

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM  
 REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8810060217 DOC. DATE: 88/09/29 NOTARIZED: NO DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387  
 AUTH. NAME: WEHRY, R.R. AUTHOR AFFILIATION: Pennsylvania Power & Light Co.  
 BYRAM, R.G. Pennsylvania Power & Light Co.  
 RECIP. NAME: . RECIPIENT AFFILIATION:

SUBJECT: LER 88-020-00: on 880901, unplanned ESF actuation when Zone III HVAC isolated. W/880929 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 2 cys Transcripts. 05000387

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	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/NAS	1 1	AEOD/DSP/ROAB	2 2
	AEOD/DSP/TPAB	1 1	ARM/DCTS/DAB	1 1
	DEDRO	1 1	NRR/DEST/ADS 7E	1 0
	NRR/DEST/CEB 8H	1 1	NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1	NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1	NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/QAB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RAB 10	1 1
	NRR/DREP/RPB 10	2 2	NRR/DRIS/SIB 9A	1 1
	NUDOCS-ABSTRACT	1 1	<del>REG FILE 02</del>	1 1
	RES TELFORD, J	1 1	<del>RES/DSIR DEPY</del>	1 1
	RES/DSIR/EIB	1 1	RGNI FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS, S	4 4	FORD BLDG HOY, A	1 1
	H ST LOBBY WARD	1 1	LPDR	2 2
	NRC PDR	1 1	NSIC HARRIS, J	1 1
	NSIC MAYS, G	1 1		

NOTES: 2 2

*J.W.*



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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 1	DOCKET NUMBER (2) 0   5   0   0   0   3   8   7	PAGE (3) 1   OF   0   3
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TITLE (4)  
Unplanned ESF Actuation When Zone III HVAC Isolated

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	9	0	1	8	8	8	8	8	SSES - Unit 2		0   5   0   0   0   3   8   8
0	9	0	1	8	8	8	8	8			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)					
	20.406(a)(1)(i)	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)					
	20.406(a)(1)(ii)	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
	20.406(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)						
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)						
20.406(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Richard R. Wehry - Power Production Engineer - Compliance	TELEPHONE NUMBER 7   1   7   5   4   2   -   3   6   6   4
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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		
B	B   H	C   D   M   P	I   2   0   6	No							

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH   DAY   YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On September 1, 1988, with both Unit 1 and Unit 2 operating at 100% power, the Division II, Zone III Heating, Ventilating and Air Conditioning system isolated and the Standby Gas Treatment and Control Room Emergency Outside Air Supply systems started. The cause of the unplanned ESF actuation was attributed to a cognitive personnel error when an operator, in the process of hanging a personnel protection work permit tag on an adjacent circuit breaker in a 120 VAC instrument power distribution panel, inadvertently caused a momentary loss of power to the isolation logic circuit. The loss of power occurred when the string on the permit tag caught on the circuit breaker switch for the Zone III isolation logic, causing it to cycle from its ON to OFF position and then back to its ON position. Plant response to the event was per design, except that the SGIS suction damper from the recirc plenum did not open, causing a loss of the required Secondary Containment Zone III differential pressure, until the isolation logic was reset. Secondary Containment was restored to its normal lineup and the SGIS suction damper was repaired. The incident was considered to be a unique and isolated occurrence, however, this event will be reviewed with Operations personnel to reemphasize the need to be careful when hanging/removing work permits in panels containing breakers/controls for other plant equipment.

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PDR ADDCK 05000387  
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   8	0   2   0	0   0	0   2	OF	0   3

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

DESCRIPTION OF EVENT

On September 1, 1988, with both Unit 1 and Unit 2 operating at 100% power, the Division II Zone III Heating, Ventilating and Air Conditioning system (HVAC; EIIS Code:VA) isolated and the Standby Gas Treatment (SGTS; EIIS Code:BH) and Control Room Emergency Outside Air Supply (CREOASS; EIIS Code:BH) systems started, due to a momentary loss of instrument AC power (EIIS Code:EF) to the isolation logic circuitry. Plant response to the event was per design, except that the SGTS suction damper from the recirc plenum did not open, resulting in a loss of the required Secondary Containment Zone III differential pressure, until the isolation could be reset.

CAUSE OF EVENT

The cause of the unplanned ESF actuation was attributed to a cognitive personnel error when an operator (utility; non-licensed) was in the process of hanging a personnel protection work permit tag on a circuit breaker in 120 VAC instrument power distribution panel 1Y226. The looped string on the permit tag inadvertently caught on an adjacent circuit breaker switch (power to the HVAC isolation logic), causing it to cycle from its ON to OFF position and back to its ON position. The momentary loss of power resulted in the Zone III HVAC isolation and SGTS and CREOASS initiations.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73(a) (2) (iv) in that an unplanned Engineered Safety Feature (ESF) actuation occurred when a Division II Zone III HVAC system isolation occurred and the SGTS and CREOASS started. Plant response to the event was per design, except that the SGTS suction damper from the recirc plenum did not open. This damper modulates to control flow from the Reactor Building HVAC recirc plenum to the SGTS. As a result of the damper failing to open, the required 0.25 inches of vacuum water gauge requirement for Secondary Containment Zone III could not be maintained (for approximately 10 to 15 minutes), until the isolation was reset, following verification of proper plant response and conditions, including a check of radiation levels. Limiting Condition for Operation 3.6.5.3 (7 day LCO) was entered on both units until the damper was repaired and the SGTS was declared operable, per SO-070-001, Monthly Operational Check of SGTS. There were no safety consequences or compromise to public health or safety as a result of this unplanned ESF actuation.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   8	-   0   2   0	-   0   0	0   3	OF	0   3

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

CORRECTIVE ACTIONS

Following verification of plant response and conditions, including a check of radiation levels, the Division II Zone III lockout relay was reset and Secondary Containment was restored to its normal lineup. An inspection of the isolation logic circuit breaker and its terminations was performed with no problems identified. Investigation into the failure of the SGTS suction damper determined that the damper's actuator was faulty. The actuator was replaced, SO-070-001, Monthly Operational Check of SGTS, was successfully performed and LCO 3.6.5.3 was cleared on both units. This incident, caused by the operator inadvertently catching the permit tag's looped string on an adjacent circuit breaker switch, was considered to be a unique and isolated occurrence, however, this event will be reviewed with Operations personnel to reemphasize the need to be careful when hanging/removing work permits in panels containing breakers/controls for other plant equipment.

ADDITIONAL INFORMATION

ESF system response to this incident yielded a failed component:  
Damper Actuator (ITT P/N NH93)

Licensee Event Reports 86-013-00, 86-031-00 and 87-016-00 identified previous HVAC Zone III unplanned isolations, caused by inadvertent loss of electrical power to portions of the isolation logic circuitry.



**Pennsylvania Power & Light Company**

Two North Ninth Street • Allentown, PA 18101 • 215/770-5151

September 29, 1988

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

SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 88-020-00  
FILE R41-2  
PLAS- 339

Docket No. 50-387  
License No. NPF-14

Attached is Licensee Event Report 88-020-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that an unplanned Engineered Safety Feature (ESF) actuation occurred when a Division II Zone III Heating, Ventilating and Air Conditioning system isolation occurred and the Standby Gas Treatment and Control Room Emergency Outside Air Supply systems started, following a momentary loss of electrical power to the isolation logic circuitry.

R.G. Byram  
Superintendent of Plant - Susquehanna

RRW/mjm

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