

J. Bernie Beasley, Jr., P.E.
Vice President
Vogtle Project

**Southern Nuclear
Operating Company, Inc.**
40 Inverness Center Parkway
P.O. Box 1295
Birmingham, Alabama 35201

Tel 205.992.7110
Fax 205.992.0403



Energy to Serve Your WorldSM

October 12, 2000

LCV-1485

Docket No. 50-424

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

Ladies and Gentlemen:

**VOGTLE ELECTRIC GENERATING PLANT
LICENSEE EVENT REPORT 1-00-003
SAFETY INJECTION SYSTEM RENDERED
INOPERABLE WITH UNIT IN HOT STANDBY**

In accordance with the requirements of 10 CFR 50.73, Southern Nuclear Operating Company hereby submits a Vogtle Electric Generating Plant licensee event report for an event that occurred on Unit 1 on September 17, 2000.

Sincerely,

J. B. Beasley, Jr.

JBB/JPC

Enclosure: LER 1-00-003

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser
Mr. M. Sheibani
SNC Document Management

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. Ramin R. Assa, Vogtle Project Manager, NRR
Mr. J. Zeiler, Senior Resident Inspector, VEGP

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NRC FORM 366 (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED OMB NO. 3150-0104 EXPIRES: 06/30/2001 Estimated burden per response to comply with this mandatory information request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If 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.					
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)										
FACILITY NAME (1) Vogtle Electric Generating Plant – Unit 1					DOCKET NUMBER (2) 0 5 0 0 0 4 2 4		PAGE (3) 1 OF 4			
TITLE (4) SAFETY INJECTION SYSTEM RENDERED INOPERABLE WITH UNIT IN HOT STANDBY										
EVENT DATE (5) MONTH DAY YEAR 0 9 1 7 2 0 0 0			LER NUMBER (6) YEAR SEQUENTIAL NUMBER REVISION NUMBER 2 0 0 0 0 0 3 0 0			REPORT DATE (7) MONTH DAY YEAR 			OTHER FACILITIES INVOLVED (8) FACILITY NAME DOCKET NUMBER 0 5 0 0 0 FACILITY NAME DOCKET NUMBER 0 5 0 0 0	
OPERATING MODE (9) 3		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR *: (Check one or more) (11)								
POWER LEVEL (10) 0		20.2201(b)		20.2203(a)(2)(v)		☒ 50.73(a)(2)(i)		50.73(a)(2)(viii)		
		20.2203(a)(1)		20.2203(a)(3)(i)		☐ 50.73(a)(2)(ii)		50.73(a)(2)(x)		
		20.2203(a)(2)(i)		20.2203(a)(3)(ii)		☐ 50.73(a)(2)(iii)		73.71		
		20.2203(a)(2)(ii)		20.2203(a)(4)		☐ 50.73(a)(2)(iv)		OTHER		
		20.2203(a)(2)(iii)		50.36(c)(1)		☒ 50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A		
20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)						
LICENSEE CONTACT FOR THIS LER (12) NAME: Mehdi Sheibani, Nuclear Safety and Compliance								TELEPHONE NUMBER (include area code) 7 0 6 - 8 2 6 - 3 2 0 9		
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
SUPPLEMENTAL REPORT EXPECTED (14) YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO						EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR 				
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)										
On September 17, 2000, safety injection system (SI) Train A was inoperable for planned testing and isolated from the reactor coolant system (RCS) cold legs and SI Train B. During the testing, a motor operated valve had to be manually closed. Testing was completed and Train A was unisolated from the RCS cold legs and SI Train B. Shortly thereafter, control room personnel stroked a Train A valve that had been manually operated during the test in order to restore the valve to operability. Prior to the valve stroke, the SI Train A pump was placed in pull-to-lock to prevent inadvertant starting and runout. However, this open valve created a condition in which the Train B SI pump was susceptible to runout had it been started following a large-break LOCA. Therefore, during the time of the valve stroking, both SI pumps were inoperable. This is a condition that could have prevented the fulfillment of the SI system safety function and also represents operation of the unit in a condition prohibited by the Technical Specifications. The causes of this event were a lack of procedural guidance to address precautions to be taken in the event of valve anomalies, and personnel errors by those conducting the testing for not ensuring system operability. Corrective actions are described herein.										

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant – Unit 1	0 5 0 0 0 4 2 4	2 0 0 0	0 0 3	0 0	2	OF	4

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

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(i) because the unit operated in a condition prohibited by the Technical Specifications (TS). It is also reportable per 10 CFR 50.73 (a)(2)(v) because a condition existed, when both trains of safety injection (SI) were rendered inoperable, that alone could have prevented the fulfillment of a safety function needed to mitigate the consequences of an accident.

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 1 was in Mode 3 (hot standby) at 0% of rated thermal power at the start of a refueling outage. Reactor coolant system temperature was 557 degrees F and 2235 psig. Other than that described herein, there was no inoperable equipment that contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On September 17, 2000, SI Train A was inoperable for planned testing per procedure 14450-1, "RCS Pressure Isolation Valve Inservice Leak Test." As part of the test, valve 1HV-8821A (SI Train A to Cold Legs) was closed to isolate the Train A pump from the common discharge header to the reactor coolant system (RCS) cold legs. The Train B SI system remained operable and was capable of injection into the RCS cold legs. After having been opened for testing, valve 1HV-8802A (SI Train A to Hot Legs) would not fully close utilizing the motor operator. 1HV-8802A had to be manually closed. Following completion of testing, 1HV-8821A was re-opened, thus restoring the two SI trains to a normal standby alignment.

Following system restoration, shift supervision recognized that a motor operated valve cannot be considered operable after manual operation until it is stroked using the motor operator, per the requirements of procedure 10000-C, "Conduct of Operations." Control room personnel placed the Train A SI pump in pull-to-lock to prevent it from starting and pumping through 1HV-8802A to the RCS hot legs. (The SI analyzed safety function requires pumping flow to only the RCS cold legs in the initial stages of an accident, and flow to only the RCS hot legs later in an accident scenario.) Valve 1HV-8802A was stroked using the motor operator at 0809 EDT and returned to operable status. At this time, a staff senior reactor operator (SRO) was in the control room observing various work items. During the 1HV-8802A valve stroking, the staff SRO observed that 1HV-8821A was open. He questioned the system operability while having both the hot leg and cold leg paths aligned

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TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Vogtle Electric Generating Plant – Unit 1	0 5 0 0 0 4 2 4	2 0 0 0	0 0 3	0 0	3	OF	4

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at the same time. Had the Train B pump started during the 30-60 seconds that 1HV-8802A was being stroked, pump runout may have occurred, rendering the pump inoperable and preventing the fulfillment of the safety function of the SI system. This also represented unit operation in a condition prohibited by the TS because there is no action for having both SI pumps inoperable while in Mode 3. The NRC Operations Center was notified of this event on September 17, 2000, at 1103 EDT.

D. CAUSE OF EVENT

The causes of this event were:

- 1) The valve 1HV-8802A motor operator is not designed to close against the differential test pressure. This required the valve to be closed manually. In addition, the 14450-1 testing procedure recognized that 1HV-8802A may require manual closing, but provided no guidance or precautions for conducting the required follow-up valve stroking utilizing the motor operator.
- 2) Cognitive personnel errors occurred on the part of control room personnel operating the unit and conducting the testing. The personnel involved failed to recognize the effect on SI Train B pump operability when stroking valve 1HV-8802A without isolating the two SI trains by closure of 1HV-8821A. There were no unusual characteristics of the work location that contributed to the occurrence of these errors by the licensee personnel involved.

E. ANALYSIS OF EVENT

This event represents a safety system functional failure.

At the time of this event, the RCS was at its normal operating pressure of 2235 psig. For all design basis accidents other than a large-break LOCA, RCS pressure will initially remain above the design shutoff head of the SI pumps; therefore, the possibility for pump runout was only present had a large-break LOCA occurred during the approximate 60 seconds that 1HV-8802A was stroking. A risk-based analysis of this event was performed that concluded that the increases in core damage frequency and large early release probability from having both trains of safety injection inoperable for approximately 60 seconds are not risk significant.

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		2 0 0 0	0 0 3	0 0				
		0 5 0 0 0 4 2 4				4	OF	4

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F. CORRECTIVE ACTIONS

- 1) Procedure 14450-1 and similar surveillance procedures will be revised prior to the Spring 2001 refueling outage to include necessary precautions to be employed when valves do not operate as expected.
- 2) Personnel involved in conducting the testing have been counseled regarding the need to evaluate all circumstances of a situation prior to taking action, and to seek additional assistance/guidance when unusual conditions occur.
- 3) This event will be addressed in licensed operator requalification training by December 20, 2000.

G. ADDITIONAL INFORMATION

- 1) Failed Components:
None
- 2) Previous Similar Events:
None
- 3) Energy Industry Identification System Code:
Safety Injection System – BQ
Reactor Coolant System - AB