

**Tom Tynan**  
Vice President - Vogtle

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April 27, 2007



Docket Nos.: 50-424  
50-425

NL-07-0886

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

Vogtle Electric Generating Plant  
Licensee Event Report 1-2007-001-01  
Auxiliary Contact Blocks on Motor Starter Assemblies Not Being  
Secured Resulted in the Inability to Meet Their Seismic Qualifications

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(ii), Southern Nuclear Operating Company (SNC) is submitting a revised Licensee Event Report concerning auxiliary contact blocks on motor starter assemblies not being secured resulted in the inability to meet their seismic qualifications. Clarifications have been made to indicate Unit 2 applicability and to include clarifications on the component failure coding.

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

Sincerely,

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

T. E. Tynan  
Vice President – Vogtle  
Vogtle Electric Generating Plant  
7821 River Road  
Waynesboro, GA 30830

TET/DWM/daj

Enclosure: LER 1-2007-001-01

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cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. D. H. Jones, Vice President – Engineering  
RType: CVC7000

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

## LICENSEE EVENT REPORT (LER)

(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](mailto:infocollects@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 1	2. DOCKET NUMBER 05000-424	3. PAGE 1 OF 5
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4. TITLE Auxiliary contact blocks on Motor Starter Assemblies not being secured resulted in the inability to meet their seismic qualifications
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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)
02	19	2007	2007	001	0001	04	27	2007	Vogtle – Unit 2	05000-425
									FACILITY NAME	DOCKET NUMBER(S)
										05000

9. OPERATING MODE  1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § : (Check all that apply)							
	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)	
10. POWER LEVEL  98	20.2203(a)(2)(i)		50.36(c)(1)(i)(A)		50.73(a)(2)(iii)		50.73(a)(2)(ix)(A)	
	20.2203(a)(2)(ii)		50.36(c)(1)(ii)(A)		50.73(a)(2)(iv)(A)		50.73(a)(2)(x)	
	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)		X 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	
NAME Timothy Mattson, Performance Analysis	TELEPHONE NUMBER (Include Area Code) (706) 826-3216

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	BE	BKR	C770	Y						

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

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

On February 19, 2007 at 1330, a top-mounted auxiliary contact block for the Unit 1 'B' Train SI Pump Mini-flow Isolation valve motor starter assembly was found not completely engaged. This component was assumed inoperable for longer than allowed by Technical Specifications (TS) as a result of not meeting seismic qualifications. This condition was discovered during a broadness inspection performed on both Unit 1 and Unit 2 as a corrective action to an earlier event on October 14, 2006, where the Unit 2 'A' Train Containment Spray Suction Isolation Valve failed to close as a result of a bound top-mounted auxiliary contact. Upon finding the auxiliary contact block locking tab not engaged during the February 19, 2007 inspection, the seismic qualification of any auxiliary contact block that is not fully seated was called into question, including the Unit 2 'A' Train Containment Spray Suction Isolation Valve, which was found on October 14, 2006. Over 250 motor starter assemblies on both units (including all safety related) have been inspected as a result of the broadness inspection. A total of eight top mounted auxiliary contact blocks on the motor starter assemblies were not completely engaged. Six were determined to be reportable.

Investigation of the February 19 event concluded that the original installation of the top-mounted auxiliary contact blocks did not have adequate procedural guidance to ensure they were properly engaged via a locking tab. Maintenance procedures have been revised after the October 14 event to require independent verification of auxiliary contact block engagement after installation.

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

## A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(i) because the units operated in a condition prohibited by TS when safety-related components were inoperable for longer than allowed by the TS.

## B. UNIT STATUS AT TIME OF EVENT

At the time of the discovery of this event, both Unit 1 and Unit 2 were operating in Mode 1 (power operation) at full power. Other than that described herein, there was no inoperable equipment that contributed to the occurrence of this event.

## C. DESCRIPTION OF EVENT

On February 19, 2007 at 1330, a top-mounted auxiliary contact block for the Unit 1 'B' Train SI Pump Mini-flow Isolation valve motor starter assembly was found not completely engaged. This component was assumed inoperable for longer than allowed by Technical Specifications (TS) as a result of not meeting seismic qualifications. This condition was discovered during a broadness inspection performed on both Unit 1 and Unit 2 as a corrective action to an earlier event on October 14, 2006, where the Unit 2 'A' Train Containment Spray Suction Isolation Valve failed to close as a result of a bound top-mounted auxiliary contact. Upon finding the auxiliary contact block locking tab not engaged during the February 19, 2007 inspection, the seismic qualification of any auxiliary contact block that is not fully seated was called into question, including the Unit 2 'A' Train Containment Spray Suction Isolation Valve, which was found on October 14, 2006. Over 250 motor starter assemblies on both units (including all safety related) have been inspected as a result of the broadness inspection. A total of eight top mounted auxiliary contact blocks on the motor starter assemblies were not completely engaged. Six were determined to be reportable.

On October 14, 2006, the Unit 2 'A' Train Containment Spray Sump Suction Isolation Valve was successfully stroked open and then failed to stroke closed upon demand during a quarterly surveillance. The cause was determined to be a bound top-mounted contact. Later it was determined to be most likely caused by the top-mounted auxiliary contact block not being completely engaged. The condition was initially determined not to be reportable due to repairs being completed and the valve stroked satisfactory within the time allowed by TS. As a corrective action for this event, a broadness inspection was initiated. On February 19, 2007, during the broadness inspection, a top mounted auxiliary contact block for a motor starter assembly was found not completely engaged. This component was assumed inoperable for longer than allowed by TS as a result of not meeting seismic qualifications.

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

The broadness inspection initiated as a result of the first failure revealed five additional components totaling 6 within TS that were discovered with top mounted auxiliary contact blocks not fully engaged. It should be noted that each of the Motor Operated Valves (MOV)s were successfully functionally tested following the initial installation of each Motor Starter assembly. Four of the MOVs have successfully completed their quarterly surveillances. The Unit 1 Chemical Volume Control System (CVCS) Centrifugal Charging Pump Recirculation to Refueling Water Storage Tank (RWST) MOV has an 18-month surveillance, which is performed during a refueling outage in Mode 5. This MOV has been successfully functionally tested; however, it was installed in the last Unit 1 outage and there have been no subsequent surveillances performed.

## D. CAUSE OF EVENT

During performance of the motor starter design change installation, there was not a verification that the auxiliary contacts were fully engaged and secured via the locking tab.

## E. ANALYSIS OF EVENT

In the valve's motor starter assembly, the top-mounted auxiliary contact block physically slides into grooves on the contactor and is restrained in the engaged position via a locking tab. The fully engaged position ensures alignment of the auxiliary contact block and the contactor that physically actuates the auxiliary contact block plunger. The top-mounted auxiliary contact blocks not being secured into place resulted in the inability to meet their seismic qualifications. During a seismic event, the auxiliary contact block could potentially slide to a position which may prevent the starter and associated auxiliary contacts from changing state.

The auxiliary contact block for Unit 2 'A' Train Containment Spray Sump Suction Isolation Valve was successfully stroked open and then failed to stroke closed upon demand during a quarterly surveillance. The cause was determined to be a bound top-mounted contact. Later it was determined to be most likely caused by the top-mounted auxiliary contact block not being completely engaged. Assuming the auxiliary contact block was not completely engaged from installation, would not have resulted in a safety system functional failure. During the time the 'A' Train is now assumed inoperable, the 'B' Train was available to perform the safety function.

The failure during a seismic event for the auxiliary contact block for the Unit 1 'B' Train SI Pump Mini-flow Isolation Valve would not have resulted in a safety system functional failure. During a cold leg circulation, the 'B' Train SI Mini-flow is required to be isolated and can be accomplished with the common isolation valve.

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

The failure during a seismic event of the auxiliary contacts for the Unit 1 'A' Train Nuclear Service Cooling Water (NSCW) Tower Return Header Spray MOV would not have resulted in a safety system functional failure. The NSCW System is designed to perform its function with a single failure of any active component, assuming the loss of offsite power. The Unit 1 'B' Train NSCW Tower was available during the time the Unit 1 'A' Train NSCW Tower Return Header Spray MOV was declared inoperable.

The failure during a seismic event for the auxiliary contact block for the Unit 2 'A' Train Residual Heat Removal (RHR) Pump Mini-Flow Isolation MOV would not have resulted in a safety system functional failure. This would not have affected the valve's ability to open. However, it may have affected the valve's ability to close. Westinghouse performed an analysis that determined the RHR pump was capable of providing the minimum ECCS Cold Leg Injection with the mini-flow valve unable to close.

The failure during a seismic event for the auxiliary contact block for the Unit 1 'A' Train RHR Inlet Isolation Valve would not have resulted in a safety system functional failure. The 'A' Train Valve would have been able to open during shutdown cooling and the 'B' Train was available for isolation during the time the 'A' Train valve was declared inoperable due to seismic requirements.

The failure during a seismic event for the auxiliary contact block for the Unit 1 'B' Train CVCS Centrifugal Charging Pump Recirculation to RWST MOV would not have resulted in a safety system functional failure. The valve would have opened for mini-flow, protecting the 'B' Train Centrifugal Charging Pump during low flow conditions and the 'A' Train Valve can be used to isolate the line to the RWST.

## F. CORRECTIVE ACTIONS

- 1) Procedure revisions to inspect auxiliary contact assembly engagement after installation and mounting were completed following the October 14, 2006 event. The associated procedural step is designated as a critical step and is a sign-off with Independent Verification of auxiliary contact block engagement.
- 2) A broadness inspection was performed on over 250 motor starter assemblies including all safety related. As a result, 8 top-mounted auxiliary contact blocks were found not fully engaged; 6 were governed under TS. These 8 have been repositioned in the fully engaged position.

## G. ADDITIONAL INFORMATION

- 1) Failed Components: Unit 2 'A' Train Containment Spray Suction Isolation Valve ~~None~~

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

- 2) Previous Similar Events: None
  
- 3) Energy Industry Identification System Code:
  - Ultimate Heat Sink - BS
  - High Head Safety Injection System – BQ
  - Residual Heat Removal – BP
  - Chemical Volume and Control – CB
  - Containment Spray - BE