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NL-17-1058

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

Vogtle Electric Generating Plant – Unit 2
Licensee Event Report 2017-001-01
Power Supply Failure Results in Operation in a Condition Prohibited by Technical Specifications
Supplement

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), Southern Nuclear Operating Company is submitting the enclosed Licensee Event Report, 2017-001-01 for Vogtle Electric Generating Plant Unit 2. This letter contains no NRC commitments. If you have any questions, please contact Dom Sutton at (706) 848-1428.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Darin J. Myers".

Darin J. Myers
Vice President
Vogtle 1 & 2

DJM/KCW

Enclosure: Unit 2 Licensee Event Report 2017-001-01

Cc: Regional Administrator
NRR Project Manager – Vogtle 1 & 2
Senior Resident Inspector – Vogtle 1 & 2
RType: CVC7000

NRC FORM 366 (04-2017)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104		EXPIRES: 03/31/2020					
LICENSEE EVENT REPORT (LER) (See Page 2 for required number of digits/characters for each block)												
(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/												
1. FACILITY NAME Vogtle Electric Generating Plant					2. DOCKET NUMBER 05000425		3. PAGE 1 OF 3					
4. TITLE Power Supply Failure Results in Operation in a Condition Prohibited by Technical Specifications												
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		
3	9	2017	2017	- 001	- 01	06	29	2017		05000		
									FACILITY NAME	DOCKET NUMBER		
										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)(ii)(A)		<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
		<input type="checkbox"/> 20.2201(d)			<input type="checkbox"/> 20.2203(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(ii)(B)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
		<input type="checkbox"/> 20.2203(a)(1)			<input type="checkbox"/> 20.2203(a)(4)			<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)		
		<input type="checkbox"/> 20.2203(a)(2)(i)			<input type="checkbox"/> 50.36(c)(1)(i)(A)			<input type="checkbox"/> 50.73(a)(2)(iv)(A)		<input type="checkbox"/> 50.73(a)(2)(x)		
10. POWER LEVEL 100		<input type="checkbox"/> 20.2203(a)(2)(ii)			<input type="checkbox"/> 50.36(c)(1)(ii)(A)			<input type="checkbox"/> 50.73(a)(2)(v)(A)		<input type="checkbox"/> 73.71(a)(4)		
		<input type="checkbox"/> 20.2203(a)(2)(iii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> 73.71(a)(5)		
		<input type="checkbox"/> 20.2203(a)(2)(iv)			<input type="checkbox"/> 50.46(a)(3)(ii)			<input type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> 73.77(a)(1)		
		<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)(D)		<input type="checkbox"/> 73.77(a)(2)(i)		
		<input type="checkbox"/> 20.2203(a)(2)(vi)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)			<input type="checkbox"/> 50.73(a)(2)(vii)		<input type="checkbox"/> 73.77(a)(2)(ii)		
					<input type="checkbox"/> 50.73(a)(2)(i)(C)			<input type="checkbox"/> OTHER		Specify in Abstract below or in NRC Form 366A		
12. LICENSEE CONTACT FOR THIS LER												
LICENSEE CONTACT Dom Sutton, Regulatory Affairs Manager, Vogtle Electric Generating Plant								TELEPHONE NUMBER (Include Area Code) 706-848-1428				
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			
X	ED	RJX	A121	Y								
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) Between January 16 and February 13, 2017, a power supply that supports operation of one of two ventilation supply fans for the 2A Emergency Diesel Generator (EDG) failed. Vogtle Electric Generating Plant (VEGP) Technical Specifications (TS), 3.8.3 Condition F requires restoration of the fan within 14 days or the EDG must be declared inoperable. This condition was not identified by operators because there is no failure indication. Therefore, the power supply was not repaired within the required time. The EDG should have been declared inoperable and TS 3.8.1. Condition B entered. Subsequently the completion time for TS 3.8.1 Condition B expired and the unit should have been shut down. This action was not taken and Unit 2 operated in a condition prohibited by TS. Between February 13 and February 22, 2017, the second power supply failed on this EDG resulting in the second ventilation supply fan being inoperable. Since no failure indication is available, this condition was not identified by the operators. The TS 3.8.3 action for two power supplies inoperable is to immediately declare the EDG inoperable. Subsequently, the completion time expired and the unit operated in a condition prohibited by TS. During a monthly surveillance run on March 8, both power supplies were discovered failed. Both power supplies were replaced on March 9, 2017 and the EDG was declared operable.												

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

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollcts.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 NUMBER	3. LER NUMBER		
Vogtle Electric Generating Plant	05000-425	YEAR	SEQUENTIAL NUMBER	REV NO
		2017	- 001	- 01

NARRATIVE**A. Event Description**

On March 15, 2017 during a review of past events with the Unit 2 A-Train, Emergency Diesel Generator (EDG)[DG], it was discovered that a power supply that supports the "B" ventilation supply fan [VJ] failed between the diesel run on January 16, 2017 and February 13, 2017. The EDG has two power supplies supporting a common speed sensing circuit and one ventilation fan each. The EDG can successfully operate with one power supply supporting the speed sensing circuit. The "A" ventilation fan immediately starts upon EDG start. The "B" ventilation fan enters stand-by on EDG start and operates once thermostat temperature reaches 93F. Per Vogtle TS 3.8.3 Condition F, if a ventilation supply fan is not operable, the fan must be restored operable within 14 days or the associated EDG must be declared inoperable. This restoration time was not met as the condition was not identified by operators because no indication is available to reveal the failure while the EDG is in standby. Per TS 3.8.3, Condition G, operators should have declared the associated EDG inoperable on February 27, 2017 and entered TS 3.8.1. Condition B. TS 3.8.1 Condition B allows a 1 hour completion time for verification of certain electrical parameters and if these are not completed, Condition C is entered, which is a 72-hour shutdown action. Because it was not recognized that the power supply was failed, these actions were not taken and the plant operated in a condition prohibited by TS from the time the power supply failed until the power supply was replaced on March 9, 2017. Subsequently, between February 13 and February 22, 2017, the second power supply failed resulting in both ventilation supply fans being inoperable. This condition was also not identified by the operators due to no indication being available to reveal the failure. The TS required action for this condition (TS 3.8.3 Condition G) is to immediately declare the associated EDG inoperable. Declaration by the operators of the 2A EDG inoperable per TS 3.8.1 Condition B would have allowed a 1-hour completion time for verification of certain electrical parameters and if these are not completed, Condition C is entered, which is a 72-hour shutdown action. Because it was not recognized that these power supplies were failed, these actions were not taken and the plant operated in a condition prohibited by TS. On March 8, the 2A EDG was started for a monthly surveillance; however, normal start indications were not working and the operators shut down the EDG and declared it inoperable. During troubleshooting, the two power supplies were found failed and both were replaced March 9, 2017. Once the work was complete, the 2A EDG ran successfully. The power supplies on the B-Train EDG and the Unit 1 EDGs were checked and none of them were failed. The unit operated in Mode 1 at 100 percent power during the entire time of these events. Because the unit operated in a condition prohibited by Technical Specifications, these events are reportable as required by 10 CFR 50.73(a)(2)(i)(B).

B. Cause of Event

The cause of the operation in a condition prohibited by TS was a failure to recognize that the power supply had failed and rendered the ventilation supply fans inoperable. The reason for the failure of the power supplies has been attributed to random voltage spikes on the DC bus. The most likely cause is the battery charger on the circuit.

C. Safety Assessment

During the first condition prohibited by Tech Specs, the EDG was able to start and load its associated safety related electrical bus because the second power supply was still available. As discussed in the Tech Spec Bases, except in extreme temperatures, only one fan is needed to keep the temperature in the EDG room below the limit of 120F. During the time that this fan was inoperable, the outside temperatures remained well below the 93F limit for single fan operation as listed in the TS Bases. Because the EDG could perform its required safety function during this time, the safety significance of this event was very low.

For the second condition prohibited by Tech Specs, the EDG would have started but would not have automatically loaded the electrical bus due to an electrical permissive from the speed sensing circuit powered by the failed power supplies. During this time, the opposite train EDG was fully operable and both power supplies were verified

(04-2017)



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to be operational. This would have allowed an electrical safety bus to be powered during an accident. Additionally, all required offsite electrical sources were available and the combustion turbines with blackstart capabilities, adequate fuel, along with the associated underground power line at Plant Wilson were available and were within their required reliability parameters. These capabilities were determined well after the condition occurred and the diesel was repaired. The capabilities of other electrical sources were not evaluated during the period of inoperability. However, with these additional measures available for supplying the safety related electrical bus, the safety significance of this event was very low.

D. Corrective Actions

Both power supplies for the 2A EDG were replaced when it was recognized that they were failed. The "A" battery charger that was in service upstream of these power supplies during all the failures was taken out of service and the "B" battery charger was put into service. During a recent 2A EDG maintenance period, the "A" battery charger was rebuilt and components sent off for failure analysis. Lastly, there is continuous monitoring of the DC bus looking for random voltage spikes. None have been detected since the monitoring was put into place.

E. Previous Similar Events:

None