10CFR50.73

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

APR 0 1 2019

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

Serial No.: 19-104
SPS: TSC
Docket No.: 50-281
License No.: DPR-37

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 2.

Report No. 50-281 / 2019-001-00

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 2	05000 281	1 OF 3

4. TITLE

Foreign Material in Breaker Contact Causes Pressurizer Power Operated Relief Valve Block Valve Inoperability

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
										05000
01	29	2019	2019	001	00	04	01	2019	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	AB	CNTR	C770	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 December 27, 2018, at 08:28 hours, with Units 1 and 2 at 100% power, the breaker for a Unit 2 Pressurizer Power Operated Relief Valve (PORV) block valve tripped on thermal over-current while performing a periodic test. Troubleshooting commenced, but the condition could not be duplicated, and the block valve (a motor operated valve) (MOV) was tested and successfully cycled several times with no issues. The valve was declared operable and returned to service at 14:18 hours. On January 29, 2019, additional testing and inspection of the block valve Motor Control Center (MCC) breaker was performed, and a nylon brush bristle was found within the contactor, inhibiting one phase of power to the MOV motor. Operability of the valve was required on December 4, 2018, when Unit 2 was in Intermediate Shutdown and heating up for return to power operation. Due to foreign material located in the contactor causing inconsistent operation, the block valve was conservatively determined to be inoperable since maintenance was performed on the MCC breaker during the Unit 2 2018 refueling outage. On January 29, 2019, the bristle was found and removed from the contactor, and the PORV block valve was returned to operable status.

This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) due to operation prohibited by Technical Specifications.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Surry Power Station, Unit 2	05000- 281	2019	- 001	- 00

NARRATIVE

1.0 DESCRIPTION OF THE EVENT

On December 27, 2018, during periodic testing, Operations attempted to close one Reactor Coolant System (RCS) Pressurizer PORV block valve (a motor operated valve) (MOV) [EIIS-AB-V]. After the block valve switch was manipulated in the closed direction, the control board light indication was not as expected; both the open and closed indications were extinguished. The valve was declared inoperable at 08:28 hours, resulting in an unplanned entry into a 72 hour Technical Specifications (TS) Limiting Condition for Operation (LCO). Troubleshooting identified that the Thermal Overload device (TOL) had tripped, and therefore, the valve had not closed as intended. The TOL was reset, and the trip condition could not be repeated. The block valve was cycled successfully several times, and MOV stroke time, amperage, and light indications were all satisfactory. The PORV block valve was declared operable at 14:18 hours, stopping the 72 hour LCO.

PORV block valve and motor control center breaker [EIIS-EC-BKR] testing conducted on January 29, 2019, revealed that, although the block valve stroked normally on that day, the valve close-control contactor [EIIS-AB-CNTR] was only passing current on two of the three phases. Subsequent inspection of the contactor internals identified a nylon brush bristle lodged within the "C" phase contact, which inhibited one phase of current to the MOV motor [EIIS-EC-MO]. The bristle was removed from the motor control contactor assembly, and the PORV block valve was returned to operable status. It was determined that the bristle was left in the contactor during maintenance performed during the 2018 Unit 2 refueling outage. It was conservatively determined that the valve had been inoperable for 56 days, from the time it was required to be operable (when the Reactor Coolant System average temperature exceeded 350 degrees F after refueling) on December 4, 2018, at 04:35 hours, until January 29, 2019, at 18:13 hours, when the bristle was removed from the motor control contactor, and the PORV block valve was returned to service.

The pressurizer PORV [EIIS-AB-RV] provides RCS isolation in series with the PORV block valve. On two occasions during the time the affected PORV block valve was inoperable, the in series PORV was disabled in the closed position for testing; this occurred on December 4, 2018, from 12:47 to 13:01 hours, and also on January 3, 2019, from 08:00 to 08:16 hours.

This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) due to operation prohibited by Technical Specifications.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The normally open PORV block valve provides isolation in the unlikely event of a leaking or partially open PORV. No leakage occurred during the period of PORV block valve inoperability. Other than the brief period the in series PORV was inoperable, mitigating safety system equipment was operable during the time that the PORV block valve was inoperable. Additionally, the block valve functioned as required in all instances other than the one time on December 27, 2018. Therefore, the risk significance and impact were very low, and there were no safety consequences as a result of this event.

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NARRATIVE

3.0 CAUSE OF THE EVENT

The cause of the PORV block valve motor thermal overcurrent trip was foreign material (a nylon brush bristle) lodged within the valve close-control contactor, which inhibited one phase of current to the MOV motor. Higher than normal amps experienced by the other two phases caused the TOL to trip, thereby de-energizing the motor control circuit. Although the foreign material exclusion close-out after maintenance was adequate for the MCC breaker assembly, a contributing cause to the event was an informal close-out review of the MCC breaker contactor subassembly. Also contributing to the event was the practice of using nylon bristle brushes for cleaning MCC breaker sub-components during the performance of breaker maintenance.

4.0 IMMEDIATE CORRECTIVE ACTIONS

The use of nylon bristle brushes for cleaning MCC breaker subcomponents was discontinued. A human performance review was conducted, and expectations were reinforced concerning foreign material exclusion during subcomponent close-out.

5.0 ADDITIONAL CORRECTIVE ACTIONS

A formal process for MCC breaker subcomponent foreign material exclusion will be implemented.

6.0 ACTIONS TO PREVENT RECURRENCE

Long term actions recommended by the Level of Effort Evaluation will be implemented by the corrective action program.

7.0 SIMILAR EVENTS

None

8.0 MANUFACTURER/MODEL NUMBER

Cutler-Hammer / NEMA Size 1 Motor Starter Contactor Series A1 (Citation) No. A50CNV0

9.0 ADDITIONAL INFORMATION

Unit 1 remained at full power and was not affected by the Unit 2 PORV block valve inoperability for the duration of time the Unit 2 RCS PORV block valve was inoperable. At no time while the Unit 2 PORV block valve was inoperable was either Unit 2 PORV called upon to actuate. Other than the in series pressurizer PORV inoperability as discussed in sections 1.0 and 2.0, there were no other inoperable structures, systems, or components that contributed to the incident.