conditions. The licensee initiated issue reports 04338151, 04338778, and 04339863 to restore compliance. Screening: The inspectors determined the performance deficiency was minor. The deficiency did not result in cable failures which adversely affected plant equipment. Additionally, submerged cable conditions identified during periodic inspections were promptly remediated so that cables did not remain in an adverse submerged environment for an extended time period. The licensee performed periodic testing on some of the submerged cables and to date, this testing has not identified severely degraded cable. The as-found condition was such that there was not reasonable doubt of the capability of cables to power their supported components. Enforcement: This failure to comply with ER-AA-300-150 and Technical Specification 5.4.1, "Procedures," constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.	

Observation: Technical Specification Interpretation and Operability Determination Operating Experience Smart Sample FY2012-02	71152
The inspectors implemented guidance in Operating Experience Smart Sample 2012-02, and reviewed technical specification bases changes made from April 1, 2017 to March 31, 2020, and associated 10 CFR 50.59 evaluations for those changes. Additionally, the inspectors reviewed selected operability determinations associated with systems that experienced a technical specification basis change to determine if non-conservative interpretations of the technical specification bases resulted in any inadequate operability determinations. The inspectors determined that the licensee followed local procedures and met regulatory requirements while making technical specification bases changes. The inspectors also	

determined that operability determinations associated with systems that had experienced technical specification bases changes met licensee procedures and were adequately conducted.

Observation: NCV 05000317, 05000318/2011004-01, Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables	71152
The inspectors determined that the causal evaluation and corrective action to address Non-Cited Violation 05000317, 318/2011-004-01, "Inadequate Corrective Actions Associated with Submerged Saltwater Pump Motor Cables," were adequate to address the identified submerged condition of the saltwater pump motor cables; however, deficiencies were identified in actions to verify continued health and performance for other cables subject to a wet environment. These deficiencies are dispositioned in the minor violation described above.	

EXIT MEETINGS AND DEBRIEFS

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

- On July 29, 2020, the inspectors presented the integrated inspection results to Mr. Thomas Haaf and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Corrective Action Documents Resulting from Inspection	IR 04337806	Incorrect Insulation Resistance Test Acceptance Criteria	Revision 0
		IR 04338727	Send Old SWP Motor Cables for Forensic Testing	Revision 0
		IR 04339024	Revise AMBD-0036 Note	Revision 0
		IR 04339875	Evaluate Event Driven Inspections	Revision 0
	Miscellaneous	Calvert Cliffs Unit 1 and 2 Updated Final Safety Analysis Report, Section 16.2.9, CABLE AGING MANAGEMENT PROGRAM	Revision 51	
	Procedures	AMPD-0036	Cable Aging Management Program	Revision 2
		ER-AA-300-150	Cable Condition Monitoring Program	Revision 5
71152	Corrective Action Documents	CR 2011-6836	JB 2J025A West Wall Intake Structure – CW, SW	6/29/2011
		CR 2011-6838	JB 2J025B West Wall Intake Structure -23 SW pump conduit/junction box leaking water (intake structure)	6/29/2011
	Corrective Action Documents Resulting from Inspection	IR 04338151	Cable Aging Management Program Data not Sent to Cable Program Owner	Revision 0
		IR 04338778	Deficient Manhole & Handhole Inspection Work Instructions	
		IR 04339863	Failure to Initiate Issue Reports for Manhole Inspection Program	
	Miscellaneous	EPRI TR 3002000557	Plant Engineering: Aging Management Program Guidance for Medium-Voltage Cable Systems for Nuclear Power Plants	06/30/2013
		EPRI TR 3002010618	Submergence Qualification of High-Temperature Kerite Medium-Voltage Cable: Final Report	11/30/2017
	Operability Evaluations	OD 11-02	Salt Water Pump Submerged Cable Evaluation	Revision 4
	Procedures	CNG-CA-1.01-1000	Corrective Action Program	Revision 3
		ER-AA-300-150	Cable Condition Monitoring Program	Revision 5
	Work Orders	C92078758	Insulation Resistance Test for 13SWP	11/16/13

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		C93662121	Insulation Resistance Test for 13SWP	05/09/2019
		C93668388	Semi-Annual Manhole Hand-Hole Inspection for Submerged Cables	07/19/2019