UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., Suite 100
KING OF PRUSSIA, PA 19406-2713

October 31, 2017

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 – INTEGRATED INSPECTION REPORT 05000317/2017003 AND 05000318/2017003

Dear Mr. Hanson:

On September 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Calvert Cliffs Nuclear Power Plant (CCNPP), Units 1 and 2. On October 11, 2017, the NRC inspectors discussed the results of this inspection with Mr. Mark Flaherty, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

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

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

Sincerely,

/RA/

Anthony Dimitriadis, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos. 50-317 and 50-318
License Nos. DPR-53 and DPR-69

Enclosure:
Inspection Report 05000317/2017003 and
05000318/2017003
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT – INTEGRATED INSPECTION REPORT 05000317/2017003 AND 05000318/2017003 DATED OCTOBER 31, 2017

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REGION I

Docket Nos.	50-317 and 50-318
License Nos.	DPR-53 and DPR-69
Report Nos.	05000317/2017003 and 05000318/2017003
Licensee:	Exelon Generation Company, LLC (Exelon)
Facility:	Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Location:	Lusby, MD
Dates:	July 1, 2017, through September 30, 2017
Inspectors:	R. Clagg, Senior Resident Inspector C. Roettgen, Resident Inspector M. Hardgrove, Project Engineer J. Hawkins, Senior Resident Inspector R. Vadella, Emergency Response Coordinator
Approved by:	Anthony Dimitriadis, Chief Reactor Projects Branch 1 Division of Reactor Projects

TABLE OF CONTENTS

SUMMARY

Inspection Report 05000317/2017003, 05000318/2017003; 7/01/2017 – 9/30/2017; Calvert Cliffs Nuclear Power Plant (CCNPP), Units 1 and 2; Routine Integrated Inspection Report.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections performed by regional inspectors. No findings were identified. The Nuclear Regulatory Commission's (NRC) program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent power. On September 28, 2017, operators reduced power to 80 percent for main turbine valve testing. On September 29, the unit was restored to 100 percent power. The unit remained at or near 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent power. On August 2, 2017, operators reduced power to 65 percent for 22 steam generator feedwater pump repairs and restored the unit to 100 percent power the same day. On September 10, operators reduced power to 83 percent power for man turbine valve testing and restored the unit to 100 percent power the same day. The unit remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 1 sample)

External Flooding

a. Inspection Scope

During the week of August 8, 2017, the inspectors performed an inspection of the intake structure for Units 1 and 2. The inspectors reviewed technical specification (TS), procedures, design documents, and Updated Final Safety Analysis Report (UFSAR), Chapter 2.4.2.4, which depicted the design flood levels and protection areas containing safety-related equipment to identify areas that may be affected by external flooding. The inspectors conducted a general site walkdown of all external areas of the plant, including the intake structure, the emergency diesel generator (EDG) rooms, and west road relay houses to ensure that Exelon Generation Company, LLC (Exelon) erected flood protection measures in accordance with design specifications. Where applicable, the inspectors determined installed flood seal service life and verified that adequate procedures existed for inspecting the installed seals. The inspectors also reviewed operating procedures for mitigating external flooding during severe weather and confirmed that, overall, Exelon had established adequate measures to protect against external flooding events and, more specifically, that credited operator actions were adequate. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q – 4 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the systems listed below. The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable procedures, system diagrams, the UFSAR, TSs, work orders (WO), action requests (AR), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted the system's performance of its intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify that system components and support equipment were properly aligned and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether staff had properly identified equipment issues and entered them into the corrective action program (CAP) for resolution with the appropriate significance characterization.

- Unit 2, 22 emergency core cooling system (ECCS) train during 21 ECCS train out of service due to 2-SW-5171 (21 ECCS air cooler control valve (CV)) failed to open on stroke time, July 6, 2017
- 21 and 22 containment air coolers and containment spray pumps during 23 containment air cooler out of service, July 28, 2017
- 11 and 12 containment air coolers and containment spray pumps during 13 containment air cooler out of service, August 7, 2017
- 1B EDG during 1A EDG out of service for maintenance, September 20, 2017

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 4 samples)

a. Inspection Scope

The inspectors conducted a tour of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Exelon controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Unit 2, 27' Switchgear Room, Fire Area 18, August 8, 2017
- Unit 2, Purge Air Room, Fire Area 18A, August 8, 2017
- Unit 2, 45' Switchgear Room, Fire Area 25, August 8, 2017
- Outside Yard Area and Buildings, includes Fire Pump House, Fire Area 21, August 11, 2017

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)

a. Inspection Scope

The inspectors reviewed the 21 and 22 component cooling heat exchangers (HX) readiness and availability to perform their safety functions. The inspectors reviewed the design basis for the component and verified Exelon's commitments to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." The inspectors observed actual performance tests for the HXs and/or reviewed the results of previous inspections. The inspectors discussed the results of the most recent inspection with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Exelon initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the HX did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11Q – 2 samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on August 22, 2017, which involved a steam generator tube rupture, stuck open steam generator safety valve, and a failed reactor coolant pump seal, resulting in a site area emergency declaration. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the TS action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed and reviewed the downpower and main turbine valve testing conducted on Unit 2, September 10, 2017. The inspectors observed infrequently performed test or evolution briefings, pre-shift briefings, and reactivity control briefings to verify that the briefings met the criteria specified in Exelon procedures, OP-AA-103-102, "Watch Standing Practices," Revision 16, and HU-AA-1211, "Pre-Job Briefings," Revision 11. Additionally, the inspectors observed evolution performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance WOs, and maintenance rule basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.65 and verified that the (a)(2) performance criteria established by Exelon staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). The inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries. Additionally, inspectors verified quality control verifications are properly specified in accordance with the Quality Assurance Program, and are implemented as specified.

- AR04035456, 21 switchgear heating, ventilation, and air conditioning breaker tripped, short circuit indicated
- Review of quality verifications for WOs C92961725, C92350192, C93325372, C92289253, and C92341252

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors determined that Exelon performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify that plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unit 1, Maintenance risk assessment for 13 charging pump alignment inspection/replacement and discharge relief valve 1-RV-324 overhaul, July 5-6, 2017
- Unit 2, Updated maintenance risk assessment for 2-SW-5171 CV failed open on stroke time, July 6, 2017
- Unit 2, Updated maintenance risk assessment for 22A and 22B service water (SRW) HX plenum cleaning with 22 SRW out of service for bay temperature > 80 F, July 19, 2017
- Unit 2, Updated maintenance risk assessment for 23 containment air cooler failed to start in slow speed, July 28, 2017
- Unit 1, Updated maintenance risk assessment for 13 containment air cooler circuit failed, August 8, 2017
- Unit 1, Updated maintenance risk assessment for 12B SRW HX out of service, August 29, 2017

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 7 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the degraded or non-conforming conditions listed below based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to Exelon staff's evaluations to determine whether the components or systems were operable. The inspectors confirmed, where appropriate, compliance with bounding limitations associated with the evaluations. Where compensatory measures were required to maintain operability, such as in the case of operator work arounds, the inspectors evaluated whether the measures in place would function as intended and were properly controlled by Exelon staff.

- 2-SW-5171 CV failed open on stroke time (AR04028976)
- Vibration increasing on 23 high pressure safety injection pump bearing (AR04037460)
- 1CV5159A did not operate on auto flush (AR04045989)
- OF1 found melted cubicle stab connections (AR04047266)
- 1RIT5421 – 11 main steam effluent radiation monitor is malfunctioning (AR04050546)
- Fan housing base plate corroded, caulking is degraded (AR04052717)
- Spalling concrete above and west of 23 saltwater pump motor (AR04053075)

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

Permanent Modifications

a. Inspection Scope

The inspectors evaluated the modifications listed below and verified that the design basis, licensing bases, and performance capability of the affected systems were not degraded by the modifications. In addition, the inspectors reviewed modification documents associated with the upgrade and design change. The inspectors also reviewed revisions to the control room alarm response procedure and interviewed engineering and operations personnel to ensure the procedure could be reasonably performed.

- ES200800185-001, “Saltwater Chemical Addition,” Revision 003
- ECP-16-000742, “Replace 1A EDG Governing and Control System,” Revision 003

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the test results were properly reviewed and accepted and problems were appropriately documented. The inspectors also walked down the affected job site, observed the pre-job brief and post-job critique where possible, and confirmed work site cleanliness was maintained. Additionally, the inspectors witnessed the test or reviewed test data to verify quality control hold points were performed and checked, and ensured that results demonstrated adequate restoration of the affected safety functions.

- WO C92350192, dated February 17, 2017, overhaul valve and actuator 2-CV-5171, July 27, 2017

- WO C93635104, 2-CVC-512 CV leaks by, August 15, 2017
- WO C93623804, functional test charging pump 21 control relay, August 28, 2017
- WO C93637133, 1CV5159A did not operate on auto flush, August 29, 2017
- WO C93596473, remove 22 auxiliary feedwater (AFW) pump strainers and check valves, September 19, 2017
- WO C93593389, modify 1A EDG speed control system, September 20, 2017

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 samples)

a. Inspection Scope

The inspectors observed performance of a surveillance test and reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TS, the UFSAR, and Exelon procedure requirements. The inspectors verified that test acceptance criteria were clear, the test demonstrated operational readiness, and was consistent with design documentation. Additionally, the inspectors ensured that the test instrumentation had current calibrations and the range and accuracy for the application, the test was performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that the equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance test:

- OI-21A, "2A Diesel Generator," Revision 02404, July 5, 2017
- STP-O-5A11-1, "11 Auxiliary Feedwater Pump Quarterly Surveillance Test," Revision 3, July 10, 2017
- STP-O-8B-1, "Test of 1B DG and 14 kV Bus UV," Revision 31, July 10, 2017
- STP-M-212B-1, "Channel 'B' Reactor Protective System Functional Test," Revision 013, July 27, 2017
- STP-O-009-1, "AFAS Logic Test," Revision 1500, August 4, 2017
- STP-O-731-2, "HPSI Pump and Check Valve Quarterly Operability Test," Revision 12, August 8, 2017 (in-service testing)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

Emergency Preparedness Drill Observation

a. Inspection Scope

On July 18, 2017, the inspectors reviewed and observed Exelon's performance of an emergency preparedness drill that involved a simulated failure of ECCS motor operated valves, a reactor trip, a loss of AFW, and high radiation levels in the containment resulting in a General Emergency declaration. The inspectors observed emergency response operations in the simulator, technical support center, and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Exelon staff in order to evaluate Exelon's critique and to determine whether the Exelon staff was properly identifying weaknesses and entering them into the CAP. Drill issues were captured by Exelon in the CAP as ARs 04032950, 04032977, 04033036, 04033388, 04033390, 04033475, 04033477, and 04033478.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Mitigating Systems Performance Index (10 samples)

a. Inspection Scope

The inspectors reviewed Exelon's submittal of the CCNPP Unit 1 and Unit 2 Mitigating Systems Performance Index for the systems listed below for the period July 1, 2016, through June 30, 2017:

- Emergency alternating current power system (MS06)
- High pressure injection system (MS07)
- Heat removal system (MS08)
- Residual heat removal system (MS09)
- Cooling water system (MS10)

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors also reviewed the Exelon's operator narrative logs, ARs, event reports, system health reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 2 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to determine if Exelon entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended AR screening meetings. The inspectors also confirmed, on a sampling basis, that, as applicable, for identified defects and non-conformances, Exelon staff performed an evaluation in accordance with 10 CFR 21.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, "Problem Identification and Resolution," to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely-related issues that may have been documented by Exelon personnel outside of the CAP, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed Exelon's CAP database for the first and second quarters of 2017 to assess condition reports written in various subject areas (equipment problems, human performance issues, etc.), as well as individual issues identified during the NRC's daily inspection report review (Section 4OA2.1). The inspectors reviewed Exelon's quarterly trend report for the first and second quarters of 2017, conducted under PI-AA-125-1005, "Coding and Analysis Manual," Revision 0, to verify that Exelon personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of condition reports generated by departments that provide input to the quarterly trend reports. The inspectors determined that the issues were appropriately evaluated by Exelon staff for potential trends and resolved within the scope of the CAP. The inspectors reviewed self-assessments performed by Exelon outside of the CAP including quarterly performance assessment reports, Nuclear Oversight Audits, and others, and verified that trends identified were input into the CAP and appropriately evaluated.

.3 Annual Sample: Review of Evaluations Performed for Preventative Maintenance Changes Associated with Safety-Related Equipment

a. Inspection Scope

The inspectors performed an in-depth review of evaluations, preventive maintenance (PM) strategies, technical justifications, and corrective actions associated with Exelon's PM optimization process, which included an effort to reclassify system components based on recent changes to industry guidance (AP-913, Equipment Reliability Process Description). These changes were reflected in Exelon's procedures for equipment reliability, component classification, and PM. These changes also included a revision to the industry definition of what constitutes a critical component, which is now defined as any component whose failure can cause a reactor trip, a power reduction greater than 20 percent, a functional failure of a system monitored under a mitigating systems performance index, or a complete loss of safety function or maintenance rule high safety-significant functional failure. Exelon's engineering reclassification of critical components was initiated in October 2016 and captured in the CAP in ARs 02721166, 02715053, and 03964936. The final critical component validation review was performed by the PM Oversight Committee in May 2017 (AR04002733).

The inspectors reviewed Exelon's identification, assessment, and documentation of the critical component and PM changes in the CAP, associated evaluations, extent of condition reviews, and the prioritization and timeliness of Exelon's actions to determine whether Exelon's corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Exelon's procedures and 10 CFR Part 50, Appendix B. In addition, the inspectors reviewed engineering technical justifications and interviewed maintenance, engineering, and operations personnel to assess the effectiveness of the implemented corrective actions.

b. Findings and Observations

No findings were identified.

The inspectors noted in the industry guidance that the desired end state for each site was to reduce the number of critical components by as much as 50 percent through revising the critical component definition to include only those components whose direct failure could result in unacceptable consequences. The results of Exelon's critical component reclassification effort resulted in a decrease of approximately 30 percent of the total number of critical components onsite. The inspectors found this to be comparable to, but on the low end of, the industry average reduction in critical components.

The inspectors reviewed and assessed critical component designation changes and PM changes in several risk significant systems. In total 96 PM changes were reviewed. A significant majority (~70 percent) of these PM changes were concentrated in 3 high risk significant systems, EDG, AFW, and Safety Injection.

The inspectors verified that the programmatic changes to the station's equipment reliability program were appropriately proceduralized, and found that overall, Exelon's critical component reclassification and PM optimization process was appropriately managed, conservatively applied, and technically justified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 11, 2017, the inspectors presented the inspection results to Mr. Mark Flaherty, Site Vice President, and other members of the Exelon staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
M. Flaherty, Site Vice President
T. Tierney, Plant General Manager
M. Fick, Principal Engineer, Regulatory Assurance
K. Greene, Principal Engineer, Regulatory Assurance
C. Jackson, Engineering Manager
B. Larrabee, Senior Maintenance Specialist
B. Lynch, System Engineer
D. Schrumpf, CMO Manager
N. Smith, System Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
OP-AA-108-111-1001, Severe Weather Preparation, Revision 001

Action Requests
02717572
03981849
03984928
04002212
04040256*
04040271*
04040272*
04040274*

Miscellaneous
RAN-97-031, CCNPP Individual Plant Examination of External Events Summary Report, Revision 4
Updated Final Safety Analysis Report, Revision 48
WO C93568237
WO C93613233
WO C93619109

Section 1R04: Equipment Alignment

Procedures
O-65N-2, 21 Saltwater Subsystem Valve Quarterly Operability Test, Revision 9

Action Request
04028976

Miscellaneous
WO C93630757

Section 1R05: Fire Protection

Procedures
HR-AA-07-107, Fire Brigade Surveillance Exam, Revision 004

Miscellaneous
Calvert Cliffs Nuclear Power Plant License Amendment Request for Transition to 10 CFR 50.48(c) - NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition, September 24, 2013

Section 1R07: Heat Sink Performance

Procedures
CC-02, Component Cooling Water Heat Exchanger Tube Cleaning, Revision 00300
ETP 01-005R, Single Tube Thermal Performance Testing for 21 & 22 CCHX, Revision 00500
GEN-14, Component Cooling Heat Exchanger Tube Plugging, Revision 00800

Action Requests
04028711

Drawings
62710SH002, Component Cooling System, Revision 31

Miscellaneous
ECP-13-000833, Engineering Evaluation of Results of Thermal Performance Test of 21 Component Cooling Heat Exchanger, Revision 0
ECP-15-000207, Engineering Evaluation of Results of Thermal Performance Test of 11 and 22 Component Cooling Heat Exchangers, Revision 0
WO C91767228
WO C91938620
WO C92939260
WO C92952569
WO C93204354
WO C93386396
WO C93609718

Section 1R11: Licensed Operator Requalification Program

Procedures
EP-AA-125-1002, ERO Performance Indicators Guidance, Revision 12
TQ-AA-155, Conduct of Simulator Training and Evaluation, Revision 6

Miscellaneous
Simulator Operating Examination for the Licensed Operator Training Program at the Calvert Cliffs Nuclear Power Plant, administered on August 22, 2017
Key ERO Participation (R.EP.02) and ERO Stability (EPPI.02b) Monthly Data Reporting Elements for August 2017

Section 1R12: Maintenance Effectiveness

Procedures
NO-AA-300-1001, Nuclear Oversight Independent Inspection Plan, Revision 009

Miscellaneous
2017 CCNPP QIRLOG2017 TEMPLATE.xlsx dated September 28, 2017

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures
I-139, Service Water Heat Exchanger Venting Procedure, Revision 00200
O-65N-2, 21 Saltwater Subsystem Valve Quarterly Operability Test, Revision 9
OI-29, Saltwater System, Revision 06800
WC-AA-104, Integrated Risk Management, Revision 24

Action Request
04028976

Miscellaneous
WO C93406726
WO C93411313
WO C93618047
WO C93619141
WO C93630757

Section 1R15: Operability Determinations and Functionality Assessments

Procedures
EN-4-108, ASME Inservice Testing of Power-Operated Valves and Manual Valves, Attachment 7, Revision 00403
O-65N-2, 21 Saltwater Subsystem Valve Quarterly Operability Test, Revision 9
OP-AA-101-113-1004, Guidelines for the Morning Plant Status Call, Attachment 2, Revision 37

Action Requests
04052717*
04052858*
04053075*

Miscellaneous
Email on July 6, 2017, that constitutes the IST Program Post-Performance Evaluation required by EN-4-108, Attachment 7 for Operability
WO C93630757
ES200300142, Q-LOG-1013, Revision 000

Section 1R18: Plant Modifications

Procedures
AMBD-0026, Caulk and Seal Program, Revision 0300

Action Requests
04040256
04040271
04040272
04040274

Drawings
60718SH0001, Sodium Hypochlorite Salt Water Chemical Addition System, Revision 9
92769, M-601 Piping Class Summary Sheets, Revision 50

Miscellaneous
ES200300142-000, Revision 003
ES200800185-001, Revision 003

Section 1R22: Surveillance Testing

Procedures
O-008A-2, Test of 2A EDG and 4KV Bus 21 UV, Revision 03000
OI-21A, 2A Diesel Generator, Revision 02404

Action Requests
04028743

Miscellaneous
WO C93450754

Section 1EP6: Drill Evaluation

Procedures
Calvert Cliffs Nuclear Power Plant Emergency Preparedness – Emergency Response Drill Scenario, July 18, 2017

Action Requests
04032950
04032977
04033036

Section 4OA1: Performance Indicator Verification

Miscellaneous
Mitigating System Performance Index CDE data entry forms for PI MS06, July 2016- June 2017
Mitigating System Performance Index CDE data entry forms for PI MS07, July 2016- June 2017
Mitigating System Performance Index CDE data entry forms for PI MS08, July 2016- June 2017
Mitigating System Performance Index CDE data entry forms for PI MS09, July 2016- June 2017
Mitigating System Performance Index CDE data entry forms for PI MS10, July 2016- June 2017
Operations Narrative Logs July 2016-June 2017

Section 4OA2: Problem Identification and Resolution

Procedures
ER-AA-20, Equipment Reliability Program Description, Revision 5
ER-AA-200, Preventive Maintenance Program, Revision 2
ER-AA-200-1001, Equipment Classification, Revision 2
ER-AA-200-1002, Preventive Maintenance Oversight Committee, Revision 0

Action Requests

02578514	02715053	03971443
02587892	02718003	03973040
02613592	02721166	03987691
02669142	02727673	04003435
02679716	03943161	04011953
02687231	03961127	04011953
02693319	03964936	04022676
02708290	03971121	

Miscellaneous
CCNPP PMOC Meeting Agendas dated June 1, July 6 and July 13, 2017
IQ Review Summary of Critical and Significant PM Changes for System 024 – FBM and SACM EDGs from January 2015 to July 2017
IQ Review Summary of Critical and Significant PM Changes for System 036 – AFW from January 2015 to July 2017
IQ Review Summary of Critical and Significant PM Changes for System 052 – SI from January 2015 to July 2017
PM 20122106
PM 20601013
PM 20642039
PM 20642040
PMC-16-000096, Change Frequency of 21 Battery Performance Test (20020035) from 730 days to 1460 days
PMC-17-000138, Remove Cable CAMP testing from 2 year PM 20030018 and create 6 year PM to perform task
PMC-17-000295, SG Manways Removed from Appendix J LLRT Program
PMC-17-000315, Change Frequency for Generator Inspections from 6 years to 8 years (20980026)
PMC-17-000836, Cancel Unit 1 and Unit 2 RCP Oil Cooler Encapsulation Plexiglas Inspection
PMC-17-001246, Delete PM 20932093
PMC-17-001600, PM 10520055 One Time Frequency Change and Move to 2020 for Divisional Strategy Alignment
PMC-17-001828, Extend Site Self-Power Protective Relay PM Frequency from 730 to 1460 days (10030021, 20030011)
PMC-17-001866, Delete PMs Associated with 2RY2B1527/X1
PMC-17-001934, Extended Frequency of 10450110[EQ] and 10450111[EQ] from 20 years to 32 years due to EQ Calc. Change
PMC-17-002033, Change Frequency of PM 10870001[B] from 2 to 4 years
PMC-17-002065, New AOV Categorization No Longer Requires Periodic Diagnostic Testing
PMC-17-002085, New AOV Categorization No Longer Requires Periodic Diagnostic Testing
PMC-17-002349, Revise PM 20772002 Frequency to Align with Corporate Template
PMC-17-002731, FBM DG Fuel Transfer Pumps
PMCR-P-CAL-039701

LIST OF ACRONYMS

10 CFR	Title 10 of the *Code of Federal Regulations*
AFW	auxiliary feedwater
AR	action request
CAP	corrective action program
CCNPP	Calvert Cliffs Nuclear Power Plant
CV	control valve
ECCS	emergency core cooling system
EDG	emergency diesel generator
Exelon	Exelon Generation Company, LLC
HX	heat exchanger
kV	Kilovolt
NRC	Nuclear Regulatory Commission
PM	preventative maintenance
PMC	preventative maintenance changes
SRW	service water
SSC	structure, system, and component
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
WO	work order