

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8912140080      DOC. DATE: 89/12/06      NOTARIZED: NO      DOCKET #  
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv      05000388  
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 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 89-014-00: on 891109, unplanned ESF actuation occurred during surveillance testing due to procedural deficiency.  
w/8      ltr.

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December 6, 1989

U.S. Nuclear Regulatory Commission  
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Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 89-014-00  
FILE R41-2  
PLAS -398

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

Attached is Licensee Event Report 89-014-00. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that an unplanned Engineered Safety Feature actuation occurred when the main condenser mechanical vacuum pump tripped during performance of a 18 month channel calibration surveillance on the "B" Main Steam Line Radiation Monitor.



R.G. Byram  
Superintendent of Plant - Susquehanna

MLC/mjm

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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 2</b>	DOCKET NUMBER (2) <b>0 5 0 0 0 3 8 8</b>	PAGE (3) <b>1 OF 0 3</b>
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TITLE (4)  
**Unplanned ESF Actuation Occurred During Surveillance Testing Due to Procedural Deficiency**

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)
1	1	0 9 8 9	8 9	0 1 4	0 0	1	2	0 6 8 9		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9) <b>4</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) <b>0 0 0</b>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input checked="" type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 60.36(c)(1)	<input type="checkbox"/> 60.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 60.36(c)(2)	<input type="checkbox"/> 60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(vii)(B)							
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(viii)							

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>Michael L. Crist - Compliance Evaluator</b>	TELEPHONE NUMBER <b>7 1 7 5 4 2 - 3 2 8 9</b>
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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) <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)

At 0911 hours on November 9, 1989 with Unit 2 in a refueling outage, Condition 4, an unplanned ESF actuation occurred as I&C technicians were performing an 18 month channel calibration surveillance on the "B" Main Steam Line (MSL) Radiation Monitor. When a high-high MSL radiation condition was simulated, the main condenser mechanical vacuum pump tripped. This is one of the trip functions initiated by the MSL Radiation Monitoring System, however, the surveillance did not identify this function and as such the actuation was deemed unplanned. The surveillance was halted and appropriate procedure changes were initiated.

The event was caused by the surveillance failing to provide provisions to defeat/re-enable the mechanical vacuum pump trip on MSL High-High Radiation/Inop trips should the pump be running during performance of the surveillance. There were no safety consequences or compromise to public health or safety as a result of this incident, the system operated per design. Appropriate changes have been made to the Unit 1 and Unit 2 MSL Radiation Monitoring channel calibration procedures to preclude recurrence of this event.

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-830), 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 - 0 1 4 - 0 0 0 2 OF 0 3	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

DESCRIPTION OF EVENT

At 0911 hours on November 9, 1989 with Unit 2 in the process of concluding a refueling outage, and in Condition 4, cold shutdown, an unplanned Engineered Safety Feature (ESF) actuation occurred. Instrument and Control (I&C) technicians (utility, non-licensed) were performing surveillance SI-279-307, 18 Month Channel Calibration Test of the "B" Main Steam Line (MSL) Radiation Monitor. Per the procedure, the technicians simulated a high-high MSL radiation condition to verify receipt of a half-scam and a half-Main Steam Isolation Valve (MSIV) isolation. When this was done the main condenser mechanical vacuum pump tripped. This is one of the trip functions initiated by the MSL Radiation Monitoring System (EIIS Code: IL), however, the surveillance did not identify this function and as such the actuation was deemed unplanned. Surveillance testing was halted and a procedure change was initiated to prevent additional mechanical vacuum pump trips. At 1227 hours ENS notification was made in accordance with 10CFR50.72(b)(2)(ii).

CAUSE OF EVENT

The event was caused by a procedural deficiency. The 18 month calibration surveillance failed to provide provisions to defeat/re-enable the main condenser mechanical vacuum pump trip on MSL high-high Radiation/Inop trips should the mechanical vacuum pump be operating during its performance.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that Unit 2 experienced an unplanned ESF actuation when the main condenser mechanical vacuum pump tripped during performance of surveillance SI-279-307. One of the functions of the MSL Radiation Monitoring System is to trip the mechanical vacuum pump on receipt of a high-high MSL steam line radiation signal. This trip function is considered an Engineered Design Feature. The mechanical vacuum pump is used during startup to establish vacuum in the main condenser when sufficient steam pressure is not available for air ejector operation. The non-condensable gases drawn from the condenser are discharged to atmosphere through the turbine building vent stack. This release path is monitored, but not filtered. Should a high MSL radiation condition be detected during this configuration, the release path would be terminated by tripping the mechanical vacuum pump. During normal plant operation the effluent is drawn from the main condenser by the steam jet air ejectors and delivered to the Off-Gas Recombiner System (EIIS Code: WF) for processing. There were no safety consequences or compromise to public health or safety as a result of this incident, the system operated per design.

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-830), 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	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   9	-   0   1   4	-   0   0	0   3	OF	0   3

TEXT (If more space is required, use additional NRC Form 308A's) (17)

CORRECTIVE ACTIONS

Surveillance SI-279-307 has been revised to provide steps to defeat/re-enable the condenser mechanical pump trips. In addition, identical changes have been made to SI-279-306, 18 month Channel Calibration Test of "A" MSL Radiation Monitor, and the corresponding Unit 1 procedures. No changes are required to the Unit 1 and 2 monthly channel functional tests of the MSL Radiation Monitors since steps to prevent mechanical vacuum trips are all ready in place.

ADDITIONAL INFORMATION

Failed Components: None

Previous Similar Events:

Review of Licensee Event Reports which document ESF actuations caused by deficiencies in surveillance procedures identified two similar events:

- LER 86-013, 50-387/NPF-14
- LER 89-011, 50-387/NPF-14