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June 9, 2006

Docket No.: 50-424

NL-06-1199

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

Vogtle Electric Generating Plant – Unit 1  
Licensee Event Report 1-2006-001  
Manual Reactor Trip Due to Loop 3 Main Feed Regulating Valve Control Failure

Ladies and Gentlemen:

Vogtle Electric Generating Plant – Licensee Event Report (LER) No. 1-2006-001 is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "Don E. Grissette".

Don E. Grissette

DEG/LPH/daj

Enclosure: LER 1-2006-001

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. T. E. Tynan, General Manager – Plant Vogtle  
RTYPE: CVC7000

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Mr. C. Gratton, NRR Project Manager – Vogtle  
Mr. C. J. McCoy, Senior Resident Inspector – Vogtle

<b>NRC FORM 366</b> (6-2004)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	APPROVED BY OMB: NO. 3150-0104	EXPIRES: 06/30/2007
<b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)		Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-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 1	<b>2. DOCKET NUMBER</b> 05000-424	<b>3. PAGE</b>
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**4. TITLE**  
**MANUAL REACTOR TRIP DUE TO LOOP 3 MAIN FEED REGULATING VALVE CONTROL FAILURE**

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER(S)
04	17	2006	2006	001	00	06	09	2006		05000
									FACILITY NAME	DOCKET NUMBER(S)
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § : (Check all that apply)				
	1	20.2201(b)	20.2203(a)(3)(i)	50.73(a)(2)(i)(C)	50.73(a)(2)(vii)
	20.2201(d)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(A)	
	20.2203(a)(1)	20.2203(a)(4)	50.73(a)(2)(ii)(B)	50.73(a)(2)(viii)(B)	
	20.2203(a)(2)(i)	50.36(c)(1)(i)(A)	50.73(a)(2)(iii)	50.73(a)(2)(ix)(A)	
10. POWER LEVEL	20.2203(a)(2)(ii)	50.36(c)(1)(ii)(A)	X 50.73(a)(2)(iv)(A)	50.73(a)(2)(x)	
033	20.2203(a)(2)(iii)	50.36(c)(2)	50.73(a)(2)(v)(A)	73.71(a)(4)	
	20.2203(a)(2)(iv)	50.46(a)(3)(ii)	50.73(a)(2)(v)(B)	73.71(a)(5)	
	20.2203(a)(2)(v)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(C)	OTHER	
	20.2203(a)(2)(vi)	50.73(a)(2)(i)(B)	50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A	

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> Amy Whaley, Performance Analysis	<b>TELEPHONE NUMBER (Include Area Code)</b> (706) 826-3858
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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	SJ	TD	M120	N					

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE		
YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	X	NO			

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

On April 15, 2006, while at 100% power, the Unit 1 Control Room crew was challenged by an erratic response of the Loop 3 Main Feed Regulating Valve (MFRV), 1FV0530, while operating in automatic. The crew was able to stabilize the valve in manual mode, however, over the next 24 hours the control of the valve continued to degrade. On April 16, 2006, it was decided that Unit 1 would be taken to Mode 3 for investigation of the control issue with 1FV0530. On April 17, 2006, at 0026 EDT, Unit 1 was manually tripped at 33% power when Steam Generator number 3 water level was observed to be slowly increasing with 1FV0530 unable to control level in either automatic or manual.

A review found that 1FV0530 operated erratically due to a failed I/P transducer, which resulted in the inability to reduce feedwater flow requiring a manual reactor trip. Based on the results of the observations and failure analysis performed on the I/P transducer, two failures were identified. One failure was the supply air input connector and the resultant electrical to pneumatic conversion process for a valve internal to the controller, and the second failure was the electronic circuit board. The failed transducer and the remaining Unit 1 MFRV I/P transducers were replaced with different make and model I/P transducers prior to the unit restart.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Vogtle Electric Generating Plant - Unit 1	05000-424	2006	-- 001	-- 00	2 OF 4

**17. NARRATIVE** (If more space is required, use additional copies of NRC Form 366A)

**A) REQUIREMENT FOR REPORT**

10 CFR 50.73 (a)(2)(iv) requires this report because an unplanned actuation of the reactor protection system occurred.

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

At the time of this event, Unit 1 was in Mode 1 (Power Operation) at 33% rated thermal power. Other than that described herein, there was no inoperable equipment that contributed to the occurrence of this event.

**C) DESCRIPTION OF EVENT**

On April 15, 2006, while at 100% power the Unit 1 Control Room crew was challenged by an erratic response of the Loop 3 Main Feed Regulating Valve (MFRV), 1FV0530, while operating in automatic. The crew was able to stabilize the valve in manual mode, however, over the next 24 hours the control of the valve continued to degrade. On April 16, 2006, it was decided that Unit 1 would be taken to Mode 3 (Hot Standby) for investigation of the issues with the Loop 3 MFRV. On April 17, 2006, at 0026 EDT, Unit 1 was manually tripped at 33% power when Steam Generator (SG) number 3 water level was observed to be slowly increasing with the Loop 3 MFRV, 1FV0530, unable to control level in either automatic or manual. The Main Feedwater system isolated and the Auxiliary Feedwater (AFW) system actuated. Control room operators responded to throttle the AFW valves to control SG water level, and the unit transitioned to stable operation in Mode 3. The NRC Operations Center was notified of this event on April 17, 2006, at 0120 EDT.

The failed transducer was procured from the vendor as a replacement transducer for the obsolete model I/P transducer. The obsolete model was originally installed in the plant because of its reliability and tight shutoff feature not available from other manufacturers. Plant Vogtle utilized the tight shutoff feature to ensure I/P or positioner calibration drift did not cause valve leakage. Prior to installation at Plant Vogtle, the replacement model I/P transducer was evaluated in 1999 during AOV diagnostic testing and in the Steam Generator Blowdown (SGBD) System. Through testing and use in the SGBD system, the replacement model I/P transducer proved to be reliable.

The vendor has made manufacturing changes since the initial evaluation of the replacement model I/P transducers. When these changes were made to the non-safety related component, the vendor did not change the model number, outline drawing, installation and operating manual, or otherwise denote the changes. These changes degraded the reliability of the replacement model I/P transducers, which caused unanticipated equipment failures.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Vogtle Electric Generating Plant - Unit 1	05000-424	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		2006	-- 001	-- 00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

D) CAUSE OF EVENT

On April 17, 2006, Unit 1 was manually tripped at 33% power because of the inability to control Steam Generator water level using the Loop 3 Main Feed Regulating Valve (MFRV). A review of the event found that the Loop 3 MFRV, 1FV0530, operated erratically due to a failed I/P transducer. Failure analysis results showed two failures of the I/P transducer. One failure was the air supply input connector and the resultant electrical to pneumatic conversion process for a valve internal to the controller, and the second failure was the electronic circuit board.

E) ANALYSIS OF EVENT

A Unit 1 shutdown was in progress at the time of the reactor trip due to concerns with the Loop 3 Main Feed Regulating Valve (MFRV). The unit shutdown had commenced from 100% power on April 16, 2006 at 1603 EDT. The unit was manually tripped at 33% power on April 17, 2006 at 0120 EDT due to the inability to control Steam Generator (SG) number 3 water level using MFRV 1FV0530. Following the reactor trip, the Main Feedwater system isolated and the Auxiliary Feedwater (AFW) system actuated. Control room operators responded to throttle the AFW valves to control SG water level, and the unit transitioned to stable operation in Mode 3. Based on 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.

This event does not represent a safety system functional failure.

F) CORRECTIVE ACTION

- 1) The failed transducer was replaced with a different make and model transducer, and all other Unit 1 MFRV I/P transducers were replaced prior to the unit restart.
- 2) A schedule for the replacement of all I/P transducers of the same make and model as the failed transducer has been developed. There are approximately 33 I/P transducers of the same make and model remaining in various plant applications.
- 3) Digital positioners were installed in the Unit 2 MFRVs during the Fall 2005 refueling outage, obviating the need for I/P transducers. Digital positioners are scheduled to be installed in the Unit 1 MFRVs during the Fall 2006 refueling outage.

### LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant - Unit 1	05000-424	2006	--	001	--	00	4 OF 4

**17. NARRATIVE** *(If more space is required, use additional copies of NRC Form 366A)*

#### G. ADDITIONAL INFORMATION

- 1) Failed Components:  
I/P Transducer
  
- 2) Previous Similar Events:  
There have been no previous events with a similar cause in the last three years.
  
- 3) Energy Industry Identification System Codes:  
Main Feedwater System – SJ  
Auxiliary Feedwater System – BA