

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8704220254 DOC. DATE: 87/04/20 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
 AUTH. NAME AUTHOR AFFILIATION
 HIRT, J. A. Pennsylvania Power & Light Co.
 BYRAM, R. G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-003-00: on 870320, five containment atmosphere control inboard isolation valves closed due to fuse blowing in control power circuitry. Caused by shorted rectifier to one valve. Personnel isolated fault & replaced fuse. W/870420 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: 1cy NMSS/FCAF/PM. LPDR 2cys Transcripts. 05000388

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	PD1-2 LA	1	1	PD1-2 PD	1	1			
	THADANI, M	1	1						
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	1	1			
	AEOD/DOA	1	1	AEOD/DSP/ROAB	2	2			
	AEOD/DSP/TAPB	1	1	AEOD/DSP/TPAB	1	1			
	NRR/ADT	1	1	NRR/DEST/ADE	1	0			
	NRR/DEST/ADS	1	0	NRR/DEST/CEB	1	1			
	NRR/DEST/ELB	1	1	NRR/DEST/ICSB	1	1			
	NRR/DEST/MEB	1	1	NRR/DEST/MTB	1	1			
	NRR/DEST/PSB	1	1	NRR/DEST/RSB	1	1			
	NRR/DEST/SQB	1	1	NRR/DLPQ/HFB	1	1			
	NRR/DLPQ/QAB	1	1	NRR/DOEA/EAB	1	1			
	NRR/DREP/EPB	1	1	NRR/DREP/RAB	1	1			
	NRR/DREP/RPB	2	2	NRR/PMAS/ILRB	1	1			
	NRR/PMAS/PTSB	1	1	REC FILE 02	1	1			
	RES SPEIS, T	1	1	RGN1 FILE 01	1	1			
EXTERNAL:	EG&G GROH, M	5	5	H ST LOBBY WARD	1	1			
	LPDR	2	2	NRC PDR	1	1			
	NSIC HARRIS, J	1	1	NSIC MAYS, G	1	1			

NOTES: 3 3

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit Two	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	PAGE (3) 1 OF 0 4
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TITLE (4)
Five Containment Isolation Valves Close Due to a Blown Fuse

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 3	2 0	8 7	8 7	0 0 3	0 0	0 4	2 0	8 7			0 5 0 0 0 0																																									
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 1</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 1 0 0</td> <td>20.402(b)</td> <td>20.405(c)</td> <td><input checked="" type="checkbox"/></td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.405(a)(1)(i)</td> <td>50.38(c)(1)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>50.38(c)(2)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(vii)</td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.405(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.405(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td><input type="checkbox"/></td> <td>50.73(a)(2)(ix)</td> <td></td> </tr> </table>												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)	50.38(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)	20.405(a)(1)(ii)	50.38(c)(2)	<input type="checkbox"/>	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)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	20.405(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	20.405(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)	
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LICENSEE CONTACT FOR THIS LER (12)

NAME Jeffrey A. Hirt, Engineer Level I	TELEPHONE NUMBER 7 1 7 5 4 2 - 3 9 1 7
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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	I K	RECT	T 0 2 0	YES					

SUPPLEMENTAL REPORT EXPECTED (14)

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 March 20, 1987, at approximately 1230 hours, five Containment Atmosphere Control inboard isolation valves closed due to a fuse blowing in the control power circuitry. The closure of these valves affected one division of the Post Accident Sampling System, H₂O₂ Analyzer and the Containment Radiation Monitoring System. (The second division was not affected and could have been used if conditions warranted). The blown fuse interrupted power to the valves' solenoids causing them to close to their fail-safe position. Prior to, and throughout, the event the unit continued to operate at or near 100% rated thermal power.

Electrical Maintenance personnel determined the cause of the blown fuse was a shorted rectifier to one of the valves. The rectifier is an accessory to the solenoid valve for AC service. It provides full wave rectification to the DC controller.

By 2000 hours, Electrical Maintenance personnel had isolated the electrical fault and replaced the fuse. This allowed Operations personnel to open four of the isolation valves. Electrical Maintenance replaced the rectifier at 1400 hours on March 21, 1987. Following replacement, the fifth isolation valve was reopened.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 7	0 0 3	0 0	0 2	OF	0 4

TEXT (If more space is required, use additional NRC Form 368A's) (17)

EVENT DESCRIPTION

On March 20, 1987, at approximately 1230 hours, five Loop "A" Containment Atmosphere Control (EIIS Code: IK) inboard isolation valves closed due to a fuse blowing in the control power circuitry. The valves which closed are identified as:

<u>Valve ID#</u>	<u>FUNCTION</u>
SV-25740A	UPPER DRYWELL SAMPLE
SV-25750A	LOWER DRYWELL SAMPLE
SV-25776A	DRYWELL RETURN
SV-25736A	SUPPRESSION CHAMBER RETURN
SV-25780A	SUPPRESSION CHAMBER SAMPLE

Figure 1 shows the relationship between these valves and the Post Accident Sampling Station (EIIS Code: IP), H₂O₂ Analyzer (EIIS Code: IK) and the Containment Radiation Monitoring System (EIIS Code: IL). The blown fuse interrupted power to the valves' solenoids causing them to close to their fail-safe position. Prior to, and throughout, the event the unit continued to operate at or near 100% rated thermal power.

CAUSE/CORRECTIVE ACTION

Electrical Maintenance personnel determined the cause of the blown fuse was a shorted rectifier (IEEE Code: RECT) (Manufacturer: Target Rock) to SV-25780A. The rectifier is an accessory to the solenoid valve for AC service. It provides full wave rectification to the DC controller. Electrical Maintenance personnel isolated the electrical fault in SV-25780A and replaced the fuse by 2000 hours on March 20, 1987. This allowed Operations personnel to reopen all of the solenoid valves except SV-25780A. On March 21, 1987, Maintenance personnel replaced the rectifier. After the rectifier was replaced SV-25780A opened.

The failure of the rectifier is considered to be a random and isolated occurrence. Maintenance personnel reviewed the repair history of the solenoid which operates the isolation valve and did not find any past failures of the rectifier.

SAFETY CONCERNS

This event did not pose any significant safety consequences. The isolation valves are designed to close following a design basis accident. Since the valves were in the closed position, had an accident occurred, the valves would not have failed to fulfill their design function due the failure of the rectifier.

These valves are also designed to be opened post-accident for sampling purposes. With the fuse blown and the rectifier shorted it would not have been possible to open these valves remotely. However, the redundant division, unaffected by this event, would have been available for post accident sampling had an accident occurred.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Susquehanna Steam Electric Station Unit Two	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8 8 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		87	003	00	03	OF	04

TEXT (If more space is required, use additional NRC Form 358A's) (17)

REPORTABILITY

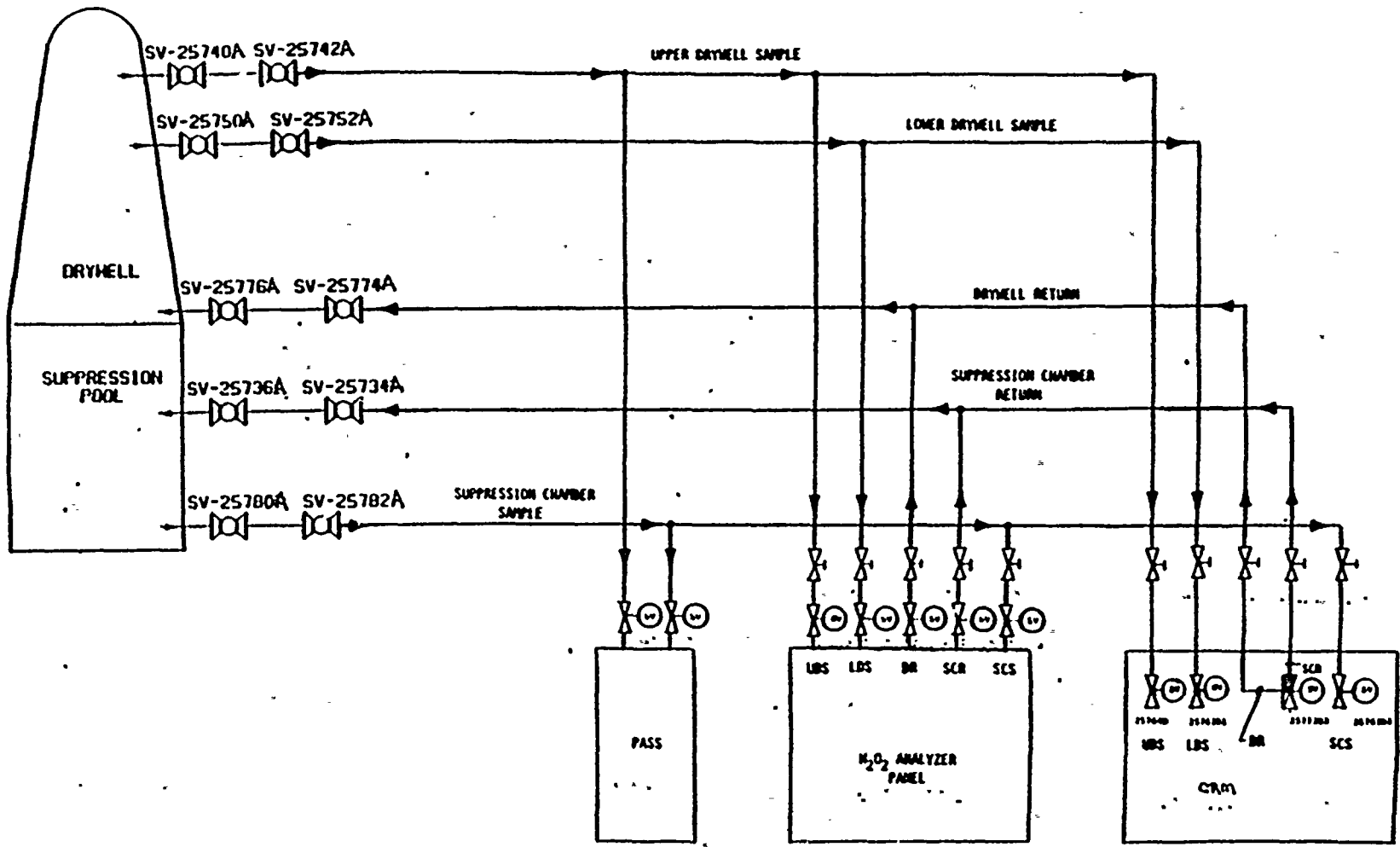
This event is reportable to the Commission per 10CFR50.73(a) (2) (iv) in that five containment isolation valves closed. This is considered an inadvertant actuation of an Engineered Safety Feature (ESF) system.

The assessment performed to determine reportability per 10CFR50.72 did not view this event as an actuation of an ESF system. This determination was based on NRC Guidance concerning ESF actuations listed on page 13 of NUREG 1022. This guidance states:

"Actuation of multichannel ESF Actuation Systems is defined as actuation of enough channels to complete the minimum actuation logic (i.e., activation of sufficient channels to cause activation of the ESF Actuation System). Therefore, single channel actuations, whether caused by failures or otherwise, are not reportable if they do not complete the minimum actuation logic."

The blown fuse did not cause any isolation logic to actuate. There were no control room alarms which annunciated the closure due to an isolation, and none should have occurred. Instead, a fuse blew interrupting power to the valves' solenoids. Since no isolation logic actuated this event was deemed not to be reportable per 10CFR50.72. As such, no notification was made via the Emergency Notification System.

Guidance regarding the revised reportability interpretation will be provided to the appropriate plant personnel.





Pennsylvania Power & Light Company

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

April 20, 1987

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 87-003-00
FILE R41-2
PLAS - 245

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

Attached is Licensee Event Report 87-003-00. This event was determined reportable per 10CFR50.73(a) (2) (iv), in that five containment isolation valves closed due to a fuse blowing.


R. G. Byram
Superintendent of Plant-Susquehanna

JAH/cmw

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IE22
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