10CFR50.73

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

July 8, 2008

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

Serial No.: 08-0360
SPS: JSA
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 Units 1 and 2.

Report No. 50-280, 50-281/2008-002-00

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

Very truly yours,

Donald E. Jernigan,
Site Vice President Surry Power Station

Enclosure

Commitments contained in this letter: None

JE22
NRR

cc: United States Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-8931

NRC Senior Resident Inspector
Surry Power Station

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES: 8/31/2010

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 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, 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.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
SURRY POWER STATION, UNIT 1	05000 - 280	1 OF 4

4. TITLE

Relay Failure Results in Emergency Diesels Auto-Starting

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	DOCUMENT NUMBER
									Surry Power Station, Unit 2	05000 - 281
05	17	2008	2008	-- 002 --	00	07	08	2008	FACILITY NAME	DOCUMENT NUMBER 05000

9. OPERATING MODE

N

10. POWER LEVEL

100%

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)
☐ 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)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	VOLUNTARY LER

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (*Include Area Code*)
Brandford L. Stanley, Director Safety and Licensing	(757) 365-2003

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
B	FK	RLY	E155	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (*If yes, complete 15. EXPECTED SUBMISSION DATE*) ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On May 17, 2008, at 0904 hours Emergency Diesel Generators 2 and 3 automatically started to re-power the 2H and 1J Emergency Busses due to a failed relay on an offsite power supply breaker in the switchyard. Unit 1 remained at 100% power and Unit 2, which was in cold shutdown for a scheduled refueling, maintained its shutdown cooling. The cause of the event was a failure of a 34.5 KV breaker failure lockout relay resulting in a loss of off-site power to the "A" and "B" Reserve Station Service Transformers which de-energized the "D" and "E" transfer busses that supplies the 2H and 1J Emergency busses. The defective lockout relay was replaced with a new relay and offsite power was restored to the 2H and 1J Emergency busses. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(iv)(A) for automatic actuation of the Emergency Diesel Generators.

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

1.0 DESCRIPTION OF THE EVENT

On May 17, 2008, at 0904 hours, with Unit 1 at 100% power and Unit 2 in cold shutdown for a scheduled refueling, the breaker failure lockout relay (LOR) [EIIS-EA-RLY] for the switchyard Bus 5, 34.5KV offsite supply breaker inadvertently operated causing the loss of power to Bus 5. This resulted in the loss of off-site power to "A" and "B" Reserve Station Service Transformers (RSSTs) [EIIS-EA-XFMR] which de-energized the "D" and "E" Transfer Buses [EIIS-EA-BU] that supplies the 2H and 1J Emergency busses. An under voltage auto start signal was generated and the #2 and #3 Emergency Diesel Generators (EDG's) [EIIS-EK-DG] started and loaded as designed on the 2H and 1J emergency buses respectively.

The function of this breaker failure LOR is to send a signal to open a sequence of breakers to secure the entire bus when a breaker receives a trip signal but fails to open. Upon initial observation after the event, the LOR was found in the tripped position with no valid signal having been sent. It was identified that a mechanical failure had occurred in the LOR.

Offsite power was restored at 1211 hours and EDGs were unloaded, taken offline and placed back in auto. The LOR was replaced with a new relay.

At 1344 hours, an event notification was made to the NRC for Surry Unit 1 and 2 EDG actuation in accordance with 10 CFR 50.72(b)(3)(iv)(A).

This report is also being submitted, pursuant to 10 CFR 50.73(a)(2)(iv)(A), for automatic actuation of the EDGs.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

This event resulted in a partial loss of offsite power to both units and caused two EDGs to start as designed. Although the standby Unit 2 Residual Heat Removal (RHR) pump lost power, shutdown cooling was maintained since the operating pump was served from a separate non-affected bus. An assessment of Unit 1 showed an increase in risk with the partial loss of offsite power; however, due to timely recovery of the offsite power, no risk management actions were required to be implemented. The shutdown safety assessment for Unit 2 indicated that while the offsite power defense in depth was reduced, the risk threshold remained the same as prior to the event. The above actuations and occurrences are within the station design and therefore had no significant nuclear impact. As a result, the health and safety of the public were not affected.

3.0 CAUSE

The investigation revealed that the LOR coil had been replaced during a prior maintenance activity. A functional test was performed on the breaker failure LOR prior to placing it in-service. No operational concerns were noted. The design of the LOR positions the roller arm slightly above the coil while the plunger is fully recessed in the coil. When activation occurs, the plunger will have enough driving force to push the roller arm up causing a fast trip.

The cause of the LOR failure was due to the coil housing within the lockout relay being bent which prevented a plunger from being in the proper position within the coil. It is not known when the coil housing became bent. The bent housing caused the plunger's nose to protrude through the coil in a higher than normal position preventing the roller arm from reaching the full reset position. In this condition, vibration could activate the LOR into the trip position. At the time of this event, jack hammer activities going on outside the control house in the switchyard and/or work in the control house could have created vibrations to trip the relay.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

Offsite power was restored to the 2H and 1J Emergency busses and EDGs were taken offline and placed back in auto. The defective LOR was replaced with a new relay. The new LOR plunger and roller arm gap was inspected for proper clearance and was found acceptable.

5.0 ADDITIONAL CORRECTIVE ACTIONS

An Apparent Cause Evaluation was completed to investigate the event.

The remaining LOR relays in the 230/500KV houses were inspected for potential mechanical issues and no problems were found.

6.0 ACTIONS TO PREVENT RECURRENCE

A technical bulletin was created and distributed to substation technicians informing them of this event and providing additional instruction if a coil is replaced. The instruction requires, upon coil replacement, the clearance between the plunger and the roller arm to be measured with a feeler gauge and be a minimum of .025 inches.

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

7.0 SIMILAR EVENTS

There were no similar events.

8.0 MANUFACTURER/MODEL NUMBER

Electro Switch / 7807D

9.0 ADDITIONAL INFORMATION

None.