

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

March 3, 2003

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

Serial No.: 03-121
SPS: TJN R1"
Docket No.: 50-280
License No.: DPR-32

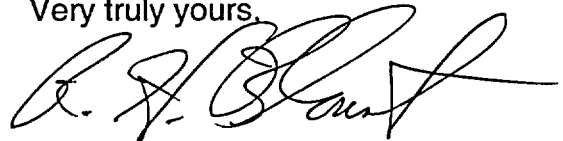
Dear Sirs:

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

Report No. 50-280/2002-001-00

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,



Richard H. Blount, Site Vice President
Surry Power Station

Enclosure

Commitments contained in this letter:

1. Evaluations were initiated to determine the causes of these events. The approved recommendations from these evaluations will be implemented.

JE22

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

Mr. R. A. Musser
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 information collection request 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@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 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.

FACILITY NAME (1) SURRY POWER STATION , Unit 1	DOCKET NUMBER (2) 05000 - 280	PAGE (3) 1 OF 4
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TITLE (4)
Inadvertent Auxiliary Feedwater Pumps Autostarts Due to Relay Failure

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCUMENT NUMBER
12	31	2002	2002	001	00	03	03	2003	FACILITY NAME	DOCUMENT NUMBER
										05000-
										05000-

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

LICENSEE CONTACT FOR THIS LER (12)

NAME Richard H. Blount, Site Vice President	TELEPHONE NUMBER (Include Area Code) (757) 365-2000
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	JC	3	W893	Y					

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)			X		NO		

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On December 31, 2002 at 09:18 hours with Unit 1 at 100% power, the Train "A" Motor Driven Auxiliary Feedwater Pump (MDAFWP) autostarted. The autostart resulted from an invalid signal due to a relay failure. This autostart is reportable under 10 CFR 50.73(a)(2)(iv). At the time of the event, the Steam Driven Auxiliary Feedwater Pump (SDAFWP) and the redundant Train "B" MDAFWP were operable, flow continued from the two normal Feedwater Pumps, and the cross-connect from the Unit 2 AFW system was operable. The Train "A" MDAFWP was secured, and replacement of the failed relay was initiated. While replacing the failed relay, two inadvertent autostarts of the SDAFWP occurred. In both cases a temporary jumper lost continuity due to intermittent contact by the jumper's alligator clip. The SDAFWP was secured following both inadvertent autostarts. After the second inadvertent autostart of the SDAFWP, the jumper was held in place while the failed relay was replaced, and the Train "A" MDAFWP was declared operable at 20:12 hours. The two autostarts of the SDAFWP are also reportable under 10 CFR 50.73(a)(2)(iv). During both SDAFWP autostarts events, flow continued from the two normal Feedwater Pumps, the function of the SDAFWP starting relay was not lost, the Train "B" MDAFWP was operable, and the cross-connect from the Unit 2 AFW system was operable.

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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 December 31, 2002 at 08:10 hours, a Reactor Protection System Logic monthly Periodic Test (PT) of Train "A" was commenced. During performance of the PT, utility Maintenance Technicians in the Relay Room discovered a failed relay and notified Operators at 09:18 hours. The relay was the Train "A" Motor Driven Auxiliary Feedwater Pump (MDAFWP) starting relay [EISS-JC, 3]. The Train "A" MDAFWP automatically started with reactor power at 100%. The Operators placed the Train "A" MDAFWP control switch in pull-to-lock, and started a 72-hour action statement in accordance with the Technical Specification (TS) requirement that two motor driven auxiliary feedwater pumps be operable. The Operators also started a 24-hour action statement in accordance with the TS requirement for a minimum of two operable AFW automatic actuation logic channels. The Train "A" MDAFWP automatic start is a reportable condition per 10 CFR 50.73(a)(2)(iv).

At 18:09 hours, as the failed relay was being removed from the relay cabinet, the Steam Driven Auxiliary Feedwater Pump (SDAFWP) automatically started. At 18:23 hours, Operations secured the SDAFWP and returned it to automatic. Relay replacement recommenced, and at 18:31 hours the SDAFWP automatically started for the second time. At 18:33 hours, Operators again secured the SDAFWP. The two automatic starts of the SDAFWP that occurred during relay replacement are reportable under 10 CFR 50.73(a)(2)(iv). In both SDAFWP automatic starts a temporary jumper lost continuity due to intermittent contact by the jumper's alligator clip. The jumper was held in place while the failed relay was replaced. At 19:52 hours, Maintenance Technicians replaced Train "A" MDAFWP starting relay and removed the jumper. At 20:10 hours, Maintenance Technicians completed post-maintenance testing requirements for Train "A" MDAFWP starting relay replacement, Operators stopped the 24-hour action statement, and the Reactor Protection System Logic monthly PT on Train "A" was recommenced. At 20:12 hours, Operators placed Train "A" MDAFWP in automatic, and stopped the 72-hour action statement. At 20:21 hours, the monthly PT on Train "A" was completed satisfactorily. The elapsed time from the discovery of the relay failure until the train was returned to service was 11 hours and 3 minutes.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

When the Train "A" MDAFWP starting relay failed, it de-energized to provide its safety function and a start signal was initiated to Train "A" MDAFWP. This actuation resulted from an invalid signal due to the relay failure. The actuation initiated auxiliary feed flow that was in addition to the normal feed flow from the two main Feedwater Pumps. The auxiliary feed flow was not required and was promptly terminated. The two main Feedwater pumps, the SDAFWP, the redundant "B" AFW train, and the cross-connect from Unit 2 AFW system remained operable. The last time the Train "A" MDAFWP starting relay was demonstrated to be capable of performing its safety function was when

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the relay cycled earlier in the PT performed on December 31, 2002.

During the Train "A" MDAFWP starting relay replacement, the SDAFWP automatically started twice due to a failure of a temporary jumper to keep the SDAFWP starting relay energized. The jumper had been placed at the correct electrical point, but intermittent contact by the jumper's alligator clip during the replacement caused the SDAFWP starting relay to de-energize and re-energize thus causing the pump starts. The automatic starts initiated auxiliary feed flow in addition to the normal feed flow from the two main Feedwater Pumps. The auxiliary feed flow was not required, and was terminated. The function of the SDAFWP starting relay was not lost. The two main Feedwater Pumps, the redundant "B" AFW train, and the cross-connect from Unit 2 AFW system remained operable.

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

As a result, the related safety function remained operable, and the health and safety of the public was not jeopardized.

3.0 CAUSE

The cause of Train "A" MDAFWP starting relay invalid actuation was end of life coil failure. The Train "A" MDAFWP starting relay was installed in 1985.

The cause of the two automatic starts during Train "A" MDAFWP starting relay replacement was intermittent contact by a temporary jumper's alligator clip. The jumper was placed at the correct electrical point but intermittent contact by the jumper's alligator clip during the replacement caused the SDAFWP starting relay to de-energize and re-energize thus causing the pump starts.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

As described above, for each inadvertent start, AFW flow was subsequently terminated, and related TS action statements were entered as required.

5.0 ADDITIONAL CORRECTIVE ACTIONS

The temporary jumper was held in place to prevent intermittent contact until the failed Train "A" MDAFWP starting relay was replaced and post maintenance testing was completed. Then the Reactor Protection System Logic monthly Periodic Test of Train "A" was completed satisfactorily, and the Train "A" AFW was declared operable at 20:21 hours.

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6.0 ACTIONS TO PREVENT RECURRENCE

Evaluations are in progress to determine the causes of these events. The approved recommendations from these evaluations will be implemented.

7.0 SIMILAR EVENTS

On December 14, 2002 while performing a different PT, a temporarily installed jumper alligator clip failed to establish continuity due to a high resistance connection. The cause of the high resistance was attributed to oxidation on the terminal screw to which the jumper's alligator clip was attached. The jumper's alligator clip was removed from the terminal point screw, the jumper's alligator clip was reconnected to the wire landed on the terminal point, and the PT was performed satisfactorily.

8.0 MANUFACTURER/MODEL NUMBER

The failed Train "A" MDAFWP starting relay was a Westinghouse model BFD-24S.

9.0 ADDITIONAL INFORMATION

None.