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> 10 CFR 50.59 10 CFR 72.48

February 1, 2018

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, 2017 and December 31, 2017.

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,

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Mark D. Flaherty Site Vice President

MDF/KLG/bjm

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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 Control Desk February 1, 2018 Page 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 M. Dapas, NMSS

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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)]

Document Id	Doc Type	Rev Status	Revision	Date Issued
SE00555	Unit 2 Turbing Control System	Approved	15 000566-0004 and ECP	4/5/2017
Summary	Proposed Activity:	Opgrade Modifications (ECF	-15-000500-0004 and EOF	-13-0003/4-0000/
Gummary	Proposed Activity: The proposed activity will replace the existing Analog Electro-Hydraulic (AEH) Turbine Control and Protect which is obsolete with a digital Westinghouse Ovation platform which is a microprocessor based Distribu- (DCS). The Ovation DCS initially was installed on Unit 2 for Digital Feedwater Control System (DFWCS) will be added to the previously installed DCS network. The new TCPS is composed of two control subsyster Automatic/Overspeed Protection Control (OA/OPC) and the Emergency Trip System (ETS). Each subsy pair of redundant process controllers and the necessary Input and Output (I/O) modules needed to interfac The TCS is the portion of the TCPS primarily responsible for turbine valve control and backup overspeec ETS is primarily dedicated to turbine protection as its primary function, but it also encompasses new M Reheater (MSR) temperature control. The ETS processor (Drop 2 and 52) burden associated with t insignificant to the ETS controller.			
Nearly all trip equipment in the existing AEH is affected by this upgrade. The Autostop Trip (AST) and solenoids, the OPC solenoids, the interface valve, the AST block, and the check valve that separates the will be replaced with two testable dump manifolds (TDMs) and a new OPC to ET interface manifold, can valve manifold (OPC-CB). The TDMs consist of three de-energize-to-trip solenoids arranged mechanic out of three (2003) logic gate. Trips that are presently generated using AST components, such as the pressure trip bellows, will be retired and replaced with pressure status manifolds that provide three red ETS logic. The ETS will generate trip commands based on two out of three (2003) pressure inputs an commands to each TDM. One TDM, called ET-TDM, replaces 20-ET, 20-AST, the interface valve, ar second TDM, called OPC-TDM, replaces 20-OPC-1 and 20-OPC-2. The OPC-CB replaces the existing between the OPC and ET headers and, in conjunction with operation of the OPC TDM, provides a redund the ET header by bypassing the OPC to ET header check valve that normally prevents the OPC heade ET header. The OPC TDM is tripped (without operating the OPC-CB bypasses) to initiate fast closure or and intercept valves during a 103% overspeed protection control or load drop anticipator (LDA) event.				o Trip (AST) and Emergency Trip (ET) at separates the OPC and ET headers face manifold, called the OPC Check anged mechanically to replicate a two ents, such as the vacuum and low oil provide three redundant inputs to the essure inputs and will provide the trip terface valve, and all AST trips. The laces the existing check valve located provides a redundant means of tripping the OPC header from influencing the ate fast closure of the governor valves or (LDA) event.
	Reason for Activity: This activity is to support the im in 2017. The existing AEH com	plementation of TCPS chang ponents are obsolete and ar	e package to be implement e no longer supported by tl	ed during the Unit 2 Refueling Outage ne OEM (Westinghouse).
	The AEH system at CCNPP U Spreading Room and the Oper out of the original AEHs, Westir	Init 2 consists mainly of cor ator panels located on Main nghouse developed an AEH	troller cabinet 2PNL2T11, Control Room Panel 2PNL digital replacement (AEH-D	which is located in the Unit 2 Cable 2C02. As part of the planned phase R).

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Document Id	Doc Type	Rev Status	Revision	Date Issued	
SE00555	50.59	Approved	0000	4/5/2017	
	The standard AEH-DR is an Ovation based digital replacement for the original AEH, which provides redundancy, reduced				
	maintenance and protection from single point vulnerabilities (SPVs).				
	Effect of Activity: This modification does not affect the External Missiles Protection as described in UFSAR Section 5.3.1. The missile generation probability for Unit 2 turbine calculated in WCAP-11525 and WCAP-14732 will not be impacted by this modification Based on the comparison analysis performed by Westinghouse under title "Impact to Missile Probability and Valve Testing (WNA-AR-0069-CCAL2, Rev. 0). The TCS upgrade to Ovation is bounded by existing Turbine Missile Generation Calculation and is shown to not be an increase in the probability or consequence of turbine overspeed nor does it present any new failured modes no previously analyzed. Conclusions: The Digital Turbine Control and Protection Distributed Control System (DCS) modification is a reliability enhancement to the existing system, as described in the UFSAR. The TCPS 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 TCPS modification does not increase any plant operating parameters that would result in increased challenge to important to safety components.				
	The changes in the control sys bolt with DOPS to protect the t HMI's, have the potential to adv	tem's failure modes, due to urbine from overspeed and versely affect UFSAR descril	inherent differences in digit the changes in operator int ped design functions.	al control, replacement of mechanical erface through the use of soft control	

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Document Id	Doc Type	Rev Stat	us	Revision	Date Issued
SE00557	50.59	Approve	ii	0000	2/7/2017
Subject	Revised Analyses for Pressurizer Safety Implementation for Units 1 and 2 (ECP-12-000124 Rev 1)				
Summary	Proposed Activity:				
	This activity increases the Pressurizer Safety Valve (PSV) tolerance on the as-found lift setting points and decreases the				
	nominal opening set point of 1/2-RC-201. These changes are summarized as follows:				
		Nominal Openir	Nominal Opening Set Point		ound Lift Set Point
	Valve	Existing	New	Existing	New
	1/2-RC-200	2500 psia	2500 psia	-1% / +2%	-1% / +3%
	1/2-RC-201	2565 psia	2525 psia	-2% / +2%	-2% / + 3%
	For this modification, the PSV design, capacity, and functional requirements are not being modified; only the safety valve set points are being changed. The methodology used to analyze the UFSAR over-pressure related events impacted by the modified PSV setpoints will also be changed. The AREVA methods using the S-RELAP5 code will be used in these analyses instead of current Westinghouse methods using the CESEC code.				
	Conclusions: CCNPP submitted a License Amendment Request (LAR) for a technical specification change to amend the PSV set point opening and closing tolerances to accommodate thermal drift associated with the PSV lift settings. The NRC approved the license amendment in Amendment Nos. 315 (Unit 1) and 293 (Unit 2).				

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	
SE00558		Approved	0000	4/5/2017	
	Automatic Closure of the HVV I Outlet Valve MOVS (ECP-16-000353)				
Summary	Proposed Activity: This Engineering Change Package modifies the control circuits for the RWT Outlet Motor-Operated Valves (1(2)MOV4142 & 1(2)MOV4143) such that automatic closure occurs with the placement of the respective hand switches in "Auto" and the receipt of a Recirculation Actuation Signal (RAS). Existing hand switches (1(2)HS4142 & 1(2)HS4143) for the RWT Outlet valves will be replaced with three-position equivalents, adding an "Auto" position for the closing circuit and annunciation. Existing RAS A1&B1 contacts and qualified 125VDC control power for the same unit, same train Containment Sump Discharge MOVs (1(2)MOV4144 & 1(2)MOV4145) will be used to drive new multiplying auxiliary relays within the circuits. Resulting multiplied contacts will be used in electrically equivalent positions in the Containment Sump circuits with no functional logic changes. Additional contacts will be used in the closing circuit of the RWT Outlet valves as a permissive along with "Auto" handswitch positioning.				
	Conclusions: The results of the 50.59 Screen direct the evaluation of the activity under the 50.59 Evaluation criterion due a completely manual operator action to an automatic action for the positioning of the RWT Outlet valves changes to the RWT Discharge control circuit logic and supporting emergency operating procedure changes any more than minimal changes to the likelihood of malfunctions of SSCs or accidents as described in the UF the additional auxiliary relay added to the control circuits to multiply the RAS contacts adds a failure mechani failure modes and effects remain the same as it would be if RAS, logically or mechanically, failed to initiate w circuits. Manual operation of both valves from their normal positions will be maintained with this design. A the design will still meet the single failure criteria for Safety Injection system and therefore the consequence any components are no different than the existing. The 50.59 evaluation concludes that this modification can per plant procedures without obtaining a License Amendment.				
	It should be noted that a modi which a License Amendment F available inventory, will be add evaluated under this 50.59 do MOV control circuit modificatio changes made under ECP-15-	ication (ECP-15-000727) to a Request will be submitted. Ar ressed in the LAR. Although not require NRC review. This ns and supporting procedure 000727.	address RWT vortexing pro alysis supporting the raised this modification supports modification and subseque changes. The supporting ar	poses a new RAS setpoint change in RAS setpoint change, as it relates to resolving the same issue, the aspects ent 50.59 Evaluation only address the nalysis stands alone from the set point	

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Document Id	Doc Type	Rev Status	Revision	Date Issued		
SE00561	50.59	Approved	0000	7/11/2017		
Subject	1A EDG Governor System Upgrade (ECP-16-000742)					
Summary	Proposed Activity:					
	The scope of this ECP is to allow the replacement of the Load Sharing and Speed Controller (LSSC) with a 125 VDC Tandem					
	control version. The LSSC will be used in the tandem configuration to bypass the Load Sharing Controller (LSC) and control					
	the actuators directly. The actu	lators will be wired in series ar	nd the input to and the output	uts from the LSC will be disconnected.		
	Because the Sampronics card	The accordent LVDTe on	tter between the LVD is an	d the panel mounted LVD1 indication,		
	both will no longer be utilized. The secondary LVDTs and Desk mounted indication will be used to verify fuel delivery.					
	Additionally the Magnetic Pickup Signal Selector will be bypassed allowing the Magnetic pickup to directly feed the LSS					
	In hypassing the LSC three protective function outputs will be removed from the 1A EDC Protection Eurotian logic circuit					
	The protective function output	is feed into two protective fu	nctions that are stated in	the UFSAR Section 8.4.2.2. Those		
	protective functions are Linear	Variable Differential Transfor	mer Failure and Load Shar	ing Control Failure. These protective		
	functions are designed to protect the 1A EDG from engine load unbalances that could damage the EDG.					
	Conclusions:					
	Because this activity removes	two protective functions wh	ich are also stated in Se	ction 8.4.2.2 of the UFSAR a 50.59		
	Evaluation was completed to	determine the magnitude of the	his impact on the 1A EDG	and the UFSAR. The results of the		
	evaluation concluded that the	changes only affected the fund	ctional description of the 17	A diesel generator and had no impact		
	of the Chapter TOA/14 safety analysis.					
	mergency operating conditions. The					
	trips would only present an ala	rm, indicating the condition ex	ists, and the unit would tra	nsfer to hydraulic mode where it is no		
	longer credited as operable.	During emergency conditions	operations are tasked to	closely observe operating conditions.		
	This would include monitoring LVDT indication to ensure that high-high or load imbalance conditions are observed					
	correct actions are taken. Re	moval of these trips, only rem	loves indication that a mal	function already exists, and does not		
	increase the probability of the	malfunction occurring.		-		
	Based on this conclusion, the a	activity may be implemented p	er plant procedures withou	t obtaining a License Amendment.		