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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9002220014 DOC. DATE: 90/02/12 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
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 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-001-00: on 900113, simplex circuit failure causes failure to comply w/Tech Spec.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 1 ltr.
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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	NRR/DET/EMEB9H3	1	1	1	NRR/DET/ESGB 8D	1	1	1
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	NRR/DST/SELB 8D	1	1	1	NRR/DST/SICB 7E	1	1	1
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	REG FILE 02	1	1	1	RES/DSIR/EIB	1	1	1
	RGN1 FILE 01	1	1	1				
EXTERNAL:	EG&G WILLIAMS, S	4	4	4	L ST LOBBY WARD	1	1	1
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NOTES: 2 2

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February 12, 1990

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 90-001-00
FILE R41-2
PLAS - 407

Docket No. 50-387/388
License No. NPF-14
NPF-22

Attached is Licensee Event Report 90-001-00. This report is being made pursuant to 10CFR50.73(a)(2)(i)(B), in that an operation prohibited by the Technical Specifications existed when Continuous Firewatches were not established within one hour as required to meet the action statements of Technical Specification 3.7.6.2, 3.7.7, and 3.3.7.9 due to inoperable Fire detection.

H.G. Stanley
Superintendent of Plant - Susquehanna

SED/mjm

cc: Mr. W. T. Russell
Regional Administrator, Region I
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PDR ADCK 05000387
S PDC

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 1	DOCKET NUMBER (2) 0 5 0 0 0 3 8 7 1 OF 0 3	PAGE (3) 1 OF 0 3
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TITLE (4)
Simplex Circuit Failure Causes Failure to Comply with Technical Specifications.

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	1	13	9	0	0	0	2	1	SSES - U2		0 5 0 0 0 3 8 8
0	1	13	9	0	0	0	2	1			0 5 0 0 0

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)	20.406(c)	60.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	60.38(c)(1)	60.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(ii)	60.38(c)(2)	60.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.406(a)(1)(iii)	X 60.73(a)(2)(i)	60.73(a)(2)(vii)(A)							
	20.406(a)(1)(iv)	60.73(a)(2)(ii)	60.73(a)(2)(viii)(B)							
	20.406(a)(1)(v)	60.73(a)(2)(iii)	60.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME S. E. Davis - Site Fire Protection Engineer	TELEPHONE NUMBER AREA CODE: 711 7, 5 41 21 - 1 31 91 15
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS										
X	I	C	E	C	B	D	S	2	2	6	N								

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	X 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 January 13, 1990 with Unit 1 and Unit 2 operating in Condition 1 at 100% power, it was identified that continuous firewatches were not established within one hour as required by Technical Specification 3.7.7 Action a. This Action statement requires converting hourly firewatches to continuous firewatches upon the loss of fire detection in an affected area. The inability to establish the continuous firewatches within one hour was determined to constitute an operation prohibited by the Technical Specifications. On the above date the fire detection system in portions of the Control Structure was rendered inoperable due to two inoperable transponder cards in the Simplex fire protection central alarm system. The power supply/ground fault circuitry common to the two transponder cards failed, which caused all alarms from those transponder cards to be inoperable. This inoperability resulted in actions required due to Technical Specification 3.3.7.9, 3.7.6.2, and 3.7.7. Attempts to comply with the required change to continuous firewatches were made, however, insufficient personnel were available to establish the necessary continuous firewatches for all of the affected fire zones within the prescribed hour. Hourly firewatches were already in place in a majority of the affected fire zones. The required continuous firewatches were established within four (4) hours. The failed power supply/ground fault circuitry card was replaced and the fire detection system was returned to normal operation.

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) Susquehanna Steam Electric Station Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 8 7 9 0	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	- 0 0 1	- 0 0	0 2	OF 0 3

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

EVENT DESCRIPTION

On January 13, 1990 with both Unit 1 and Unit 2 operating in Condition 1 at 100% power, I&C personnel (utility, non-licensed) were attempting to repair a power failure/ground fault trouble alarm on the Simplex fire protection central alarm panel for field transponder card 103 (EIIS Code, IC). The problem was determined to be within the sensing circuitry of the transponder card and that no ground fault or power failure existed. The problem transponder card was replaced with a spare card. However, the spare card was determined to be defective, was removed, and the original card was reinstalled. Upon reinstallation of the original card, the power supply/ground fault circuitry card common to transponder cards 102 and 103 failed. The Simplex panel provided abnormal trouble alarms for each point on transponder cards 102 and 103. It was not recognized until 3 hours later at 2030 hours that this failure and these trouble alarms caused fire detection for Control Structure elevations 698, 714, 729, 741, 754, 771, 783, and 806 to be inoperable. Technical Specification 3.7.7 Action a. requires that within one hour a continuous firewatch be established on at least one side of the affected assembly OR verify the operability of the fire detectors on at least one side of the inoperable fire rated assembly and establish an hourly firewatch patrol. In accordance with the action statement for Technical Specification 3.7.7, an hourly firewatch patrol was already in effect for several inoperable fire barrier components, taking credit for the detection in the area. Technical Specification 3.7.6.2 requires a continuous firewatch when a listed spray or sprinkler system is inoperable. For elevation 783' and 806' the detection activates the automatic preaction sprinkler systems. With inoperable detection, the automatic actuation of these systems is lost. When the detection became inoperable due to the failure of the power supply/ground fault circuitry card, ten continuous firewatches were required to have been established within one hour. Additional firewatch personnel were not available on site and the seven(7) personnel who were called out could not respond in adequate time to man the required posts within the one hour timeframe. However, hourly firewatches were in place in a majority of the affected fire zones. In addition, six of the ten fire zones requiring a continuous firewatch are part of the main control room fire area (see FPRR section 6.2.25) which is continuously manned providing sufficient early warning and detection of a fire. The seven firewatch personnel who were called out were at the required stations by 2345 hours on 01/13/90 as continuous firewatches. The failed transponder cards ground fault circuitry was repaired and the fire detection system was returned to normal operation at 0415 hours on 01/14/90.

CAUSE OF EVENT

The event was caused by the failure of the power supply/ground fault circuitry common to transponder cards 102 and 103.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 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.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	- 0 0 1	- 0 0	0 3	OF	0 3

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

REPORTABILITY/ANALYSIS

This event was determined to be reportable under 10 CFR50.73(a) (2) (i) (B) as a failure to meet the requirements of Technical Specification 3.7.7 action a given failure of fire detection in affected areas.

The fire detection system provides early warning and detection of a fire in the plant. With hourly firewatches in place in most areas, this event created no significant consequences to the health and safety of the public and/or plant personnel. The safety impact of this event would not have been greater at any other plant operating condition.

In accordance with the guidance provided in NUREG 1022 Supplement 1 Item 14.1, the required submission date for this report was determined to be 02/12/90.

CORRECTIVE ACTIONS

The failed power supply/ground fault circuitry was replaced.

The failure of a power supply/ground fault circuitry card or any major portion of the Simplex detection system requires the establishment of several continuous firewatches. It is impractical to maintain adequate firewatch personnel on site around the clock in anticipation of a failure. Calling out personnel to fill the required positions almost assuredly cannot be accomplished within the one hour timeframe. PP&L is evaluating a possible Technical Specification change to address this situation.

ADDITIONAL INFORMATION

Failed Components Identification: ECBD*.

Previous Similar Reported Events:

LER 88-015-00 (Unit 1) and LER 89-007-00 (Unit 1) were identified as being similar (failure of Simplex transponder card).

*NOTE: The components which failed within the Simplex 2120 Central Alarm Station are not specifically identified.