

**Virginia Electric and Power Company  
North Anna Power Station  
1022 Haley Drive  
Mineral, Virginia 23117**

August 20, 2024

Attention: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Serial No.: 24-210A  
NAPS: RAP  
Docket Nos.: 50-339  
License Nos.: NPF-7

Dear Sir or Madam:

Pursuant to 10CFR50.73, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Power Station Unit 2.

Report No. 50-339/2024-001-01

This report has been reviewed by the Facility Safety Review Committee and will be forwarded to the Management Safety Review Committee for its review.

Sincerely,



Lisa Hilbert  
Site Vice President  
North Anna Power Station

Enclosure

Commitments contained in this letter: None

cc: United States Nuclear Regulatory Commission  
Region II  
Marquis One Tower  
245 Peachtree Center Ave., NE, Suite 1200  
Atlanta, Georgia 30303-1257

NRC Senior Resident Inspector  
North Anna Power Station



### 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/huregs/staff/sr1022/r3/>)

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 [infocollections.Resource@nrc.gov](mailto:infocollections.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.

1. Facility Name North Anna Power Station	<input checked="" type="checkbox"/> 050	2. Docket Number 00339	3. Page 1 OF 3
	<input type="checkbox"/> 052		

4. Title  
Loss of Generator field for 2J EDG during 2-PT-82.2B

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
04	18	2024	2024	001	01	08	20	2024	<input type="checkbox"/> 050	Docket Number
									<input type="checkbox"/> 052	Docket Number

9. Operating Mode: 1      10. Power Level: 100

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

<input type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.1200(a)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	<input type="checkbox"/> 73.1200(b)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	<input type="checkbox"/> 73.1200(c)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 73.1200(d)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 10 CFR Part 21	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 10 CFR Part 73	<input type="checkbox"/> 73.1200(e)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.77(a)(1)	<input type="checkbox"/> 73.1200(f)
<input type="checkbox"/> 20.2203(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(2)(i)	<input type="checkbox"/> 73.1200(g)
<input type="checkbox"/> 20.2203(a)(2)(iv)		<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(ii)	<input type="checkbox"/> 73.1200(h)
<input type="checkbox"/> 20.2203(a)(2)(v)		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)		

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

12. Licensee Contact for this LER

Licensee Contact Lisa Hilbert, Site Vice President	Phone Number (Include area code) (540) 894-2101
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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	EK	53		Y					

14. Supplemental Report Expected		15. Expected Submission Date		
<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)	Month	Day	Year

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

On April 18, 2024, at 1355 hours with Unit 2 in Mode 1, 100% power, during the performance of 2-PT-82.2B, " 2J Diesel Generator Test (Simulated Loss of Off-Site Power)" the electrical generator failed to flash the field which resulted in a no voltage condition. The engine operated at rated speed of 900 RPM / 60 Hz with a local room annunciator " Loss of Field Flash" locked in alarm. The 2J EDG was subsequently shut down and placed in quarantine in support of failure investigation. Investigation into the issue identified the voltage regulator control system K1M relay was found in the closed position. This condition would result in a loss of field flash or prevention of field flash of the electrical generator and subsequently no generator voltage output. This event is reportable per 10 CFR 50.73(a)(2)(i)(B) as a Condition Prohibited by Technical Specifications.

The direct cause of this event is foreign material within the K1M preventing proper operation. The health and safety of the public were not affected by this event.



**LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET**

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1. FACILITY NAME North Anna Power Station	<input checked="" type="checkbox"/> 050	2. DOCKET NUMBER 00339	3. LER NUMBER		
	<input type="checkbox"/> 052		YEAR 2024	SEQUENTIAL NUMBER 001	REV NO. 01

**NARRATIVE**

1.0 Description of Event

On April 18, 2024, at 1355 hours with Unit 2 in Mode 1, 100% power, during the performance of 2-PT-82.2B, " 2J Diesel Generator Test (Simulated Loss of Off-Site Power)" the electrical generator (EIS System EK, Component GEN) failed to flash the field which resulted in a no voltage condition. The engine operated at rated speed of 900 RPM / 60 Hz with a local room annunciator " Loss of Field Flash" locked in alarm. The 2J Emergency Diesel Generator (EDG) (EIS System EK, Component DG) was subsequently shut down and placed in quarantine in support of failure investigation. Investigation into the issue identified the voltage regulator control system K1M relay was found in the closed position. This condition would result in a loss of field flash or prevention of field flash of the electrical generator and subsequently no generator voltage output. This event is reportable per 10 CFR 50.73(a)(2)(i)(B) as a Condition Prohibited by Technical Specifications. During the fault exposure period for the 2J EDG, the 2H EDG was inoperable on two occasions for a total of 4.7 hours. However, the 2H EDG was still available to perform its design function during those periods of time.

NOTE: The K1 relay (EIS Component 53) is comprised of two separate components, K1R is the generator field flash relay which is mechanically connected (clipped on) to the K1M portion which is the electrical coil and field shutdown portion. The K1R provides the latching mechanism which holds the K1M in the " picked up" position when coil power is removed from K1M. Both components together are referred to as K1.

2.0 Significant Safety Consequences and Implications

No significant safety consequences resulted from this event. The health and safety of the public were not affected by this event.

3.0 Cause of the Event

The direct cause of this event is foreign material within the K1M preventing proper operation. There are two postulated causes for FM entry into the relay. The first scenario would be the potential for a small piece of plastic wrapping material to have been introduced during the wrapping and boxing / packaging process by the relay vendor. In the second scenario, it is postulated that during the unpackaging of the K1R and K1M relay components, a small piece of clear plastic FM either tore off during unpackaging or a small piece entered the relay. The K1 relay was installed 2 years ago. As described above, the K1 relay is comprised of two separate components and K1R is designed to slide on top of the K1M relay clipping into place. It appears that the foreign material, which resembles a piece of clear plastic, was inside the relay since its installation. While the source of the foreign material cannot be definitively proven, as it is possible for the FM to have entered the relay during the manufacture process, packaging, unwrapping, or site assembly. The material would have been in a location internal of the relay not visible to site electrical maintenance performing site assembly and installation. Over the past two years, the K1R relay has functioned as intended with total of 24 successful tests. However, during testing on April 18th, 2024, the presence of the plastic foreign material caused it to bind, preventing the contacts from changing state as designed. This malfunction resulted in the EDG failing to produce any output voltage because of the absence of flashing the field.



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**NARRATIVE**

4.0 Immediate Corrective Action

Upon removal of the foreign material, the relay was mechanically cycled noting no abnormal conditions or binding. The K1 relay was then functionally tested (electrically energized and deenergized) by engineering noting proper operation with no abnormal conditions confirming the foreign material was the cause for relay failure.

5.0 Additional Corrective Actions

Work orders were created to inspect the K1 relays for all EDGs for foreign material and to functionally test each K1 relay. These work orders have been completed and no foreign material was found in the other K1 relays.

6.0 Actions to Prevent Recurrence

Revise 0-EPM-0702-04 " Inspection of EDG ' K ' Relays and Contacts" to inspect the interior of the relay to identify any foreign materials or unusual particles that do not belong. Use a light source to illuminate the interior for enhanced visibility. Utilize a can of compressed air and position the nozzle at a safe distance to avoid damage to relay components. Apply short bursts of air to dislodge and remove any potential debris. In addition to the above steps include an Independent Verification (IV) step to verify the absence of foreign materials inside the relay.

7.0 Similar Events

No similar events have been noted at North Anna.

8.0 Additional Information

The health and safety of the public were not affected by this event.