10CFR50.73

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

MAR 1 9 2018

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

Serial No.: 18-079
SPS: TSC
Docket No.: 50-280
License No.: DPR-32

Dear Sir or Madam:

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

Report No. 50-280 / 2018-001-00

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,

F. Mladen
Site Vice President
Surry Power Station

Enclosure

Commitment contained in this letter: None

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

IE22
NRR

NRC FORM 366 (04-2017) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

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 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.

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	2. DOCKET NUMBER	3. PAGE
Surry Power Station, Unit 1	05000 280	1 OF 3

4. TITLE

Loss of 4160 Volt Emergency Bus and Start of Emergency Diesel Generator due to Opening Emergency Bus Potential Transformer Drawer

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
									Surry Power Station, Unit 2	05000 281
01	17	2018	2018	001	00	03	19	2018	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
N	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☑ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
100	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Barry Garber	(757) 365-2725

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
A	EK	DR	G080	Y					

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

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

On January 17, 2018, at 09:52 hours, with Units 1 and 2 at 100% power, the 1J emergency bus potential transformer drawer located inside the 1J 4160 V emergency bus undervoltage (UV) relaying cubicle was opened inadvertently, generating a 1J emergency bus UV signal. The signal caused the normal 1J emergency bus supply breaker to open and also caused the automatic start of the #3 Emergency Diesel Generator (EDG). The #3 EDG energized the 1J emergency bus, and all 1J emergency bus loads were verified to be in correct alignment.

After proper re-installation of the bus potential transformer drawer was verified, normal alignment of the #3 EDG and normal alignment of the primary off-site power supply to the 1J emergency bus were reestablished. Both Units 1 and 2 remained at 100% power during the event. All equipment operated as designed.

It was determined that the Operations team, while reviewing an electrical tag-out walkdown task, did not adequately perceive and manage the risk of opening the 1J bus potential transformer drawer. Also, the operator who opened the drawer did not understand the impact to the UV sensing circuit by opening the bus potential transformer drawer.

The condition was reported as an event or condition that results in a valid actuation of an emergency electrical power system, pursuant to 10 CFR 50.72(b)(3)(iv)(A). This event is being reported as an event or condition that results in a valid actuation of an emergency electrical power system, pursuant to 50.73(a)(2)(iv)(A).

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Surry Power Station, Unit 1	05000- 280	2018	- 001	- 00

NARRATIVE

1.0 DESCRIPTION OF THE EVENT

On January 17, 2018, at 09:52 hours, with Units 1 and 2 operating at 100% power, the 1J bus potential transformer drawer [EIIS-EK-DR] located inside the 1J 4160V Emergency Bus UV relaying cubicle was inadvertently opened while performing an electrical tag-out walkdown. The 1J 4160 V emergency bus UV potential transformers [EIIS-EK-XPT] and fuses [EIIS-EK-FU] are attached to the inner panel of the drawer which, when opened, disconnected the UV sensing circuit and generated a UV signal. Emergency bus 1J [EIIS-EK-BU] was de-energized due to the normal bus supply breaker [EIIS-EK-BKR] opening on the UV signal. The UV signal also initiated the start sequence for the #3 EDG [EIIS-EK-DG]. The #3 EDG started normally and energized the 1J bus, as designed. Also as designed, the UV signal tripped the 1J stub bus breaker [EIIS-EK-BKR] and the running component cooling (CC) water pump breaker powered by the 1J bus. The standby CC water pumps [EIIS-CC-P] automatically started when a low CC system pressure signal was received as a result of the power loss to the running CC water pump. All 1J emergency bus loads were verified to be in proper alignment by the Operations team. All equipment performed as expected, and there were no unexplained occurrences.

At 10:47 hours, normal CC pump alignment was restored. At 11:56 hours, the 1J 4160 V emergency bus potential transformer fuses were verified to be installed properly, and restoration of emergency bus normal configuration was commenced. At 12:54 hours, after the 1J 4160 V emergency bus normal supply breaker had been closed, the #3 EDG was secured and returned to normal automatic standby alignment.

An eight-hour non-emergency event notification was made to the NRC pursuant to 10 CFR 50.72(b)(3)(iv)(A) due a valid actuation of the #3 EDG. This report is being made pursuant to 10 CFR 50.73(a)(2)(iv)(A) due a valid actuation of the #3 EDG.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

During the event, the redundant 1H 4160 V emergency bus was supplied by normal off-site power. Also, the Unit 2 4160 V emergency busses, 2H and 2J, were supplied by normal off-site power. The #1, #2, and #3 Emergency Diesel Generators remained available to supply power to emergency bus loads. All equipment performed as designed, and the normal equipment alignment was restored by the Operations team in a timely manner. Therefore this event is of minimal safety significance.

3.0 CAUSE OF THE EVENT

An apparent cause evaluation was conducted, and it was determined that the Operations team, while reviewing the electrical tag-out walkdown task, did not adequately perceive and manage the risk of opening the 1J emergency bus potential transformer drawer under the existing plant conditions. Therefore, contingencies, stop criteria, and other risk mitigation actions were not established. Additionally, the operator who opened the drawer did not understand the impact to the 1J emergency bus UV sensing circuit when opening the 1J emergency bus potential transformer drawer.

4.0 IMMEDIATE CORRECTIVE ACTIONS

All operator qualifications were immediately removed for the operator and approving Operations supervisor, and a remediation plan was developed. A department stand-down was held, and expectations were communicated by station management. A human performance review board was established to document facts, determine lessons learned, and define further actions.

NARRATIVE

5.0 ADDITIONAL CORRECTIVE ACTIONS

Expectations concerning potential risk and consequences of entry into electrical enclosures were established, communicated, and documented by Operations management. The associated electrical industrial safety requirements were included in the communications.

6.0 ACTIONS TO PREVENT RECURRENCE

Further training will be conducted for licensed and non-licensed operators concerning knowledge of bus potential transformer UV circuitry and the impact of opening associated drawers. Also, training will address industrial safety aspects of working near 4 KV equipment.

All corrective actions determined by the apparent cause evaluation will be implemented in accordance with the station corrective action program.

7.0 SIMILAR EVENTS

LER 95-009-00, Personnel Error Results in Loss of 4160 V Transfer Bus and Start of Emergency Diesel Generators

8.0 MANUFACTURER/MODEL NUMBER

G080 / GE JVM-3 bus potential transformer drawer

9.0 ADDITIONAL INFORMATION

Unit 2 remained at 100 percent power during this event. While #3 EDG was loaded on the 1J 4160 V emergency bus, Technical Specification (TS) action statements associated with Unit 2 emergency electrical systems were reviewed, and associated TS clocks were entered. The event did not cause any additional reportable condition. All Unit 2 TS action statements associated with Unit 2 emergency electrical systems were exited when the #3 EDG was returned to normal alignment at 12:54 hours on 1/17/2018.

There were no other structures, systems, or components that were inoperable at the start of the event that contributed to the event.