

November 18, 2024

Docket No.: 52-025

NL-24-0402

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

Vogtle Electric Generating Plant (VEGP) – Unit 3
Licensee Event Report 2024-003-00
Automatic Reactor Protection System and Manual Safeguards Actuation
Due to a Failed Open Flow Control Valve

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Operating Company is submitting the enclosed Licensee Event Report for VEGP Unit 3.

This letter contains no regulatory commitments. If you have questions regarding the enclosed information, please contact Will Garrett at (706) 848-7154.

Respectfully submitted,



Patrick A. Martino
Site Vice President
Vogtle Units 3 & 4

PAM/kjd/cbg

Enclosure: Unit 3 Licensee Event Report 2024-003-00

CC: Regional Administrator, Region II
VPO Project Manager
Senior Resident Inspector – Vogtle Units 3 & 4
Director, Environmental Protection Division - State of Georgia

Vogtle Electric Generating Plant - Unit 3

Licensee Event Report 2024-003-00

**Automatic Reactor Protection System and Manual Safeguards Actuation
Due to a Failed Open Flow Control Valve**

Enclosure

Unit 3 Licensee Event Report 2024-003-00



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/>)

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.

1. Facility Name Vogtle Electric Generating Plant, Unit 3	<input type="checkbox"/> 050	2. Docket Number 00025	3. Page 1 OF 2
	<input checked="" type="checkbox"/> 052		

4. Title
Automatic Reactor Protection System and Manual Safeguards Actuation Due to a Failed Open Flow Control Valve

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
09	17	2024	2024	003	00	11	18	2024	<input type="checkbox"/> 050	
									<input type="checkbox"/> 052	

9. Operating Mode 1	10. Power Level 100
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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 checked="" 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 checked="" 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 checked="" type="checkbox"/> 10 CFR Part 21	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input checked="" 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 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 Will Garrett, VEGP 3&4 Licensina Manager	Phone Number (Include area code) (706) 848-7154
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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
X	EJ	FU	0000	Y					

14. Supplemental Report Expected

<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date)	15. Expected Submission Date	Month	Day	Year
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16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)

On September 17, 2024, at 0127 EDT with Vogtle Electric Generating Plant (VEGP) Unit 3 in Mode 1 at 100 percent power, the reactor was automatically tripped due to a passive residual heat removal (PRHR) heat exchanger (HX) outlet flow control valve (FCV) failing to an open position, followed by manual safeguards actuation due to rapid cooldown of the primary system. The unit was stabilized with decay heat removed through the PRHR HX. The cause of the event was an unexpected change in the PRHR HX outlet FCV from closed to fully open due to failure of a fuse in the power supply of the valve's air operated solenoid. The PRHR HX outlet FCV solenoid, fuse, component interface module (CIM) and CIM baseplate were replaced and tested to ensure the circuit functions as designed. In addition, an extent of condition review was performed to identify associated fuses used in the plant to be replaced.

This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) due to the automatic actuation of the reactor protection system, and the manual actuation of the emergency core cooling system. The other VEGP Units (1, 2 and 4) were not affected by this event on Unit 3.



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

(See NUREG-1022, R.3 for instruction and guidance for completing this form
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1. FACILITY NAME Vogtle Electric Generating Plant, Unit 3	<input type="checkbox"/> 050	2. DOCKET NUMBER 00025	3. LER NUMBER		
	<input checked="" type="checkbox"/> 052		YEAR 2024	SEQUENTIAL NUMBER 003	REV NO. 00

NARRATIVE

EVENT DESCRIPTION

On September 17, 2024, at 0127 EDT with Vogtle Electric Generating Plant (VEGP) Unit 3 in Mode 1 at 100 percent power the reactor protection system (RPS) [EIIS: JC] was automatically actuated, followed by a manual safeguards actuation [EIIS: JE]. The initiating event was a loss of power to a passive residual heat removal (PRHR) heat exchanger (HX) outlet flow control valve (FCV) air operated solenoid [EIIS: EJ] causing it to change from its normally closed position to a fully open position, which is its fail-safe position per design. The unexpected change in the valve position generated an automatic reactor trip signal. The PRHR actuation caused a rapid reduction in the reactor coolant system temperature and resulted in the pressurizer water level falling below the limit to require a manual actuation of safeguards system.

EVENT CAUSE ANALYSIS

The cause of the event was a loss of DC power to the PRHR HX outlet FCV air operated valve solenoid. The loss of power was caused by a premature (A4J3 3 amp) fuse failure [EIIS: EJ/FU] which resulted in a loss of airflow to the valve controller and actuation of the PRHR HX outlet FCV to the fail-safe open position.

SAFETY ASSESSMENT AND REPORTABILITY

There were no safety consequences as a result of this event. The operators responded timely to stabilize the plant. Decay heat was removed by the PRHR HX.

There were no safety-related structures, systems, or components that were inoperable at the beginning of the event that contributed to the event. This event is reportable per 10 CFR 50.73(a)(2)(iv)(A) due to automatic actuation of the RPS and the manual actuation of the emergency core cooling system. All safety systems functioned as expected as a result of the event. The other VEGP Units (1, 2, and 4) were not affected by this event on Unit 3.

CORRECTIVE ACTIONS

- The PRHR HX outlet FCV power supply circuit components (solenoid, fuses, component interface module (CIM), and CIM baseplate) were replaced, and a current signature analysis performed to ensure the circuit functions as designed.
- An extent of condition review was completed to identify the use and replacement of similar fuses as plant conditions allow.
- Design changes are in development to eliminate the potential for a single fuse failure to open the PRHR HX outlet FCV and planned for implementation during future outages.

PREVIOUS SIMILAR EVENTS

None