

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

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ACCESSION NBR: 8804040217 DOC. DATE: 88/03/30 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387
 AUTH. NAME AUTHOR AFFILIATION
 RYDER, T.S. Pennsylvania Power & Light Co.
 BYRAM, R.G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-005-00: on 880306, unexpected closure of vent & purge
 containment isolation valves during surveillance testing. W/8 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

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	
	PD1-2 LA THADANI, M	1 1 1 1	PD1-2 PD	1 1	A
INTERNAL:	ACRS MICHELSON	1 1	ACRS MOELLER	2 2	D
	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1	D
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1	S
	ARM/DCTS/DAB	1 1	DEDRO	1 1	
	NRR/DEST/ADS7E4	1 0	NRR/DEST/CEB 8H	1 1	
	NRR/DEST/ESB 8D	1 1	NRR/DEST/ICSB7A	1 1	
	NRR/DEST/MEB9H3	1 1	NRR/DEST/MTB 9H	1 1	
	NRR/DEST/PSB8D1	1 1	NRR/DEST/RSB 8E	1 1	
	NRR/DEST/SGB 8D	1 1	NRR/DLPQ/HFB10D	1 1	
	NRR/DLPQ/QAB10A	1 1	NRR/DOEA/EAB11E	1 1	
	NRR/DREP/RAB10A	1 1	NRR/DREP/RPB10A	2 2	
	NRR/DRIS/SIB9A1	1 1	NRR/PMAS/ILRB12	1 1	
	REG FILE 02	1 1	RES TELFORD, J	1 1	
	RES/DE/EIB	1 1	RES/DRPS DIR	1 1	
	RGN1 FILE 01	1 1			
EXTERNAL:	EG&G GROH, M	4 4	FORD BLDG HOY, A	1 1	R
	H ST LOBBY WARD	1 1	LPDR	2 2	I
	NRC PDR	1 1	NSIC HARRIS, J	1 1	D
	NSIC MAYS, G	1 1			S
NOTES:		2 2			/

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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)
Unexpected Closure of Vent and Purge Containment Isolation Valves During Surv. Testing

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	0 6	8 8	8 8	0 0 5	0 0 0	0 3	3 0	8 8			0 5 0 0 0

OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 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)(vi)	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)(vii)(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)						

LICENSEE CONTACT FOR THIS LER (12)	
NAME T.S. Ryder - Power Production Engineer	TELEPHONE NUMBER AREA CODE: 7 1 7 5 4 2 - 3 2 3 5

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		

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO							

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

On March 6, 1988 with Unit 1 in condition 4 at 0% power, an Engineered Safety Feature (ESF) actuation occurred when three of the four vent and purge exhaust valves to the Standby Gas Treatment System (SBGT) automatically closed and the fourth valve failed to close when the high radiation logic was triggered as part of a surveillance test. A containment purge was underway on Unit 1 and I&C Technicians were performing surveillance SI-079-217, Monthly Functional Test of SBGT Exhaust Vent Rad Monitors. The test was successfully completed and all acceptance criteria were met prior to discovery of the valve closures. This event was determined to be reportable per 10CFR50.73 (a) (2) (iv), in that the closure of the three vent and purge containment isolation valves constituted an unplanned ESF actuation. Adequate protection against an outside release of radioactive material was ensured during the event since the outboard containment isolation valves were operable and would have performed their containment isolation function in the event of a high radiation condition. Most probable cause appears to be that a jumper installed as part of the surveillance being performed failed to make proper contact thus allowing unintentional actuation of the containment isolation valve logic. Root cause of why HV-15703 failed to close along with the other three valves could not be determined. Functional testing of the containment isolation valve logic, relay checks, contacts and wiring checks all proved negative in uncovering any problems. The testing satisfactorily demonstrated proper operation of the valve logic in that the vent and purge exhaust containment isolation valves automatically closed as per design when the logic was subjected to a radiation trip input signal.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		8 8	— 0 0 5 —	0 0	0 2	OF 0 3	

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

DESCRIPTION OF EVENT

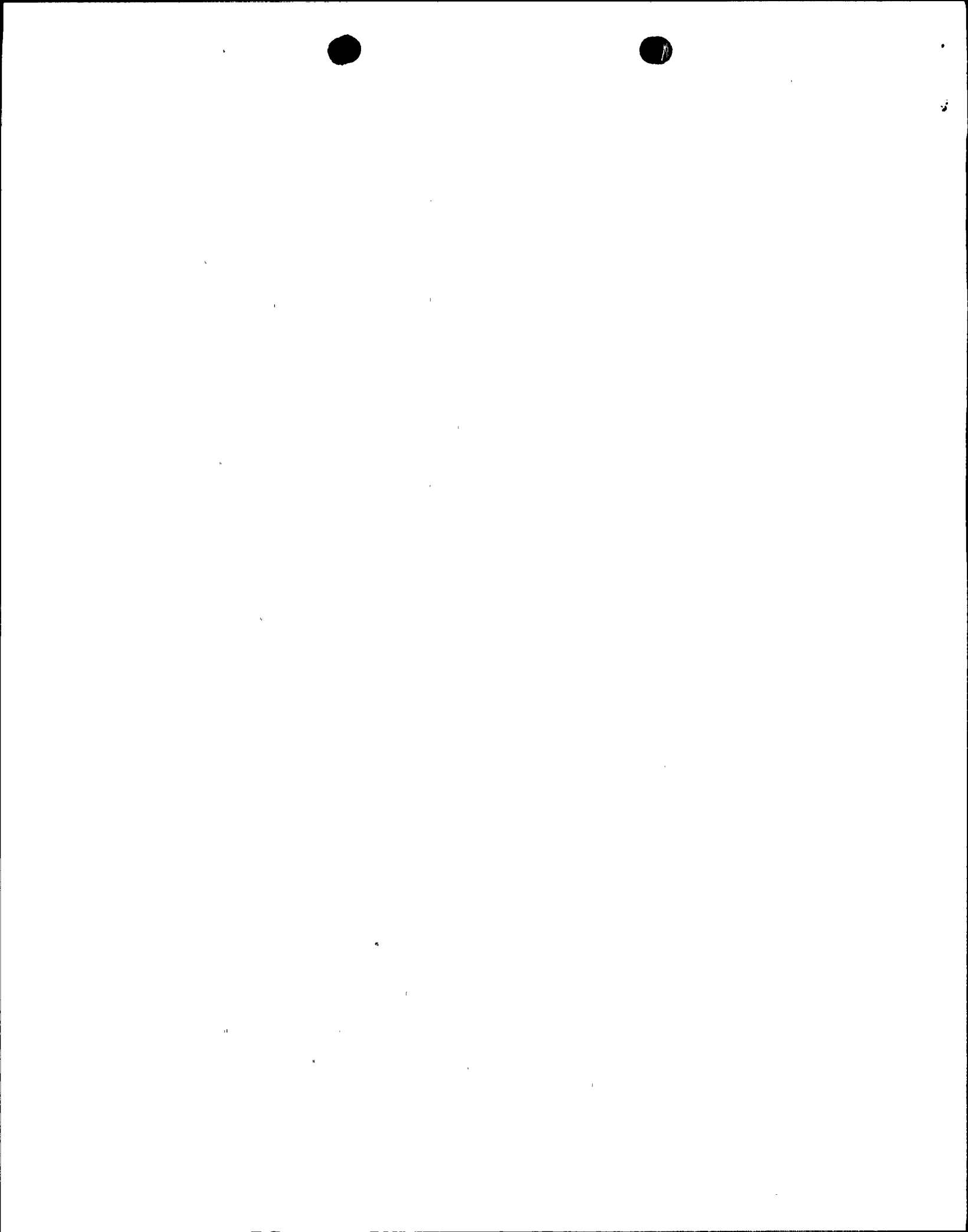
On March 6, 1988 with Unit 1 in condition 4 at 0% power, it was observed by an operator performing a panel walkdown following completion of a surveillance test that three of the four vent and purge exhaust valves to the Standby Gas Treatment System (SBGT, EIIS Code: BH) were in the closed position (HV-15713, 22 & 25). Automatic closure of these valves is classified as an Engineered Safety Feature (ESF) actuation. The valves had been open to support a containment purge which was underway on Unit 1. Instrumentation and Controls (I&C) Technicians were concurrently performing surveillance SI-079-217, Monthly Functional Test of SBGT Exhaust Vent Rad Monitors. A high radiation signal at the SBGT Exhaust Vent Rad Monitor will initiate an isolation of valves HV-15713, 03, 22, and 25. A second aspect of the event is that the fourth valve, HV-15703, failed to close when the high radiation logic was triggered. The test was successfully completed and all acceptance criteria were met prior to discovery of the ESF actuation.

CAUSE OF EVENT

The surveillance test places a switch for the SBGT Exhaust Vent Rad Monitor to the "trip-test" position which normally would initiate the containment isolation valve logic. A preliminary step, however, is performed during the surveillance which installs a jumper and thereby prevents actuation of the containment isolation valve logic. Normally without the jumper installed, various energized relays can be heard dropping out when the isolation valve logic is initiated. I&C personnel were not aware of any audible indication that the relays dropped out on this occasion. Thus, when the rad monitor was placed in the "trip-test" position, the testing personnel did not recognize that the vent and purge exhaust valves had isolated. Most probable cause is believed to be that the jumper failed to make proper contact. It is possible that the relays were just not heard as they dropped out. Root cause of why HV-15703 failed to close along with the other three valves could not be determined. Functional testing subsequent to the event proved that with the jumper installed and a rad monitor trip signal simulated, the containment vent and purge valves did not isolate and with the jumper removed, these valves did isolate per design. The functional testing demonstrated proper operation of the containment isolation logic for valves HV-15703, 13, 22, and 25.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73 (a) (2) (iv), in that the closure of the three vent and purge containment isolation valves constituted an unplanned ESF actuation. Adequate protection against an outside release of radioactive materials was ensured during the event. The outboard containment isolation valves were operable and would have performed their containment isolation function in the event of a high radiation condition. They therefore would not only have sealed off the flowpath created by HV-15703 being open, but also would have provided redundant protection by isolating the penetrations for which HV-15713, 22, and 25 had already closed off when they automatically went to their closed, safety function position during the event.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 8	- 0 0 5	- 0 0	0 3	OF	0 3

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

CORRECTIVE ACTIONS

Immediate corrective actions included reopening the vent and purge valves to re-establish the containment purge. Functional testing of the containment isolation valve logic was accomplished subsequent to the event. The testing proved that with the jumper installed with a rad monitor trip signal simulated, the containment vent and purge valves did not isolate and with the jumper removed, these valves did isolate per design. The functional testing demonstrated proper operation of the containment isolation logic for valves HV-15703, 13, 22, and 25. Panel terminations and wiring were also checked with no problems identified. An investigation was also completed in an attempt to determine why one of the four valves, HV-15703, did not close when the other three valves did close. Relays, contacts, and valves which could be a potential cause for HV-15703 failing to close during the surveillance were completely tested and no problems were found.

ADDITIONAL INFORMATION

Failed Component Identification: Not Applicable.

Previous Similar Events: None.





Pennsylvania Power & Light Company

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March 30, 1988

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 88-005-00
FILE R41-2
PLAS- 308

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

Attached is a Licensee Event Report 88-005-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that an engineered safety feature actuation occurred when three vent and purge containment isolation valves closed unexpectedly during surveillance testing.

R.G. Byram
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TSR/mjm

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