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REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8904040282 DOC. DATE: 89/03/28 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania 05000388
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 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-003-00: on 890227, ESF actuations due to failed RPS M/G
 set motor/unit shutdown due to failed CIV. W/8 ltr.

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	PAGE (3) 1 OF 0 3
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TITLE (4) **ESF Actuations Due to Failed RPS M/G Set Motor/Unit Shutdown Due to Failed Containment Isolation Valve**

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 2	2 7	8 9	8 9	0 0 3	0 0	0 3	2 8	8 9			0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	20.402(b)		20.405(c)	<input checked="" type="checkbox"/>	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)		<input checked="" type="checkbox"/> 50.73(a)(2)(ii)		50.73(a)(2)(viii)(A)					
	20.405(a)(1)(iv)		50.73(a)(2)(iii)		50.73(a)(2)(viii)(B)					
20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)	
NAME P.P. Rusanowsky, Power Production Engineer	TELEPHONE NUMBER AREA CODE: 7 1 7 5 4 2 - 3 7 5 9

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	
X	J	C M P	G 0 8 0	Y							
X	K	M 2 0	A 4 9 9	N							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

At 0612 on 2-27-89, Unit 2, operating at 100% power, experienced unplanned Engineered Safety Feature actuations as a result of the loss of normal power to the "B" Reactor Protection System (RPS) bus. This interruption of power, per design, caused the Standby Gas Treatment System and Control Room Emergency Outside Air Supply System to initiate. All other equipment functioned per design with the exception of the Reactor Recirc Pump "A" Chilled Water Return Inboard Primary Containment Isolation Valve, HV-28792B2, which failed to close. Instead of exercising the option of continued operation at a reduced power level with the associated Outboard Chilled Water Isolation valve closed, the decision was made to shut the unit down and repair the Inboard valve. A controlled shutdown was initiated at 1410 and completed at 2126 on 2-27-89.

The cause of the power interruption to the "B" RPS bus was an internal short circuit to ground in the "B" RPS Motor/Generator Set Motor which caused its feeder breaker to trip. The motor was replaced and normal power to the bus was restored.

Inability of the air operated Chilled Water Isolation valve to close has been attributed to a failure of its operating air solenoid control valve, SV-28792B2. The solenoid valve was replaced and the Chilled Water Isolation valve, HV-28792B2, was tested satisfactorily. Fourteen of the other sixteen Air Operated Valves (AOV) inside Primary Containment that use the same type of solenoid valve were then stroke tested satisfactorily. The remaining two AOV's were verified to have been stroke tested satisfactorily by routine surveillance activities within three weeks of this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Unit 2 Susquehanna Steam Electric Station	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	- 0 0 3	- 0 0	0 2	OF 0 3	

TEXT (If more space is required, use additional NRC Form 366A's) (17)

DESCRIPTION OF EVENT

'At 0612 on 2-27-89, Unit 2, operating at 100% power, experienced unplanned Engineered Safety Feature (ESF) actuations as a result of the loss of normal power to the "B" Reactor Protection System (RPS) bus (EIIS Code: JC). This power interruption, per design, caused the Standby Gas Treatment System (EIIS Code: BH) and Control Room Emergency Outside Air Supply System (EIIS Code: BH) to initiate. All other equipment functioned per design with the exception of the Reactor Recirc Pump "A" Chilled Water Return Inboard Primary Containment Isolation Valve, HV-28792B2 (EIIS Code: KM), which failed to close. Although plant operation at reduced power* could have continued with the outboard isolation valve of the affected containment penetration deactivated in the closed position, the decision was made to shutdown the unit under plant Technical Specification Action Statement 3.6.3.a and repair the malfunctioning valve. A controlled shutdown was initiated at 1410 and completed at 2126 on 2-27-89.

*Securing the Outboard Chilled Water Return Isolation valve from the "A" Reactor Recirc Pump (EIIS Code: AD) would have necessitated securing the "A" Recirc pump and entering single loop operation with the "B" Recirc pump at a reduced speed.

CAUSE OF EVENT

The cause of the power interruption to the "B" RPS bus was an internal short circuit to ground in the "B" RPS Motor/Generator (M/G) Set motor stator windings which caused its feeder breaker to trip.

Inability of the air operated Chilled Water Isolation valve to close has been attributed to a failure of its operating air solenoid control valve, SV-28792B2.

CORRECTIVE ACTIONS

The unit was shutdown, the operating air solenoid control valve, SV-28792B2, was replaced and Chilled Water Isolation valve, HV-28792B2, was tested satisfactorily. Fourteen of the other sixteen Air Operated Valves (AOV) inside Primary Containment that use the same type of solenoid valve were then stroke tested satisfactorily. The remaining two AOV's were verified to have been stroke tested satisfactorily by routine surveillance activities within three weeks of this event. The "B" RPS M/G Set Motor was replaced and normal power to the RPS bus was restored.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73(a) (2) (iv) in that unplanned ESF actuations occurred due to loss of normal power to the "B" RPS bus, and 10CFR50.73(a) (2) (i) (A) in that a unit shutdown was completed under plant Technical Specification Action Statement 3.6.3.a to repair a malfunctioning containment isolation valve.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Per Section 6.0, Engineered Safety Features, of the plant's Final Safety Analysis Report, redundancy is provided in the electrical and mechanical design of the Containment Isolation System which ensures that no single failure can prevent the system from performing its intended function. Per the unit's Technical Specification 3.6.3 for Primary Containment Isolation Valves, unrestricted power operations can continue with an inoperable automatic isolation valve (e.g. inboard) provided that the affected penetration is isolated by deactivating another automatic isolation valve (e.g. outboard) in the closed position. Even though the Inboard Chilled Water Isolation valve was inoperable, based on the above information and the fact that the Outboard Chilled Water Isolation valve in that penetration functioned properly, no safety consequences or compromises to public health or safety occurred.

ADDITIONAL INFORMATION

Previous Similar Events: LER 84-036-00.



Pennsylvania Power & Light Company

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March 28, 1989

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 89-003-00
FILE R41-2
PLAS - 358

Docket No. 50-388
License No. NPF-22

Attached is Licensee Event Report 89-003-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that unplanned Engineered Safety Feature (ESF) actuations occurred due to loss of normal power to the "B" Reactor Protection System (RPS) bus, and 10CFR50.73(a)(2)(i)(A) in that, instead of continuing to operate at a reduced power level, the decision was made to shutdown the unit under a plant Technical Specification to repair a Primary Containment Isolation valve which failed to close per design during the loss of RPS power.


R. G. Byram

Superintendent of Plant - Susquehanna

PPR/mjm

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