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Docket No: 50-425

NL-15-0833

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

Vogtle Electric Generating Plant – Unit 2  
Licensee Event Report 2015-001-00  
Automatic Reactor trip and Safety Injection due to Main Steam Isolation Valve Closure

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Operating Company (SNC) is submitting the enclosed Licensee Event Report, 2015-001-00 for Unit 2. This letter contains no NRC commitments. If you have any questions, please contact George Gunn at (706) 848-3596.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "B. Keith Taber".

B. Keith Taber  
Site Vice President - Vogtle

BKT/KCW

Enclosure: Unit 2 Licensee Event Report 2015-001-00

cc: Southern Nuclear Operating Company  
Mr. S. E. Kuczynski, Chairman, President & CEO  
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer  
Mr. D. R. Madison, Vice President – Fleet Operations  
Mr. M. D. Meier, Vice President – Regulatory Affairs  
Mr. B. K. Taber, Vice President – Vogtle 1 & 2  
Mr. B. J. Adams, Vice President – Engineering  
Mr. G.W. Gunn, Regulatory Affairs Manager – Vogtle 1 & 2  
Mr. D.L. Manigo, OE Coordinator – Vogtle 1 & 2  
RType: CVC7000

U. S. Nuclear Regulatory Commission  
Mr. V. M. McCree, Regional Administrator  
Mr. R. E. Martin, NRR Senior Project Manager – Vogtle 1 & 2  
Mr. L. M. Cain, Senior Resident Inspector – Vogtle 1 & 2  
Mr. L. M. Cain, Senior Resident Inspector -Vogtle

Vogtle Electric Generating Plant – Unit 2  
Licensee Event Report 2015-001-00  
Automatic Reactor trip and Safety Injection due to Main Steam Isolation Valve Closure

Enclosure

Unit 2 Licensee Event Report 2015-001-00



**LICENSEE EVENT REPORT (LER)**

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

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, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>1. FACILITY NAME</b> Vogtle Electric Generating Plant – Unit 2	<b>2. DOCKET NUMBER</b> 05000425	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Unit 2 Reactor Trip and Safety Injection due to Main Steam Isolation Valve Closure

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
03	14	2015	2015	001	00	05	13	2015	N/A	05000
									FACILITY NAME	DOCKET NUMBER
									N/A	05000

**9. OPERATING MODE**      **11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
100	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

LICENSEE CONTACT Vogtle Electric Generating Plant, Kevin Walden, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 706-848-4290
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	SB	PSV	Enertech	N	N/A				

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR

**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On March 14, 2015 at approximately 04:29 AM Eastern Daylight Time (EDT), Vogtle Unit 2 was operating in Mode 1 at 100 percent power when the Loop 3 outboard Main Steam Isolation Valve (MSIV) spuriously closed. The sudden closure of the steam isolation valve caused a rapid pressure reduction in the remaining three Steam Generators (SGs) due to increased steam flow resulting in a Reactor Protection System (RPS) actuation due to rate compensated Low Main Steam Line Pressure Safety Injection and Steam Line Isolation. All control rods fully inserted and all equipment actuated as designed.

The unit was stabilized in Mode 3 with decay heat being removed through the atmospheric relief valves (ARVs) to the environment. The Loop 3 MSIV closure was due to failure of the hydraulic dump solenoid valve which resulted in a loss of hydraulic pressure to the MSIV.

This event had no adverse effect on the health and safety of the public, and is of very low safety significance. This event is reportable per 10 CFR 50.73(a)(2)(iv)(A) due to actuation of a system listed in 10CFR 50.739a)(2)(iv)(B). Unit 1 was unaffected.



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

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, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Vogtle Electric Generating Plant – Unit 2	05000425	2015	- 001	- 00	2 OF 3

**NARRATIVE**

**A. REQUIREMENT FOR REPORT**

This report is required per 10CFR50.73(a)(2)(iv)(A) due to an unplanned automatic actuation of the Reactor Protection System (RPS), Containment Isolation Valves, Emergency Core Cooling System (ECCS), Auxiliary Feedwater System (AFW), and Emergency Diesel Generators (EDGs).

**B. UNIT STATUS AT TIME OF EVENT**

Mode 1, 100 percent power.

**C. DESCRIPTION OF EVENT**

On March 14, 2015, Unit 2 reactor tripped at approximately 0429 EDT due to a Safety Injection (SI) / Steam Line Isolation (SLI) actuation. The initiating event was closure of the Loop 3 outboard Main Steam Isolation Valve (MSIV). The valve closed as indicated on the Integrated Plant Computer (IPC) with steam flow lowering from normal to off scale low in approximately 4 seconds. The SI / SLI actuation was initiated due to lowering Loop 2 steam generator pressure. As the MSIV closed, steam flow from loop 3 decreased and the other three steam generator's steam flows increased to continue supplying steam to the main turbine. Loop 2, which is closest in physical proximity to Loop 3, had the largest steam flow increase. The increased steam flow resulted in a reduction in steam generator pressure. The reduction in steam generator pressure in Loop 2 over a few seconds was sufficient to initiate a rate compensated Low Main Steam Line Pressure SI and SLI.

The SI and SLI resulted in a Reactor Trip, Turbine Trip, Containment Isolation, Emergency Core Cooling System (ECCS) actuation, AFW actuation, and start of the EDGs. Due to the Steam Line Isolation the condenser was not available to remove decay heat. As designed, the Atmospheric Relief Valves (ARVs) opened and decay heat was discharged to the atmosphere, with feedwater supplied from the Condensate Storage Tanks (CSTs) and through the AFW pumps to the Steam Generators and to the main steam lines.

Operators responded immediately using emergency response procedures to evaluate the event and take appropriate actions. The SI was terminated in an appropriate time frame and the unit was stabilized in Mode 3 at normal Reactor Coolant System no-load temperature and pressure.

**D. CAUSE OF THE EVENT**

The cause of the event was failure of the Loop 3 outboard MSIV hydraulic dump valve and subsequent loss of hydraulic control pressure. The loss of hydraulic control pressure to the MSIV resulted in the valve closure.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Vogtle Electric Generating Plant – Unit 2	05000425	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
		2015	- 001	- 00	

**NARRATIVE**

**E. SAFETY ASSESSMENT**

The MSIV closing created a low pressure condition in the unaffected Steam Generators. This pressure reached the rate compensated setpoint for a Low Steam Line Pressure Safety Injection and Steam Line Isolation and RPS actuation. All systems responded as required, including all control rods fully inserting into the core, Containment Isolation signal generation and subsequent closure of all valves, startup of ECCS systems, start of the EDGs, and AFW system start up and supply to the Steam Generators with excess heat rejecting to the environment through the ARVs. This system response to the event is as designed for SI and SLI actuation.

Because all systems responded as required and there were no actual adverse effects on the health and safety of the public, the safety significance of this event is considered very low.

**F. CORRECTIVE ACTION**

The solenoid valve was replaced and post maintenance testing was performed satisfactorily.

**G. ADDITIONAL INFORMATION**

1) Failed Components:

Loop 3 Outboard Main Steam Isolation Valve hydraulic dump valve solenoid

2) Previous Similar Events:

None found

3) Energy Industry Identification System Code:

[JC] – Reactor Protection System

[BA] – Auxiliary Feedwater

[SB] – Main Steam System