



**Larry D. Smith**  
Manager-Regulatory Assurance

Calvert Cliffs Nuclear Power Plant  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657

410 495 5219 Office

www.exeloncorp.com

larry.smith2@exeloncorp.com

June 14, 2018

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Calvert Cliffs Nuclear Power Plant, Unit No. 1  
Renewed Facility Operating License No. DPR-53  
NRC Docket No. 50-317

Subject: Inservice Inspection Report

Reference: 1. American Society of Mechanical Engineers, Boiler & Pressure Vessel Code,  
Section XI, Article IWA-6000

Pursuant to Reference 1, please find enclosed the Inservice Inspection Report for the Calvert Cliffs Nuclear Power Plant Unit 1.

There are no regulatory commitments contained in this letter.

Should you have questions regarding this matter, please contact Mr. Larry D. Smith at (410) 495-5219.

Respectfully,

for Larry D. Smith  
Manager – Regulatory Assurance

LDS/PSF/bjm

Enclosure: (1) 2018 Owner's Activity Report for 1-RFO-22 Inservice Examinations

cc: Mr. Robert Gavel

cc: **(Without Enclosure)**  
NRC Project Manager, Calvert Cliffs  
NRC Regional Administrator, Region I

NRC Resident Inspector, Calvert Cliffs  
S. Gray, MD-DNR

AD47  
NRR

**ENCLOSURE (1)**

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**2018 OWNER'S ACTIVITY REPORT FOR  
1-RFO-23 INSERVICE EXAMINATIONS**

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Calvert Cliffs Nuclear Power Plant, LLC  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657



**Fourth Interval / Third Period  
Inservice Inspection Program**

and

**Second Interval / Third Period  
Containment IWE/IWL Program**

**2018 Owner's Activity Report  
for  
1-RFO-23 Inservice Examinations**


Commercial Service Date: May 8, 1975  
NRC Docket Number: 50-317  
Document Number: CCNPP-1-OAR-004-023  
Revision Number: 00

Prepared by: Jeffrey McIntyre 6/12/18  
Jeffrey McIntyre – Site Materials Program Engineer

Prepared by: Mark Weis 6/12/18  
Mark Weis – Corporate ISI Program Owner

Prepared by: Farah Syed 6-12-2018  
Farah Syed – Corporate CISI Program Owner

Approved by: Zemenu Demeke 6/12/18  
Zemenu Demeke – Manager Engineering Programs

	<b>Calvert Cliffs Nuclear Power Plant Unit 1</b> <b>Fourth Interval / Third Period Inservice Inspection</b> <b>Second Interval / Third Period Containment</b> <b>2018 Owner's Activity Report</b> <b>for</b> <b>1-RFO-23 Inservice Examinations</b>	<b>CCNPP-1-OAR-004-023</b> Rev. 00 June 12, 2018 Page 2 of 6

### Abstract

This Owner's Activity Report (OAR) summarizes the results of the Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 1, American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code-(B&PVC), Section XI, Inservice Inspection (ISI) examinations performed in Refueling Outage twenty-three (RFO-23) during the cycle from March 11, 2016 through March 17, 2018. RFO-23 is the only Unit 1 outage of the Third Inservice Inspection Period which began on October 10, 2016 and ends on June 30, 2019. RFO-23 is the fifth and final Unit 1 outage of the Fourth Ten-Year Inservice Inspection Interval, which began on October 10, 2009 and ends on June 30, 2019.

This Owner's Activity Report (OAR) also summarizes the results of the CCNPP Unit 1, ASME, B&PVC, Section XI, Containment Inservice Inspection (CISI) examinations performed in RFO-23 during the period from September 9, 2015 through September 9, 2018. RFO-23 is the second Unit 1 outage of the Third Containment Inservice Inspection Period which began on September 9, 2015 and ends on September 9, 2018. RFO-23 is the fifth and final Unit 1 outage of the Second Ten-Year Containment Inservice Inspection Interval, which began on September 9, 2009 and ends on September 9, 2018.

This report complies with all requirements set forth by ASME B&PVC, Section XI 2004 Edition no Addenda, and Article IWA-6000 as modified by ASME Code Case N-532-4 "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission."

In accordance with ASME Section XI, IWB-2400, IWC-2400, IWD-2400, IWE-2400, IWF-2400, and IWL-2400, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, IWE-2500-1, IWF-2500-1, and IWL-2500-1, and those examinations which CCNPP has requested and received approval in the form of requests for relief or alternates, the required examinations in each examination category have been completed for the Third Inspection Period of the Fourth ISI and Second CISI Intervals in accordance with Tables IWB-2412-1, IWC-2412-1, IWD-2412-1, IWE-2412-1, IWF-2410-2, and IWL-2521-1 and -2.

#### Owner's Activity Reports – Form OAR-1

The Owner's Activity Report, Form OAR-1, was prepared and certified upon completion of examination activities conducted during the Calvert Cliff's Nuclear Power Plant Unit 1, 2018 Refueling Outage (RFO-23) in accordance with the following inspection program plans:

- Fourth Interval Inservice Inspection Program Plan
- Second Interval Containment Inservice Inspection Program Plan
- Fourth Interval Inservice Inspection Pressure Testing Program Plan

In addition to the Owner's Activity Report, Form OAR-1, the following Tables are also included:

- a. **Items with Flaws or Relevant Conditions that Require Evaluation for Continued Service**, Table 1, which provides a listing of item(s) with flaws or relevant conditions that required evaluation to determine acceptability for continued service, whether or not the flaw or relevant condition was discovered during a scheduled examination or test, and provides such information as Examination Category, Examination Item Number, Item Description, Flaw Characterization (as required by IWA-3300).
- b. **Abstract of Repairs, Replacements or Corrective Measures Required for Continued Service**, Table 2, which identifies those items containing flaws or relevant conditions that exceeded the ASME XI acceptance criteria (IWB-3000, IWC-3000, IWD-3000, IWE-3000, IWF-3000, and IWL-3000); even though the discovery of the flaw or relevant condition that necessitated the repair, replacement, or corrective measure may not have resulted from an examination or test required by ASME Section XI, and provides such information as Code Class, item description, description of work, date completed, and the repair replacement plan number.



**Calvert Cliffs Nuclear Power Plant Unit 1**  
**Fourth Interval / Third Period Inservice Inspection**  
**Second Interval / Third Period Containment**  
**2018 Owner's Activity Report**  
**for**  
**1-RFO-23 Inservice Examinations**

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**FORM OAR-1 OWNER'S ACTIVITY REPORT**  
**Fourth Interval/Third Period of Inservice Inspection Program**  
 As required by the provisions of the ASME Code Case N-532-4

Report Number CCNPP-1-OAR-004-023

Plant Calvert Cliffs Nuclear Power Plant

Unit No. 1 Commercial Service Date May 8, 1975 Refueling Outage Number RFO-23  
(if applicable)

Current Inspection Interval Fourth Inservice Inspection Interval – October 10, 2009 to June 30, 2019  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current Inspection Period Third Inservice Inspection Period – October 10, 2016 to June 30, 2019  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the Inspection Plans 2004 Edition, No addenda

Date / Revision of Inspection Plans Rev. 2 Ch. 0 Dated August 19, 2015

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans N/A

Code Cases used: N-460, N-532-4, N-513-3, N-566-2, N-616, N-624, N-639, N-686-1, N-716, N-722-1, N-729-1, N-747, N-753, N-552, and N-586-1

**CERTIFICATE OF CONFORMANCE**

I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of RFO-23 conform to the requirements of Section XI (refueling outage number)

Signed Zemenu Demeke - *Zemenu Demeke* Date June 12, 2018  
 Manager, CCNPP Nuclear Engineering Programs

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Maryland and employed by The Hartford Steam Boiler Inspection and Insurance Co. of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI

By signing this certificate neither the Inspector nor his employer makes any warranty expressed or implied concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection

*[Signature]* Commissions NB 15304 ANI, MD 1328  
(Inspector's Signature) National Board, State, Province, and Endorsements

Date June 12, 2018



**Calvert Cliffs Nuclear Power Plant Unit 1**  
**Fourth Interval / Third Period Inservice Inspection**  
**Second Interval / Third Period Containment**  
**2018 Owner's Activity Report**  
 for  
**1-RFO-23 Inservice Examinations**

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**FORM OAR-1 OWNER'S ACTIVITY REPORT**  
**Second Interval/Third Period of Containment IWE-IWL Inservice Inspection Program**  
 As required by the provisions of the ASME Code Case N-532-4

Report Number CCNPP-1-OAR-004-023

Plant Calvert Cliffs Nuclear Power Plant

Unit No. 1 Commercial Service Date May 8, 1975 Refueling Outage Number RFO-23  
(if applicable)

Current Inspection Interval Second Inservice Inspection Interval – September 9, 2009 to September 9, 2018  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current Inspection Period Third Inservice Inspection Period – September 9, 2015 to September 9, 2018  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the Inspection Plans 2004 Edition, No addenda

Date / Revision of Inspection Plans Rev. 1 Dated Feb. 6, 2014

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans N/A

Code Cases used: N-532-4, N-624, N-686-1, N-739, N-753

**CERTIFICATE OF CONFORMANCE**

I certify that (a) the statements made in this report are correct; (b) the examinations and tests, meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the repair/replacement activities and evaluations supporting the completion of RFO-23 conform to the requirements of Section XI (refueling outage number)

Signed Zemenu Demeke - Zemenu Demeke Date June 12, 2018  
 Manager, CCNPP Nuclear Engineering Programs


**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Maryland and employed by The Hartford Steam Boiler Inspection and Insurance Co. of Hartford, Connecticut have inspected the items described in this Owner's Activity Report, and state that to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI

By signing this certificate neither the Inspector nor his employer makes any warranty expressed or implied concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection


*[Signature]* Commissions NB 15304 ANI, MD 1328  
(Inspector's Signature) National Board, State, Province, and Endorsements

Date June 14, 2018

	<b>Calvert Cliffs Nuclear Power Plant Unit 1</b> <b>Fourth Interval / Third Period Inservice Inspection</b> <b>Second Interval / Third Period Containment</b> <b>2018 Owner's Activity Report</b> <b>for</b> <b>1-RFO-23 Inservice Examinations</b>	<b>CCNPP-1-OAR-004-023</b> Rev. 00 June 12, 2018 Page 5 of 6

**Table 1**  
**Items with Flaws or Relevant Condition that Require Evaluation for Continued Service**  
As required by the provisions of the ASME Code Case N-532-4

Examination Category	Item Number	Item Description	Evaluation Description
B-N-3	B13.70	Core Shroud Tie Rod Found Disengaged	Acceptance by Design Evaluation per ECP-18-000160 and Wesdyne Report CN-SDA-18-12
F-A	F1.10C	14-SC-1004-H-10 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference ESR-18-000191)
F-A	F1.20B	4-SI-1206-R-1 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference IR 04103445 and CA01312)
F-A	F1.20B	H-14, R-19 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference ESR-18-000193)
F-A	F1.30B	H-10, R-10, R-11 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference ESR-18-000196)
F-A	F1.30B	A-1, A-4 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference CA03495 and CA03332)
F-A	F1.30B	R-7 Component Support	Acceptance by Design Evaluation per IWF-3112.3 (Reference IR 04103991)
E-A	E1.11	Leak Chase Channels	Acceptance by Design Evaluation per IWE-3500 (Reference IRs 04105741 and 04110131 and ESR-18-000199)
E-A	E1.11	Liner Plate Bulging	Acceptance by Design Evaluation per IWE-3500 (Reference ESR-18-000198)
L-B	L2.20	Tendon 3D03 Found with 2 Popped Tendon Wires Showing Level 5 Corrosion	Accepted by Responsible Engineer (RPE) (Evaluation per IWL-3221 and documented in IR 02718917 and final report REP-1123-510)
L-B	L2.20	Tendon 35H25 Found to Have 1 Missing Tendon Wire Not Previously Reported	Accepted by Responsible Engineer (RPE) (Evaluation per IWL-3221 and documented in IR 04017816 and final report REP-1123-510)
L-B	L2.50	Free Water (76oz.) was Found Present in Tendon 3D16 Cap	Accepted by Responsible Engineer (RPE) (Evaluation per IWL-3221 and documented in IR 02732316 and final report REP-1123-510)
L-A	L1.11	All Accessible Surface Areas	Accepted by Responsible Engineer (RPE) (Evaluation per IWL-3211 and documented in final report REP-1123-510)

	<b>Calvert Cliffs Nuclear Power Plant Unit 1</b> <b>Fourth Interval / Third Period Inservice Inspection</b> <b>Second Interval / Third Period Containment</b> <b>2018 Owner's Activity Report</b> <b>for</b> <b>1-RFO-23 Inservice Examinations</b>	<b>CCNPP-1-OAR-004-023</b> Rev. 00 June 12, 2018 Page 6 of 6

**Table 2**  
**Abstract of Repairs, Replacements or Corrective Measures Required for Continued Service**  
as required by the provisions of the ASME Code Case N-532-4

Code Class	Item Description	Description of Work	Date Completed	R&R Plan Number
CC	Primary Containment Tendons	Unit 1 Tendon Surveillance and Shim Replacement on Tendon 51H12	11/2/2016	2016-1-034
CC	Unit 1 Containment Structure	Concrete repair of an approximately 1.5" x 20' long void near buttress 3 and vent stack	11/2/2016	2016-1-049
3	12 Component Cooling Heat Exchanger (Salt Water Outlet)	Repair the branch nipolet to 1RV5208 with replacement parts	5/20/2016	2016-1-039
3	12A SRW HX Vent Valve	Replace pipe nipple upstream of valve 1HVSU-387	10/19/2016	2016-1-047
3	Unit 1 Salt Water System Piping (Above Ground)	Perform weld build-up on wasted area in weld neck flange located in salt water line LJ-1-1069	2/28/2018	2018-1-014
3	Unit 1 Salt Water System Piping (Above Ground)	Perform weld build-up on wasted area in flange face located in salt water line LJ-1-1038	3/8/2018	2018-1-019

End  
of  
Owner's Activity Report  
for  
Refueling Outage 23 (RFO-23)