

**Virginia Electric and Power Company
Surry Power Station
5570 Hog Island Road
Surry, Virginia 23883**

January 30, 2013

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

Serial No.: 13-057
SPS: JCP
Docket No.: 50-280,
50-281
License No.: DPR-32
DPR-37

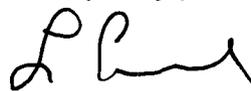
Dear Sirs:

Pursuant to 10CFR50.73, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to Surry Power Station Unit 1 and 2.

Report No. 50-280, 50-281/2013-001-00

This report has been reviewed by the Station Facility Safety Review Committee and will be forwarded to the Management Safety Review Committee for its review.

Very truly yours,



N. L. Lane,
Site Vice President
Surry Power Station

Enclosure

Commitment contained in this letter: None

JE22
NRL

cc: U.S. Nuclear Regulatory Commission, Region II
Marquis One Tower, Suite 1200
245 Peachtree Center Ave., NE
Atlanta, GA 30303-1257

NRC Senior Resident Inspector
Surry Power Station

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: 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, 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 Surry Power Station, Unit 1	2. DOCKET NUMBER 05000-280	3. PAGE 1 OF 5
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4. TITLE
Lack of Established Method Results in Detached Lead and Inoperable Emergency Diesel Generator

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
12	06	12	2013	- 001 -	00	01	30	13	Surry Power Station, Unit 2	05000281
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE N	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)											
10. POWER LEVEL 100	<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)	<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 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 checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME N.L. Lane, Site Vice President	TELEPHONE NUMBER (Include Area Code) (757) 365-2001
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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
E	EK	GEN	G080	Y					

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

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

On December 6, 2012 at 11:15, with Surry Power Station Unit 1 at 100 and Unit 2 at 98 percent power, the monthly start test for Emergency Diesel Generator (EDG) 3 found the incoming voltage higher than expected. Following an unsuccessful attempt to lower voltage, the diesel was secured at 11:37. A lead associated with a relay in the voltage regulator circuit was found detached. The lead was reconnected, the generator tested satisfactorily, and EDG 3 was declared operable at 03:39 on December 7, 2012. The most probable cause was the inadvertent disconnection of the lead during removal of a data acquisition system after the previous run of EDG 3 on November 3, 2012. An evaluation determined EDG 3 could not perform its function with the lead detached. Therefore, EDG 3 was considered to be inoperable from November 3 until December 7, 2012, exceeding the Technical Specification limiting condition for operation (LCO). This report is being submitted pursuant to 10CFR50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications. In addition, the second train of emergency power for each unit was inoperable for testing while EDG 3 was inoperable and is reportable pursuant to 10CFR50.73(a)(2)(v)(D). This event did not affect the health and safety of the public.

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NARRATIVE

1.0 DESCRIPTION OF THE EVENT

On December 6, 2012, at 11:15, with Unit 1 at 100 percent and Unit 2 at 98 percent power, the scheduled performance of the emergency diesel generator (EDG) 3 [EIIIS-EK-GEN] monthly start test found the incoming voltage meter indicated the generator output voltage was off scale high. Normal voltage output is expected to be between 4000 VAC and 4400 VAC. An estimate of the generator output voltage was 5600 VAC. Following an unsuccessful attempt to lower voltage, the stop pushbuttons were depressed and EDG 3 was secured at 11:37.

During visual inspection of the EDG 3 remote excitation cabinet, a lead in the voltage regulator circuit was found not connected/landed in its expected location. The lead is associated with the control room motor operated potentiometer and is in series with the voltage regulator feedback control magnetic amplifiers. With the lead detached, the voltage regulator had no feedback or control to lower or regulate voltage. The lead connection is a flat blade inserted into a blade receptacle. An inspection of the detached lead showed no indication of damage, and the female connection showed no signs of spring. The lead was reconnected, and the tightness of the connection was verified.

Near the end of the shutdown sequence, personnel within the EDG room reported an acrid odor coming from the EDG remote excitation panel. After the EDG shutdown, small wisps of smoke were visible emanating from the panel vent. Thermography of the cabinet exterior identified increased temperature in the area of the generator output potential transformers, which supply excitation current to the generator field during operation. The cabinet was opened and inspected, and components subjected to the elevated voltage were tested with no damage identified.

The last successful run of EDG 3 prior to this event was on November 3, 2012 for the emergency bus logic test. During the logic test, a data acquisition system (DAS) was installed in the remote excitation cabinet with the test leads secured to internal wiring to ensure the test leads would remain secure for the diesel run. Following the successful test and EDG 3 run, the DAS leads were removed from the cabinet. An evaluation determined the voltage regulator circuit lead was most probably detached during the removal of the DAS after logic testing, and that EDG 3 would not have been able to perform its function with the lead detached.

As a result of the prior operability evaluation, EDG 3 was assumed to be inoperable from November 3, 2012 until December 7, 2012, exceeding Technical Specification 3.16 limiting condition of operation of seven days for one of two EDGs. Therefore, this report is being submitted pursuant to 10CFR50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.

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EDG 1 was removed from service on December 3, 2012 for its monthly start test. In addition, EDG 2 was removed from service on November 4 for logic testing and on November 29, 2012 for six minutes to shutdown the diesel following an autostart. EDG 3 is a shared backup EDG for each unit and, since it was considered inoperable because of the detached lead, the emergency power system for Unit 1 and 2 was inoperable for a period of time when the Unit 1 and 2 EDGs were out of service for testing. Therefore, this report is also being submitted pursuant to 10CFR50.73(a)(2)(v)(D), any event or condition that alone could have prevented the fulfillment of the safety function of systems needed to mitigate the consequences of an accident.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

This event was determined not to affect the health and safety of the public.

Unit 1 was at power during the time EDG 3 was considered inoperable. The Unit 1 Maintenance Rule (a)(4) risk assessment was recalculated to assess the risk impact of EDG 3 being out of service along with the other systems and components that were out of service for this time period. The recalculated Unit 1 risk demonstrated that no out-of-service system or component configurations exceeded acceptable limits, therefore no additional compensatory actions were required. The calculated increase in risk was very small in accordance with Regulatory Guide 1.174.

Unit 2 was shut down for the majority of the time EDG 3 was considered inoperable. For the shutdown unit, risk is determined based upon defense-in-depth. Power availability directly affects the minimum defense-in-depth of the other key safety functions. With all equipment to provide power available, the risk would be low and no contingency actions needed.

Based on the initial shutdown risk assessment of the refueling outage schedule, there was a time period when power availability was expected to be at the minimum acceptable defense-in-depth due to EDG 2 being unavailable during logic testing. Considering EDG 3 unavailable, the defense-in-depth was less than the minimum. However, since logic testing is a high risk evolution, a contingency plan to restore power availability to acceptable margins is required.

The unavailability of EDG 3 also resulted in inventory control being less than the minimum defense-in-depth during performance testing of the low head safety injection system during lowered inventory. A contingency plan to restore inventory control was in place during this time.

The contingency plans do not change the identified shutdown risk conditions, but provide a systematic means to respond to challenges to shutdown key safety

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functions. The plan during logic testing included proceduralized steps to restore the emergency bus if it remained de-energized. The plan during lowered inventory included criteria for stopping the refueling cavity draining evolution and restoring pressurizer and cavity levels. Therefore, adequate defense-in-depth measures were in place for the time period when EDG 3 was unavailable.

3.0 CAUSE

An interim evaluation determined the most probable cause of the EDG 3 elevated output voltage was the lack of an established method to provide a stress relief for the DAS leads without using the permanently installed wiring in the remote excitation cabinet.

The practice for attaching DAS leads to the EDG was to utilize permanent wiring to secure the DAS leads and ensure no stress was present that could result in a detached test lead. After the successful EDG 3 start and run, the DAS leads were removed and the permanent lead in the voltage regulator cabinet was inadvertently dislodged.

After the failed test in December 2012, the detached lead was connected and the connection was verified to be secure and tight, indicating it was not probable the lead had become detached due to age or vibration. It appeared force would have been required to remove the connection.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

Turn ratio checks were performed on the associated potential transformers (PTs), and visual inspections of the PTs, wiring, relays, lugs, and fuses were performed with no issues identified.

An engineering common mode failure analysis determined no common mode failures existed for EDG 1 and EDG 2.

The detached lead was relanded, the monthly start and fuel oil system tests completed satisfactorily, and EDG 3 returned to service on December 7, 2012 at 03:39.

5.0 ADDITIONAL CORRECTIVE ACTIONS

None

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6.0 ACTIONS TO PREVENT RECURRENCE

The EDG DAS procedure was revised to include a note that test leads will not be tied off to any single control circuit lead and that independent verification for checking cabinet wiring for discrepancies or disturbances due to removal of DAS test leads will be performed.

Additional corrective actions to prevent recurrence will be identified when the root cause evaluation is completed and will be implemented through the corrective action program.

7.0 SIMILAR EVENTS

None

8.0 MANUFACTURER/MODEL NUMBER

Generator: General Electric Electro-motive Division/A-20-C2

9.0 ADDITIONAL INFORMATION

None