10CFR50.73

Virginia Electric and Power Company
Surry Power Station
P. O. Box 315
Surry, Virginia 23883

August 12, 1992

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Serial No.: 92-536
SPS:MDK
Docket No.: 50-281
License No.: DPR-37

Dear Sirs:

Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to Surry Power Station Unit 2.

REPORT NUMBER

50-281/92-009-00

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,

M. R. Kansler
Station Manager

Enclosure

cc: Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104). OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 2	0 5 0 0 0 2 8 1	1 OF 0 4

TITLE (4) Engineered Safety Feature (ESF) Actuation, Auxiliary Feedwater MOVs Receive an Open Signal.

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 NAMES	DOCKET NUMBER(S)
0 7	1 3	9 2	9 2	- 0 0 9	- 0 0	0 8	1 2	9 2		0 5 0 0 0
										DOCKET NUMBER(S) 0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	[X] 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
M. R. Kansler, Station Manager	AREA CODE 8 0 4 3 5 7 - 3 1 8 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	E A	B K R	A 5 7 6	Yes					

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 fifteen single-space typewritten lines) (16)

At 2328 hours on July 13, 1992, with Unit 1 at 100% power and Unit 2 at cold shutdown, an automatic Engineered Safety Feature (ESF) actuation signal occurred causing the Unit 2 auxiliary feedwater system motor operated valves to receive an open signal. The ESF signal was generated when the "2A" station service bus was deenergized removing electrical power from the "A" condensate pump, causing low suction pressure to the main feedwater pumps. The low suction pressure generated an ESF Signal to start the motor driven auxiliary feedwater pumps and open the auxiliary feedwater motor operated valves. A four-hour non emergency report was made to the NRC in accordance with 10 CFR 50.72.

At the time the auxiliary feedwater motor operated valves received an open signal, Unit 2 was in cold shutdown with the Residual Heat Removal (RHR) System in service. The auxiliary feedwater system was not required to be operable for the affected Unit. In responding to an event on non-safety related equipment in the turbine building, the operating team had identified the need to deenergize the "2A" station service bus and were aware that the auxiliary feedwater motor operated valves would open. When the "2A" bus was deenergized, the "A" condensate pump breaker tripped on undervoltage, a low pressure condition was sensed at the feedwater pumps and the auxiliary feedwater MOVs received an open signal as designed. Steam generator levels remained normal throughout the event with ample heat sink available. Core cooling was provided by the RHR system. At no time during the event was the auxiliary feedwater system required. Therefore, the health and safety of the public were not affected. This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv), for an automatic actuation of an ESF.

1.0 DESCRIPTION OF THE EVENT

On July 13, 1992 with Unit 1 at 100% power and Unit 2 at cold shutdown with the residual heat removal (RHR) system [EIIS-BP] in service, the Unit 2 auxiliary feedwater system (AFW) [EIIS-BA] motor operated valves (MOVs) received an open signal as the result of planned actions taken to correct the failure of a circuit breaker to trip on a non-safety related chiller. The turbine building operator was performing a routine swapover of the mechanical refrigeration units in the chilled water system [EIIS-KM]. The Unit 2 mechanical refrigeration unit continued to run when the local stop circuitry was activated. One result of the chiller malfunction was a leak in the service water supply line to the chiller unit. The service water leak was isolated. Attempts by a Senior Reactor Operator (SRO) to trip the chiller unit's breaker (25A9) located in a switchgear room were unsuccessful. The breaker could not be racked out due to the mechanical interlock preventing engagement of the racking tool when the breaker contacts are closed.

The SRO determined that the associated station service bus "2A" [EIIS-EA] feeder breaker (25A1) should be tripped and its control and trip fuses pulled. Bus loading was reviewed and it was identified by the SRO that the "A" condensate pump would trip, resulting in a loss of condensate recirculation flow and a low suction pressure signal to the main feedwater pumps. The SRO also identified that the low suction pressure to the main feedwater pumps generate a main feedwater pump trip signal and initiate an automatic start signal for the motor driven auxiliary feedwater pumps and an open signal to the auxiliary feedwater motor operated valves (MOVs).

Discussions between the SRO and the Unit 2 SRO confirmed that maintaining condensate flow was not necessary and could be secured under existing plant conditions. Both motor driven AFW pump control switches were in their normal pull-to-lock position for plant conditions. The SROs concurred that the resultant low suction pressure at the main feedwater pumps would result in an automatic open signal to the auxiliary feedwater MOVs, an Engineered Safety Feature (ESF) actuation [EIIS-JE].

When the "2A" station service bus and its associated loads were deenergized, the "A" condensate pump tripped as expected due to the undervoltage condition. The Auxiliary Feedwater MOVs received an automatic signal to open as expected, and benchboard indication as observed by the Unit 2 SRO, confirmed the MOV's opened. Actuation of an ESF system component is reportable in accordance with 10 CFR 50.73(a)(2)(iv).

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

This event resulted in no negative safety consequences or implications. At no time did actual plant conditions warrant an ESF actuation. Unit 2 was in the cold shutdown condition prior to the event occurring. The auxiliary feedwater system was not required to be operable for the affected unit. Auxiliary feedwater crosstie capability to and from the opposite unit remained available. The actions taken to open the main feeder breaker and deenergize the "2A" station service bus were planned and necessary to protect plant secondary equipment from damage and assure personnel safety was maintained. Core cooling was maintained through use of the RHR system. The service water system leak was processed by the turbine building sump pumps and isolated by operator action. The health and safety of the public were not affected.

3.0 CAUSE OF THE EVENT

This event resulted from a failure of the 25A9 breaker to trip. A worn toggle assembly caused binding on the mechanical linkage mechanism preventing the breaker from tripping open.

4.0 IMMEDIATE CORRECTIVE ACTIONS

The "2A" Station Service bus loading was reviewed by the SRO tasked with deenergizing the "2A" bus. The associated 480 volt buses (2A1 and 2A2) were crosstied to the remaining energized buses prior to deenergizing the "2A" bus. Breaker 25A1, the "2A" station service bus feeder breaker, was tripped open, racked out, and the control fuses were removed. The 25A7 breaker was tripped, preventing backfeed to the 2A bus through the 4160/480v transformer. The service water leak was isolated by securing the associated pump (2-SW-P-4B) and locally closing manual valves (1-SW-460 and 2-SW-414).

5.0 ADDITIONAL CORRECTIVE ACTIONS

Station Work Order 129506 repaired breaker 02-EPH-BKR-25A. The service water piping leak has been repaired.

6.0 ACTIONS TO PREVENT RECURRENCE

A Root Cause Evaluation Team (RCE) has been established to investigate this event. Recommendations will be implemented as appropriate.

7.0 SIMILAR EVENTS

The following Licensee Event Reports involved unplanned ESF actuations of auxiliary feedwater pumps and/or MOVs.

LER 89-022 (Unit 2), dated 7-3-89; LER 86-009 (Unit 1), dated 2-25-86; LER 86-010 (Unit 1), dated 2-27-86.

8.0 ADDITIONAL INFORMATION

MANUFACTURER/MODEL NUMBER:
Manufacturer: Asea Brown Boveri
Model Number: 5HK250
Serial Number: 44252C3-6-11C