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10 CFR 50.73

April 29, 2024

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

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

Subject: Licensee Event Report 2024-002, Revision 00
Emergency Diesel Generators Automatic Start due to Loss of a 13kV Bus

The attached report is being sent to you as required by 10 CFR 50.73.

There are no regulatory commitments contained in this correspondence.

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

Respectfully,

Peter F. Moodie
Plant Manager

PFM/ALS/aj

Attachment: LER 317-2024-002, Rev 00

cc: NRC Project Manager, Calvert Cliffs
NRC Regional Administrator, Region I
NRC Resident Inspector, Calvert Cliffs
S. Seaman, DNR

NRC FORM 366 (04-02-2024) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name		2. Docket Number	3. Page
Calvert Cliffs Nuclear Power Plant, Unit 1	☒ 050 ☐ 052	05000317	1 OF 3

4. Title

Emergency Diesel Generators Automatic Start due to Loss of a 13kV Bus

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved		
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name		Docket Number
									Calvert Cliffs Nuclear Power Plant, Unit 2	☒ 050	05000318
02	28	2024	2024	- 002 -	00	04	29	2024	Facility Name	☐ 052	Docket Number

9. Operating Mode	10. Power Level
5 – Cold Shutdown (U1) 1 - Power Operation (U2)	0 (U1) 65 (U2)

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.1200(a)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	☐ 73.1200(b)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	☐ 73.1200(c)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.36(c)(2)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)	☐ 73.1200(d)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**	☐ 73.1200(e)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.77(a)(1)	☐ 73.1200(f)
☐ 20.2203(a)(2)(iii)		☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(2)(i)	☐ 73.1200(g)
☐ 20.2203(a)(2)(iv)		☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(ii)	☐ 73.1200(h)
☐ 20.2203(a)(2)(v)		☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)		

☐ **OTHER** (Specify here, in abstract, or NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Arthur L. Simpson, Principal Regulatory Engineer	410-495-6913

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to IRIS		Cause	System	Component	Manufacturer	Reportable to IRIS
B	EA	94	A500	Y						

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☒ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)

On February 28, 2024, with Calvert Cliffs Unit 1 in Mode 5 (Cold Shutdown) and Unit 2 in Mode 1 (Power Operation), a 13kV Service Electric Bus de-energized when a breaker tripped open due to a protective relay contact inadvertently closing. The loss of the electric bus resulted in the loss of 4kV unit service transformers and 4kV busses. The 1A and 2A emergency diesel generators automatically started as designed, when the 4kV busses were lost. The cause of the loss of the number 13kV Bus was due to mechanical agitation of a relay mounted on a breaker cabinet door in the Electrical Distribution Reliability Improvement Project (EDRIP) building. The relay contact inadvertently closed due to mechanical agitation during clearance and tagging activities. The relay was subsequently replaced. Operations restricted access to the EDRIP building, restricted operation of the associated circuit breakers, and added cautions to Operations Procedures. Planned corrective actions include relocating the relays from the EDRIP switchgear doors to a location better suited for these type relays.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Calvert Cliffs Nuclear Power Plant, Unit 1	■ 050 ☐ 052	05000317	2024	- 002	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Calvert Cliffs Nuclear Power Plant, Units 1 and 2, are Combustion Engineering Pressurized Water Reactors each with a licensed maximum power level of 2737 megawatts thermal. The Energy Industry Identification System code used in the text is identified as [EA].

A. CONDITION PRIOR TO EVENT

Unit: 1
Date: February 28, 2024
Power level: 0
Mode: Unit 1 was in Mode 5 when the event occurred.

Unit: 2
Date: February 28, 2024
Power level: 65
Mode: Unit 2 was in Mode 1 when the event occurred.

B. DESCRIPTION OF EVENT

At 13:50 on February 28, 2024, with Calvert Cliffs Unit 1 in Mode 5 (Cold Shutdown), and Unit 2 in Mode 1 (Power Operation), the number 11 13kV Service Electric Bus de-energized when a breaker tripped open due to a protective relay contact inadvertently closing. The loss of 11 13kV Bus resulted in the loss of 4kV unit service transformers U-4000-11 and U-4000-12, and the 11 4kV and 21 4kV busses were deenergized. The Unit 1 1A emergency diesel generator (EDG) automatically started when the 11 4kV bus was deenergized and the Unit 2 2A EDG automatically started when the 21 4kV bus was deenergized.
There were no safety consequences as a result of the event based on all safety systems functioning and operating as designed.

C. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES

February 28, 2024: 13:50: The number 11 13kV Service Electric Bus deenergized.
The Unit Service Transformers U-4000-11, U-4000-12 and U-4000-13 were lost.
The Unit 1 11 4kV bus deenergized. 1A EDG automatically started.
The Unit 2 21 4kV bus deenergized. 2A EDG automatically started.
February 28, 2024: 16:32: The Unit 1 11 4kV bus was powered from its alternate feeder breaker and the 1A EDG was separated from the bus and secured in accordance with normal operating procedures.

February 28, 2024: 18:00: The Unit 2 21 4kV bus was powered from its alternate feeder breaker and the 2A EDG was separated from the bus and secured in accordance with normal operating procedures.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME		2. DOCKET NUMBER	3. LER NUMBER		
			YEAR	SEQUENTIAL NUMBER	REV NO.
Calvert Cliffs Nuclear Power Plant, Unit 1	■ 050 ☐ 052	05000317	2024	- 002	- 00

NARRATIVE

D. CAUSE OF EVENT

The method of discovery for this event was self-revealing and is documented in the site's Corrective Action Program under IR04753992. The cause of the loss of the number 11 13kV Bus was due to mechanical agitation of a high-speed auxiliary tripping relay located on a breaker cabinet door. Specifically, during clearance and tagging activities, per station procedures, Operations personnel closed a cabinet door after accessing an Electrical Distribution Reliability Improvement Project (EDRIP) 13kV circuit breaker in order to access the breaker close fuses. The high-speed auxiliary tripping relay is sensitive to mechanical agitation and should not be mounted on components, like a switchgear cubicle door, because as noted, the relay contacts could inadvertently close due to the mechanical agitation of the door. The trip sensitivity of the relay was not identified during the EDRIP modification installation during the 2020 Unit 1 refueling outage, which allowed the relay to be mounted to the switchgear cubicle door.

E. SAFETY ANALYSIS

The subject event satisfies the criteria in NUREG-1022, Revision 3, for any event or condition that resulted in manual or automatic actuation of any of the systems listed in 10CFR50.73, paragraph (a)(2)(iv)(B). Specifically, for this event, the 1A and 2A emergency diesel generators automatically actuated. Therefore, this event is reportable pursuant to 10CFR50.73(a)(2)(iv)(A). There were no safety consequences as a result of the event. All safety systems functioned and operated as designed.

F. CORRECTIVE ACTIONS

The high-speed auxiliary tripping relay was replaced. Operations restricted access to the EDRIP building and restricted operation of the associated circuit breakers. Caution statements were added to the Operations Procedures regarding the sensitivity to mechanical agitation of relays on the cubicle doors. Planned corrective actions include relocating the relays from the EDRIP switchgear doors to a location better suited for these style relays.

G. PREVIOUS OCCURRENCES

A review of Calvert Cliffs' events was performed. There were no previous occurrences of emergency diesel generators starting due to high-speed trip relays closing.

H. COMPONENT FAILURE DATA

Component	IEEE 803 FUNCTION ID	IEEE805 SYSTEM ID
High Speed Tripping Relay 1RY294/B-11-B	94	EA