

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8708130205 DOC. DATE: 87/08/10 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
 AUTH. NAME AUTHOR AFFILIATION
 WALLEN, C. L. Pennsylvania Power & Light Co.
 BYRAM, R. G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-023-00: on 870706, reactor manually shut down when solenoid valve in vacume breaker failed during testing. Caused by defective solenoid valve coil. Coil replaced & unit returned to svc. W/870810 ltr.

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

NOTES: 1cy NMSS/FCAF/PM. LPDR 2cys Transcripts. 05000387

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD1-2 LA	1 1	PD1-2 PD	1 1
	THADANI, M	1 1		
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	DEDRO	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/SGB	1 1	NRR/DLPQ/HFB	1 1
	NRR/DLPQ/QAB	1 1	NRR/DOEA/EAB	1 1
	NRR/DREP/RAB	1 1	NRR/DREP/RPB	2 2
	NRR/PMAS/ILRB	1 1	<u>REG FILE</u> 02	1 1
	RES DEPY GI	1 1	RES TELFORD, J	1 1
	RES/DE/EIB	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		

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)
Inoperable Primary Containment Vacuum Breaker Solenoid 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 7	0 6	8 7	8 7	0 2 3	0 0	0 8	1 0	8 7			0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9) 1

POWER LEVEL (10) 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	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)(vi)	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)(vii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME C. L. Wallen - Compliance Evaluator	TELEPHONE NUMBER
	AREA CODE: 7 1 7 5 4 2 3 2 4 2

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 F	O P S V	C 3 3 9	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

ABSTRACT

On July 9, 1987 at 0103 hours Unit 1 was manually shut down from 29% power as required by Technical Specification 3.6.4 action statement. This was caused when a solenoid valve in the test circuitry of vacuum breaker PSV15704E1 failed during monthly surveillance testing. The vacuum breaker itself was confirmed closed and subsequent investigation determined the vacuum breaker remained operable, except in the test mode, and would have performed its design function under accident conditions. The shutdown was commenced at 2000 hours on 7-8-87 and completed at 0103 hours on 7-9-87.

It was determined that a solenoid valve coil which is utilized in the test circuit of the vacuum breaker was defective preventing it from stroking under test. The solenoid coil was replaced on 7-10-87 and the unit subsequently returned to service.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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

DESCRIPTION OF EVENT

On July 9, 1987 at 0103 hours Unit 1 was manually shut down from 29% core thermal power as required by Technical Specification 3.6.4 action statement. This Technical Specification requires "with 1 or more vacuum breakers in 1 pair of suppression chamber - drywell vacuum breakers inoperable for opening but known to be closed, restore the inoperable pair of vacuum brakers to operable status within 72 hours or be in at least hot shutdown within the next 12 hours and cold shutdown within the following 24 hours". Vacuum Breaker PSV-15704E-1 was confirmed closed through receipt of amber indication and lack of dual indication or receipt of the containment vacuum breaker division 1 alarm.

CAUSE OF EVENT

The event was caused by a solenoid valve (IEEE Standard Function Identifier: PSV) failure to operate vacuum breaker PSV-15704E-1 (EIIS Code:BF) during performance of monthly suppression chamber drywell vacuum breaker valve check. It was surmised from the initial investigation that either the test circuit solenoid valve was mechanically sticking, or that mechanical binding of the vacuum breaker itself was present. This required declaring the vacuum breaker inoperable. Subsequent investigation discovered the E1 Solenoid valve's coil to be burned and open. This failure would not allow instrument gas (EIIS Code: LK) to be ported to the test cylinder, thus the valve would not stroke upon receipt of a test signal. There was no evidence the vacuum breaker valve itself was inoperable other than in the test mode.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73 (a) (2) (i) (A) due to the completion of a nuclear plant shutdown as required by the Technical Specifications.

Technical Specification 3.6.4 requires that with 1 or more vacuum breakers in one pair being inoperable for opening but known to be closed, restore the inoperable pair to service within 72 hours or at least hot shutdown within the next 12 hours and cold shutdown within the following 24 hours. Vacuum breaker PSV-15704E1 was confirmed closed through receipt of amber indication and lack of dual indication or receipt of the containment vacuum breaker Division 1 alarm. Investigation determined the solenoid valve's coil was defective and would not allow the vacuum breaker to stroke under test. The vacuum breaker itself was found to be operable in other than the test mode and would perform its design function under accident conditions.

CORRECTIVE ACTION

Vacuum breaker PSV-15704E1 was declared inoperable at 0140 hours on 7-6-87 when a Limiting Condition for Operation (L.C.O.) was entered per 3.6.4 of Technical Specifications. Subsequent investigation discovered that the solenoid valve which is used in the test circuit of the vacuum breaker was found to have a burned, open coil. The solenoid coil was subsequently replaced and the vacuum breaker stroked satisfactorily.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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

Shutdown commenced at 2000 hours on 7-8-87 and completed at 0103 hours on 7-9-87 when the Reactor Mode Switch was taken to shutdown mode from approximately 29% core thermal power.

ADDITIONAL INFORMATION

Failed component indentifier: PSV Coil, Manufacturer Circle Seal.

A review of past work history disclosed that one similar failure occurred October 16, 1982 in which a Circle Seal solenoid valve on the same vacuum breaker was found to have an open coil. The unit was in shutdown at the time for a pre-turbine roll outage as part of the Startup Test Program. The defective coil was replaced at that time.

In addition, a Circle Seal solenoid experienced a failure on Unit 2, on April 11, 1987. This failure was an electrical fault (short) which caused a blown fuse during testing attempts. The Unit scrambled on an unrelated signal prior to a shutdown forced by the inability to test the vacuum breaker. The solenoid was replaced prior to the Unit's restart.





Pennsylvania Power & Light Company

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August 10, 1987

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 87-023-00
FILE R41-2
PLAS - 274

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

Attached is Licensee Event Report 87-023-00. This event was determined reportable per 10CFR50.73 (a) (2) (i) in that Unit 1 was manually shut down as required by Technical Specification 3.6.4 when a solenoid valve in the test circuitry of one vacuum breaker failed during monthly surveillance testing.


R. G. Byram
Superintendent of Plant - Susquehanna

CLW/cmw

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