

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9005240214      DOC. DATE: 90/05/21      NOTARIZED: NO      DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv      05000387  
 AUTH. NAME      AUTHOR AFFILIATION  
 LLOYD, H.      Pennsylvania Power & Light Co.  
 STANLEY, H.G.      Pennsylvania Power & Light Co.  
 RECIPIENT AFFILIATION

SUBJECT: LER 90-011-00: on 900417, Zone III exhaust damper isolation -  
 ESF actuation.

W/9      ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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	THADANI, M	1	1			
INTERNAL:	ACNW	2	2	ACRS	2	2
	AEOD/DOA	1	1	AEOD/DSP/TPAB	1	1
	AEOD/ROAB/DSP	2	2	DEDRO	1	1
	NRR/DET/ECMB 9H	1	1	NRR/DET/EMEB9H3	1	1
	NRR/DLPQ/LHFB11	1	1	NRR/DLPQ/LPEB10	1	1
	NRR/DOEA/OEAB11	1	1	NRR/DREP/PRPB11	2	2
	NRR/DST/SELB 8D	1	1	NRR/DST/SICB 7E	1	1
	NRR/DST/SPLB8D1	1	1	NRR/DST/SRXB 8E	1	1
	<del>REG FILE</del> 02	1	1	RES/DSIR/EIB	1	1
	RGNI FILE 01	1	1			
EXTERNAL:	EG&G STUART, V.A	4	4	L ST LOBBY WARD	1	1
	LPDR	1	1	NRC PDR	1	1
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May 21, 1990

U.S. Nuclear Regulatory Commission  
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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 90-011-00  
FILE R41-2  
PLAS -425

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

Attached is Licensee Event Report 90-011-00. This report is being made pursuant to 10CFR50.73(a)(2)(iv), in that an unplanned ESF actuation occurred when a Reactor Building exhaust fan supply damper failed closed due to loss of its power supply. A defective solenoid valve caused the power supply fuse to blow. The solenoid valve was replaced.

  
H.G. Stanley  
Superintendent of Plant - Susquehanna

HL/mjm

cc: Mr. T. T. Martin  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. G. S. Barber  
Sr. Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 35  
Berwick, PA 18603-0035

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PDR ADCK 05000387  
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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) <b>Susquehanna Steam Electric Station - Unit 1</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 8 7 1</b>	PAGE (3) <b>1 OF 0 3</b>
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TITLE (4)  
**Zone III Exhaust Damper Isolation - ESF Actuation**

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 4	1 7	9 0	9 0	0 1 1	0 0	0 5	2 1	9 0		0 5 0 0 0

OPERATING MODE (9) <b>1</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) <b>1 0 0</b>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>H. Lloyd, Jr. - Power Production Engineer</b>	TELEPHONE NUMBER
	AREA CODE: <b>7 1 7</b> NUMBER: <b>5 4 2 1 - 3 9 1 7</b>

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

CAUSE	SYSTEM	COMPONENT	MANUFAC. TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC. TURER	REPORTABLE TO NPRDS
X	V A S I O L		C I O O 4	Y					

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 April 17, 1990, with Unit 1 operating at 100% power, a Reactor Building exhaust fan supply damper failed closed twice due to loss of power supply. Investigation revealed the cause of the event to be a failed solenoid valve which supplies air to maintain the supply damper open. The defective solenoid valve caused the power supply fuse to blow, which de-energized the solenoid valve and allowed the supply damper to fail closed. Initial repairs involved replacing the solenoid coil. This replacement coil failed after 1 1/2 hours of service. After the replacement coil failed, the entire solenoid valve was replaced. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that an unplanned ESF actuation occurred when the exhaust fan supply damper failed closed after its power supply fuse blew. This event was initially determined not to be reportable per 10CFR50.72 and 10CFR50.73. During a follow-up review several days later, the reportability was re-evaluated, and it was determined to be reportable as an unplanned ESF actuation. The appropriate ENS notification was made at that time. We consider this an extremely conservative interpretation of the reporting requirement in that the ESF actuation logic was in no way challenged either directly or inadvertently. We are re-evaluating our reporting practices in this area. The subject damper is used for secondary containment isolation in the event of an accident and would have performed its safety related function had it been needed.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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)  Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0   5   0   0   0   3   8   7   9   0   -   0   1   1   -   0   0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0   2	OF	0   3

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

DESCRIPTION OF EVENT

On April 17, 1990, with Unit 1 operating in Condition 1 at 100% power, a Reactor Building exhaust fan supply damper failed closed twice due to a loss of its power supply, and a subsequent trip of the exhaust fan occurred. The fan trip occurred per design as a result of the low flow condition. The appropriate Action Statement from the Limiting Condition for Operation was entered and the Standby Gas Treatment System was placed in operation to re-establish secondary containment. Work activities were initiated to perform necessary repairs. Following completion of repairs, the fan supply damper was declared OPERABLE, the LCO action statement was exited and the Standby Gas Treatment system was placed in Standby.

CAUSE OF EVENT

Investigation revealed the cause of the event to be a defective solenoid valve which supplies air to maintain the supply damper open. The defective solenoid valve caused the power supply fuse to blow, which de-energized the solenoid valve and allowed the supply damper to fail closed as per design. Initially, the solenoid coil and the fuse were replaced but after 1 1/2 hours in service, the replacement coil failed and the new fuse blew. It was decided at this time to replace the entire solenoid valve since no other electrical problems were found in the circuit. The failure of the original coil is attributed to random failure. The failure of the replacement coil is attributed to a defective coil.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a) (2) (iv) in that an unplanned ESF actuation occurred when the exhaust fan supply damper failed closed when its power supply fuse blew. No ESF logic was involved thus the ESF logic was not challenged. Instead, a fuse blew interrupting power to the dampers' solenoid, causing the damper to cycle closed. Nevertheless, power fuse failures which result in cycling an ESF component, have, in the past, been reported by PP&L as ESF actuations. We consider this an extremely conservative interpretation in that the ESF actuation logic was in no way challenged either directly or inadvertently. We are re-evaluating our reporting practices in this area. This event did not create a degradation in our ability to protect the health and safety of the public and or plant personnel. The subject damper is used for secondary containment isolation in the event of an accident. Failing closed placed it in the position required for it to have performed this function had it been needed. This event would not have been more significant at any other operating condition.

In accordance with guidance provided in NUREG 1022, item 14.1 & 14.2, the required submission date for this report was determined to be 5/23/90. The event was determined to be reportable on 04/23/90 and the required ENS notification was completed at that time.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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)  Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0   5   0   0   0   3   8   7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9   0	-   0   1   1	-   0   0	0   3	OF	0   3

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

CORRECTIVE ACTIONS

Initial repairs involved replacing the solenoid coil. This replacement coil failed after 1 1/2 hours of service. Following this failure, the electrical circuit was thoroughly checked and no problems were found. A new replacement solenoid valve was installed after the second failure. No further corrective actions are planned at this time.

The re-evaluation of our reporting practices mentioned in the Reportability/Analysis section is in progress and appropriate training and documentation will take place following its completion. In addition, these guidelines will be reflected in appropriate plant procedures/instructions.

ADDITIONAL INFORMATION

Failed Component Identification:

Valve: Solenoid  
Model: SV31S  
Manufacturer: Circle Seal Solenoid, Inc.

Previous Similar Events: None