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Operating Company, Inc.  
Vogtle Electric Generating Plant  
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April 22, 2013

Docket No.: 50-425

NL-13-0803

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

Vogtle Electric Generating Plant – Unit 2  
Licensee Event Report 2013-001-00  
Manual Reactor Trip due to High Reactor Coolant Pump Seal Leakoff Flow

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, 2-2013-001. This letter contains no NRC commitments. If you have any questions, please contact Doug McKinney at (205) 992-5982.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "T. E. Tynan".

T. E. Tynan  
Vice President – Vogtle

TET/GWG

Enclosure: Unit 2 Licensee Event Report 2013-001-00

cc: Southern Nuclear Operating Company  
Mr. S. E. Kuczynski, Chairman, President & CEO  
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer  
Mr. B. L. Ivey, Vice President – Regulatory Affairs  
Mr. B. J. Adams, Vice President – Fleet Operations  
Mr. C. R. Pierce, Regulatory Affairs Director  
Mr. D. A. Jackson, Vogtle OE Coordinator  
RType: CVC7000

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

**Vogtle Electric Generating Plant – Unit 2**  
**Licensee Event Report 2013-001-00**  
**Manual Reactor Trip due to High Reactor Coolant Pump Seal Leakoff Flow**

**Enclosure**

**Unit 2 Licensee Event Report 2013-001-00**

## LICENSEE EVENT REPORT (LER)

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 Section (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 Vogtle Electric Generating Plant – Unit 2	2. DOCKET NUMBER 05000 425	3. PAGE 1 OF 3
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4. TITLE Manual Reactor Trip due to High Reactor Coolant Pump Seal Leakoff Flow
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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
02	26	2013	2013	- 001 -	00	04	22	2013	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE  1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)									
	<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)						
10. POWER LEVEL  94	<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)						
	<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)	Voluntary Report						
Specify in Abstract below or in NRC Form 366A										

12. LICENSEE CONTACT FOR THIS LER	
FACILITY NAME Vogtle Electric Generating Plant / George Gunn, Nuclear Licensing	TELEPHONE NUMBER (Include Area Code) 706-826-3596

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

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

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

On February 26, 2013, at approximately 2302 Eastern Daylight Time (EDT) time, with Unit 2 operating in Mode 1 at 94 percent rated thermal power and End of Life (EOL) Coastdown in progress, Unit 2 operators initiated a manual reactor trip due to Reactor Coolant Pump (RCP) #4 number one seal leakoff flow exceeding the operating limits. The Reactor Trip System, the Engineered Safety Feature Actuation System, and other responding equipment performed as expected. The plant was stabilized in Mode 3. The cause of the event was the addition of air into the Chemical Volume Control System (CVCS) charging system as a result of less than adequate filling and venting of the Reactor Coolant System filter.

The safety significance of this event is low. Unit 1 was unaffected and there were no adverse effects on the health and safety of the public.

LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET

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Vogtle Electric Generating Plant – Unit 2	05000 425	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2013	- 001	- 00	

## NARRATIVE

## A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73(a)(2)(iv)(A) due to an unplanned manual actuation of the Reactor Protection System (RPS) [JC] and an automatic actuation of the Auxiliary Feedwater System (AFW) [BA].

## B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 2 was in Mode 1 at 94 percent rated thermal power with End of Life (EOL) coastdown in progress.

## C. DESCRIPTION OF EVENT

The event occurred following restoration of the Reactor Coolant System (RCS) filter to service following cartridge replacement. Three of the four Reactor Coolant Pump (RCP) seal leakoff flows began increasing within 5 minutes after returning the RCS filter and Chemical Volume Control System (CVCS) demineralizers to service, and completing a 50 gallon dilution. RCP Seal number one leakoff gradually trended upward over the next hour on all four RCPs. The restoration of flow through the CVCS demineralizers and the dilution lowered charging temperature. The Waste Gas System was not in service to remove any gases introduced into the Volume Control Tank (VCT). The gases dissolved back into solution and were introduced into the seal injection lines resulting in thermal expansion differences within the seal materials affecting the seal taper angle causing a gradual increase in flow rate through the seals.

After approximately an hour, seal leakoff flow abruptly increased over the next 20 minutes. Unit 2 operators initiated a manual reactor trip due to RCP #4 number one seal leakoff flow exceeding the operating limits.

## D. CAUSE OF EVENT

The direct cause of the transient was the addition of air into the CVCS charging system as a result of less than adequate filling and venting of the RCS Filter following replacement.

## E. SAFETY ASSESSMENT

When the reactor was manually tripped all rods fully inserted. As a result of the reactor trip, the turbine tripped, the Feedwater System isolated and the AFW system actuated in accordance with plant design. Control Room operators responded appropriately to stop RCP #4 and isolate the number one seal leakoff flow per plant operating procedure and the plant was stabilized in Mode 3 by controlling feedwater flow and rejecting decay heat to the condenser. The Mode 3 decay heat removal requirements are low enough that a single RCS loop with one RCP running is sufficient to remove core decay heat. Based upon these considerations, there was no adverse effect on plant safety or on the health and safety of the public as a result of this event.

LICENSEE EVENT REPORT (LER)  
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## NARRATIVE

## F. CORRECTIVE ACTION

Procedure changes have been implemented to provide instruction to significantly reduce the amount of air intrusion from the RCS filter change by ensuring adequate fill and venting of the RCS filter, providing improved guidance on returning the CVCS demineralizers to service prior to realigning the letdown flow to the CVCS Volume Control Tank, and requiring the Waste Gas System to be in service prior to replacement of a RCS Filter to ensure removal of any gases introduced to the system.

## G. ADDITIONAL INFORMATION

## 1) Failed Components:

None

## 2) Previous Similar Events:

OE 18570-Kewaunee Unit 1, High dissolved oxygen concentration results in increased seal leakoff flow.

## 3) Energy Industry Identification System Code:

[CB] – Chemical and Volume Control / Makeup and Purification System

[JC] – Reactor Protection System

[BA] – Auxiliary Feedwater System

## 4) Other Systems Affected:

None

## 5) Commitment Information:

This report does not create any new permanent licensing commitments.