

June 30, 2023

ND-23-0532

10 CFR 50.73(a)(2)(iv)(A)

Docket No.: 52-025

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant (VEGP) – Unit 3
Licensee Event Report 2023-004-00
Manual Reactor Protection System Actuation Due to Condenser Flanges Not
Removed During Construction

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,



BY DELEGATION FOR P. MARTINO

Patrick A. Martino
Site Vice President, Unit 3

PAM/KMS/sfr

Enclosure: Unit 3 Licensee Event Report 2023-004-00

cc:

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

Vogtle Electric Generating Plant - Unit 3

Licensee Event Report 2023-004-00

**Manual Reactor Protection System Actuation Due to Condenser Flanges Not
Removed During Construction**

Enclosure

Unit 3 Licensee Event Report 2023-004-00



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 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; email: oir_submission@omb.eop.gov. 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 <input checked="" type="checkbox"/> 052	2. Docket Number 00025	3. Page 1 OF 2
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4. Title
 Manual Reactor Protection System Actuation Due to Condenser Flanges Not Removed During Construction

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
05	02	2023	2023	004	00	06	30	2023	<input type="checkbox"/> 050 <input type="checkbox"/> 052	Docket Number

9. Operating Mode 1	10. Power Level 014
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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 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 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 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 Licensing Manager	Phone Number (Include area code) 7068487154
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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	SM	LCV	Flowserv	No					

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 May 2, 2023, at 0423 EDT with Vogtle Electric Generating Plant (VEGP) Unit 3 in Mode 1 at 14 percent power, during startup testing, the reactor was manually tripped due to loss of feedwater flow. The loss of feedwater was due to high differential pressure across the main feedwater pump suction strainers, which was caused by a secondary plant transient. The secondary plant transient was caused by shipping flanges which had remained installed in the condensate flowpath. The operators responded to ensure plant stability, with decay heat removal by discharging steam to the main condenser using the steam dumps and startup feedwater supplying the steam generators. The corrective actions for this event included removal of the shipping flanges, inspection and cleaning of Main Feedwater Pump suction strainers, and repair of the feedwater heater drain cooler bypass valve that failed due to an increased cycling frequency from blockage of the condensate normal drain path. This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) as a manual actuation of the Reactor Protection System (RPS). VEGP Units 1, 2, and 4 were unaffected by this event.



**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/>)

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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 2023	SEQUENTIAL NUMBER 004	REV NO. 00

NARRATIVE

EVENT DESCRIPTION

On May 2, 2023, at 0423 EDT with Vogtle Electric Generating Plant (VEGP) Unit 3 in Mode 1 at 14 percent power, during startup testing, the reactor was manually tripped. The initiating event was automatic isolation of three feedwater heater [EIIS: SM / HX] strings due to high level in low-pressure feedwater heaters and a subsequent manual trip of the main turbine [EIIS: TA / TRB] from 75 percent power. Following the turbine trip, high differential pressure was observed across the suction strainers [EIIS: SJ / STR] of all three main feedwater pumps [EIIS: SJ / P], requiring a manual reactor trip due to loss of all feedwater flow as a result of this secondary plant transient. The reactor power was at 14 percent when the Reactor Protection System (RPS) was manually actuated. There were no structures, systems, or components that were inoperable at the beginning of the event that contributed to the event. This event is reportable under 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in manual actuation of the RPS.

EVENT ANALYSIS

The cause leading to the manual RPS actuation was blockage of the normal drain paths from drain coolers by the shipping flanges in the condenser flashbox nozzles, which was a legacy construction issue. With the shipping flanges in place, the normal drain paths from the low pressure drain tanks [EIIS: SM / TK] to the condensers [EIIS: SG / COND] were not effective, resulting in more frequent cycling of the feedwater heater drain cooler bypass air-operated valves [EIIS: SM / LCV] to compensate for the blocking of the heater drain system normal drain paths to the condensers through the feedwater heater drain coolers. This resulted in a failure of the feedwater heater drain cooler bypass air-operated valve 3-HDS-V021B [EIIS: SM / LCV], which initiated the feedwater heater string isolations, requiring the operators to initiate a manual turbine trip. The dynamic forces from the turbine trip from 75 percent power caused solids that had accumulated in the secondary systems to become loose and drawn into the suction strainers for the main feedwater pumps, reducing flow to the steam generators and reducing steam generator inventory. The reactor trip was manually actuated due to loss of feedwater flow.

SAFETY ASSESSMENT

There were no safety consequences due to this event because the manual actuation of the RPS maintained the plant in a safe condition. The operators responded timely by ensuring plant stability and decay heat was removed by discharging steam to the main condenser [EIIS: SG / COND] using the steam dump valves [EIIS: SB / PCV] and supplying the steam generators [EIIS: SB / SG] using the startup feedwater pumps [EIIS: SJ / P]. All safety systems functioned as expected as a result of the event. VEGP Units 1, 2, and 4 were unaffected by this event.

CORRECTIVE ACTIONS

- Inspected heater drain system piping and removed blind flanges from drain cooler A, B, and C to the condenser outlet piping
- Repaired the feedwater heater drain cooler bypass air-operated valve 3-HDS-021B
- Inspected and cleaned the main feedwater pump suction strainers

PREVIOUS SIMILAR EVENTS

None