

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8910160319      DOC. DATE: 89/10/06      NOTARIZED: NO      DOCKET #  
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv      05000388  
 AUTH. NAME      AUTHOR AFFILIATION  
 RUSANOWSKY, P.P.      Pennsylvania Power & Light Co.  
 BYRAM, R.C.      Pennsylvania Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 89-008-01: on 890910, drywell purge air supply outboard  
 isolation valve fails closed during drywell deinerting.  
W/8      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. 05000388

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	ACRS WYLIE	1 1	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
	DEDRO	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/PEB 10	1 1
	NRR/DOEA/EAB 11	1 1	NRR/DREP/RPB 10	2 2
	NUDOCS-ABSTRACT	1 1	<del>REG FILE 02</del>	1 1
	RES/DSIR/EIB	1 1	RGNI FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS, S	4 4	L ST LOBBY WARD	1 1
	LPDR	1 1	NRC PDR	1 1
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Pennsylvania Power & Light Company

October 6, 1989

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

SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 89-008-00  
FILE R41-2  
PLAS - 384

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

Attached is Licensee Event Report 89-008-00. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that the unanticipated isolations of the Drywell Purge Air Supply Outboard Isolation Valve during drywell de-inerting activities constituted unplanned actuations of an Engineered Safety Feature.

  
R. G. Byram  
Superintendent of Plant - Susquehanna

PPR/mjm

cc: Mr. W.T. Russell  
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

IE22  
/1

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) 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) Drywell Purge Air Supply Outboard Isolation Valve Fails Closed During Drywell  
Deinerting Activities

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)																																																																
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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
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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	B   B	S   O   L	C 3 3 9	Y					
X	B   B	F   U	B 5 6 9	N					

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)

At 1500 on 9/10/89 and 0600 on 9/11/89, during a scheduled shutdown for the Unit 2 third refueling outage, the Drywell Purge Air Supply Outboard Isolation Valve, HV-25723, automatically closed. The closures were caused by a blown fuse in the valve's control circuit and an open coil in the valve's air actuator solenoid control valve, respectively. The solenoid valve coil failed once during valve functional testing after the blown fuse was replaced and again after the solenoid valve was replaced. The cause of these failures has not been determined. Further investigations will be conducted. For both occurrences, the affected primary containment penetration was isolated by deactivating the redundant (inboard) isolation valve in the closed position. Administrative controls are in place which will ensure that HV-25723 is reworked and demonstrated to be OPERABLE prior to startup. This event was determined to be reportable under 10CFR50.73(a)(2)(iv) in that the unanticipated closures of HV-25723 (a primary containment isolation valve) constituted unplanned actuations of an Engineered Safety Feature. Since, on both occurrences, HV-25723 actuated, per design, to the safe, closed position, there were no safety consequences or compromises to the health or safety of the public.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 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 2 Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0 5 0 0 0 3 8 8 8 9	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 9	- 0 0 8	- 0 0	0 2	OF	0 3

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

EVENT

On 9/9/89 a scheduled shutdown of Unit 2 was commenced in support of its third refueling and inspection outage. At 0417 on 9/10/89, the Reactor Mode Switch was taken from "RUN" (Condition 1) to "STARTUP" (Condition 2). At 1415 on 9/10/89 an air purge was commenced to de-inert the primary containment drywell of nitrogen in preparation for containment entry in support of the outage. At this time, the Containment Atmosphere Control System (EIIIS Code: BB) Drywell Purge Air Supply Outboard Isolation Valve, HV-25723, which is normally closed, was opened as part of the purge, valve line-up. At 1500 on 9/10/89 position indication for HV-25723 was lost and drywell pressure was noted to have decreased. The Technical Specification (Tech Spec) Limiting Condition for Operation (LCO) for Primary Containment Isolation System (PCIS; EIIIS Code: JM) Valves, Tech Spec 3.6.3, was entered at this time. Purge valve HV-27523 was confirmed to have closed. [At 1542 on 9/10/89 the Reactor Mode Switch was placed in "SHUTDOWN" (Condition 3) per the refueling outage shutdown schedule.] At 1845 on 9/10/89 the primary containment penetration (X-25) affected by the inoperability of HV-25723 was isolated per Tech Spec LCO Action Statement 3.6.3.a by deactivating the redundant (inboard) PCIS valve in the closed position.

At approximately 2145 on 9/10/89 the Shift Supervisor (utility, licensed) and Shift Technical Advisor (utility, non-licensed) realized that the unanticipated closure of HV-25723 constituted an unplanned actuation of an Engineered Safety Feature (ESF) and hence was reportable under 10CFR50.72(b)(2)(ii). At 2152 on 9/10/89 the event was reported via the Emergency Notification System (ENS). The NRC contact was informed that the ENS phone call was approximately three hours late. Also, the site Senior Resident Inspector was notified of the event and the delay in reporting at this time.

Investigations revealed that the control power fuse (BUSSMANN MFG,; P/N-KTK-5) to SV-25723 (solenoid control valve mounted on the air actuator for HV-25723) had blown which, per design, had caused HV-25723 to actuate to the closed position. [At 0245 on 9/11/89 a reactor cooldown was commenced per the refueling outage shutdown schedule.] After it was determined that the circuit had no electrical grounds and that the solenoid valve coil had not shorted out or opened, the fuse was replaced and valve position indication was restored. Subsequent to an unsuccessful attempt to reopen HV-25723, the SV-25723 coil was rechecked and found to be open. The control power fuse replaced earlier and valve position indication for HV-25723 were still functioning properly. Solenoid valve SV-25723 (Circle Seal Controls Co.; P/N-SV315-9101-3 Rev. D) was then replaced. At 0325 on 9/11/89, after the required post-maintenance testing was performed satisfactorily, HV-25723 was declared OPERABLE and the LCO was cleared.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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

At 0400 on 9/11/89 the primary containment drywell purge was re-established (again, with HV-25723 open as part of the required valve line-up). At 0600 on 9/11/89, during a routine panel walkdown by the control room operator (utility, licensed), full closed indication for HV-25723 was observed. Attempts to reopen the valve were unsuccessful. Tech Spec LCO 3.6.3 was re-entered at this time. At 0755 on 9/11/89, the required ENS call was made to report the reoccurrence. At 0845 on 9/11/89 primary containment penetration X-25 was again isolated by de-activating the redundant (inboard) PCIS valve in the closed position. At 1217 on 9/11/89, the reactor coolant temperature had been decreased to less than 200°F which defines entry into Condition 4, Cold Shutdown, in which the PCIS valves are not required to be OPERABLE. At 1410 on 9/11/89, Tech Spec LCO 3.6.3 was cleared (the work authorization document issued at the time of the valve failure on 9/11/89 had established administrative controls which will ensure that HV-25723 is reworked, demonstrated to be functioning properly, and declared OPERABLE prior to startup).

CAUSE

Upon troubleshooting SV-25723 it was discovered that its coil had opened again which caused HV-25723, per design, to actuate to the closed position. The cause(s) of the blown fuse and coil failures has not been determined.

CORRECTIVE ACTIONS

Further investigations into the cause(s) of the failures will be conducted. Purge valve HV-25723 will be restored to a fully OPERABLE status prior to startup.

All licensed operators are being briefed on the subjects of ESF actuation recognition and specific actions required to be taken when one is determined or suspected to have occurred. This activity is scheduled to be completed by mid October 1989. Appropriate enhancements to the formal Operator Training Programs will be made.

REPORTABILITY/ANALYSIS

This event was determined to be reportable under 10CFR50.73(a) (2) (iv) in that the unanticipated closures of the Drywell Purge Air Supply Outboard Isolation Valve constituted unplanned ESF actuations. Since, on both occurrences, HV-25723 actuated, per design, to the safe, closed position, there were no safety consequences or compromises to the health or safety of the public nor would there have been had the unit been operating at power.

ADDITIONAL INFORMATION

Previous similar events: None