



Exelon Generation®

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10 CFR 50.59  
10 CFR 72.48

February 26, 2016

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

Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2  
Renewed Facility Operating License Nos. DPR-53 and DPR-69  
NRC Docket Nos. 50-317 and 50-318

Calvert Cliffs Nuclear Power Plant  
Independent Spent Fuel Storage Installation, License No. SNM-2505  
NRC Docket No. 72-8

Subject: Report of Changes, Tests, and Experiments – 10 CFR 50.59 and 10 CFR 72.48

In accordance with 10 CFR 50.59(d)(2) and 10 CFR 72.48(d)(2), a report of changes, tests and experiments is provided as Attachment (1). The attachment contains brief descriptions of changes, tests, and experiments approved under the provisions of 10 CFR 50.59 and 10 CFR 72.48 between January 1, 2015 and December 31, 2015.

There are no regulatory commitments contained in this correspondence.

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

Respectfully,

George H. Gellrich  
Site Vice President

GHG/PSF/bjm

Attachment: (1) Calvert Cliffs Nuclear Power Plant Report of Changes, Tests, and Experiments [10 CFR 50.59(d)(2) and 10 CFR 72.48(d)(2)]

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cc: NRC Project Manager, Calvert Cliffs  
NRC Regional Administrator, Region I  
NRC Resident Inspector, Calvert Cliffs

S. Gray, MD-DNR  
C. Haney, NMSS

**ATTACHMENT (1)**

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**CALVERT CLIFFS NUCLEAR POWER PLANT  
REPORT OF CHANGES, TESTS, AND EXPERIMENTS  
[10 CFR 50.59(d)(2) and 10 CFR 72.48(d)(2)]**

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**Calvert Cliffs Nuclear Power Plant  
February 26, 2016**

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**ATTACHMENT (1)**

**CALVERT CLIFFS NUCLEAR POWER PLANT REPORT OF CHANGES, TESTS, AND EXPERIMENTS  
[10 CFR 50.59(d)(2) and 10 CFR 72.48(d)(2)]**

Document Id	Doc Type	Rev Status	Revision	Date Issued
SE00535	50.59	Approved	0000	12/18/2015
<b>Subject</b>	Diesel Fuel Oil Header Isolation Function			
<b>Summary</b>	<p><i>Proposed Activity:</i> Check valves 0-DFO-146 (Header #1) and 0-DFO-148 (Header #2) are located inside a valve pit and are not readily accessible for the testing required to verify that the valves are functioning properly, and thus can be credited to perform the isolation function between 11 and 21 FOSTs. The corresponding manual valves, 0-DFO-145 (Header #1) and 0-DFO-147 (Header #2), are readily accessible for testing and/or inspection, and thus are more desirable valves to credit for header isolation between 11 and 21 FOST.</p> <p>Revision 0001: There are several non-safety related (NSR) pipe lines attached to 11 and 21 FOST and their associated safety related headers. Opening the safety related isolation valves exposes the safety related 11 and 21 FOST to possible drainage if the NSR piping were to fail due to seismic or tornado wind loads. This scenario has been highlighted by Information Notice IN-2012-01, Seismic Considerations – Principally Issues Involving Tanks.</p> <p><i>Conclusions:</i> The evaluation demonstrates wind loading to 11 FOST will not adversely impact manual valves 0-DFO-145 &amp; -147. Therefore these manual valves can replace check valves 0-DFO-146, and -148 for the isolation function between 11 and 21 FOST. UFSAR Section 8.4.1.2 will be revised to reflect this conclusion (refer to UCR00854).</p> <p>Revision 0001: The fuel oil header isolation function has been transferred from components that are physically protected from tornado wind loads and tornado missile impact to components that are exposed to the environment. This aspect of the isolation function will be further addressed in 50.59 Evaluation SE00535. IR 02584978 documents the requirement to complete the 50.59 Evaluation.</p>			

Document Id	Doc Type	Rev Status	Revision	Date Issued
SE00541	50.59	Approved	0000	12/18/2015
<b>Subject</b>	Replacement CEAs for Calvert Cliffs Unit 1 and 2			
<b>Summary</b>	<p><i>Proposed Activity:</i> ECP-13-000911 provides acceptance to replacement of the resident CEAs with the AREVA CEAs</p> <p>Calvert Cliff's current inventory of CEAs is approaching the end of their lifetime and must be replaced at least one more time so that both units can operate to their current licensed limit (2034 and 2036). The CEA lifetime analysis indicates we need some replacement for the RFO 2016. AREVA has been selected to manufacture replacement CEAS for Calvert Cliffs. The AREVA CEAs are equivalent to the resident CEAs in form, fit, and function. For Calvert Cliffs, there are two CEA design; a Full Strength CEA and a Part Strength CEA. The Part Strength CEA is only used in the center core location. The Full Strength CEA has four outer rods and one center rod each loaded with two annular Ag-In-Cd bars, one stack support assembly, and a</p>			

**ATTACHMENT (1)**

**CALVERT CLIFFS NUCLEAR POWER PLANT REPORT OF CHANGES, TESTS, AND EXPERIMENTS  
[10 CFR 50.59(d)(2) and 10 CFR 72.48(d)(2)]**

Document Id	Doc Type	Rev Status	Revision	Date Issued
SE00541	50.59	Approved	0000	12/18/2015
<p>120.65 inch column of B4C pellets. The Part Strength CEA has four outer rods each loaded with an equivalent stack of Stainless Steel tubes and one center rod loaded the same as the Full Strength CEA.</p> <p>Conclusions: A comparison between the AREVA 14x14 CEA design and the resident 14x14 CEA used at Calvert Cliffs shows that the key parameters are the same for both designs. The AREVA CEAs are equivalent to the resident CEA design at Calvert Cliffs from a mechanical and nuclear performance standpoint. Since the CEA weights and reactivity worths of the AREVA CEAs are similar, the control rod drop time and the reactivity insertion rate assumed in the safety analysis will not be affected. Therefore, the AREVA CEA is compatible with Calvert Cliffs' plant systems and fuel assemblies and will perform in the same manner as the current CEAs.</p>				

Document Id	Doc Type	Rev Status	Revision	Date Issued
SE00542	50.59	Approved	0000	6/15/2015
Subject	Unit 1 Digital Feedwater Control System and Steam Generator Feed Pump Speed Control Upgrade Modification			
Summary	<p>Proposed Activity: The proposed activity will replace the existing digital feed water control system (DFWCS) Azonix micro MAC 7000 series CPU's (non-safety related with 2 CPU's per steam generator for a total of 4) as well as the steam generator feed pump turbine (SGFPT) Lovejoy speed governor control system for Unit 1.</p> <p>Both the DFWCS and the SGFPT speed governor are being upgraded to an Emerson Process Management Ovation Distributed Control System (DCS) platform which was designed and supplied by Westinghouse Electric Company for CCNPP. The replacement equipment is a more modern digital Distributed Control System (DCS) and is a commercial off-the-shelf (COTS) product that provides secure open-system architecture which is expandable and incorporates interfaces to "smart" devices/transmitters, e.g., Highway Addressable Remote Transducer (HART) protocol.</p> <p>In addition this modification will divorce SGFPT's HP and LP governor valves actuator from hydraulic oil and will install individual digitally controlled Exlar linear electric actuators with redundant independent power supply.</p> <p>Conclusions: The Digital Feedwater System Distributed Control System (DCS) modification is a reliability enhancement to the existing system, as described in the UFSAR. The SGFPT speed control and Digital Feedwater control system do not create any new functions or direct/indirect interfaces with important to safety components that are not included in the system as currently configured. The system does not have any interaction with any important to safety components and will not change the environment of any important to safety SSC. The modification does not change the function or performance requirements for the system as described in the UFSAR. The DCS modification does not increase any plant operating parameters that would result in increased challenges to important to safety components.</p>			