

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8805250112 DOC. DATE: 88/05/20 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
 AUTH. NAME AUTHOR AFFILIATION
 WEHRY, R. R. Pennsylvania Power & Light Co.
 BYRAM, R. G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-007-00: on 880429, unplanned start of diesel generator occurred during surveillance test. Caused by electrical arc between terminal point & test equipment. Proper operation observed & engine shutdown. W/880520 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

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	AEOD/DOA	1 1	AEOD/DSP/NAS	1 1
	AEOD/DSP/ROAB	2 2	AEOD/DSP/TPAB	1 1
	ARM/DCTS/DAB	1 1	DEDRO	1 1
	NRR/DEST/ADS 7E	1 0	NRR/DEST/CEB 8H	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/QAB 10	1 1	NRR/DOEA/EAB 11	1 1
	NRR/DREP/RAB 10	1 1	NRR/DREP/RPB 10	2 2
	NRR/DRIS/SIB 9A	1 1	NRR/RMAS/ILRB12	1 1
	NUDDCS-ABSTRACT	1 1	<u>REG FILE</u> 02	1 1
	RES TELFORD, J	1 1	RES/DE/EIB	1 1
	RES/DRPS DEPY	1 1	RGN1 FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS, S	4 4	FORD BLDG HOY, A	1 1
	H ST LOBBY WARD	1 1	LPDR	2 2
	NRC PDR	1 1	NSIC HARRIS, J	1 1
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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 1	PAGE (3) 1 OF 0 3
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TITLE (4)
Emergency Diesel Generator 'E' Unplanned Automatic Start

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	4	29	8	8	8	8	8	8	SSES - Unit 2		0 5 0 0 0 3 8 8
0	4	29	8	8	8	8	8	8			0 5 0 0 0 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	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(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"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Richard R. Wehry, Power Production Engineer - Compliance	AREA CODE 7 1 7	NUMBER 5 4 2 1 3 6 6 4	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	NO <input checked="" type="checkbox"/>	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 April 29, 1988 at 1535 hours, with Unit 1 operating at 100% power and Unit 2 in the refueling condition at 0% power, an unplanned start of the 'E' Diesel Generator (which was substituting for the 'C' D/G) occurred during the performance of a Unit 2 18-month surveillance test. A high impedance test lamp assembly was to be installed on terminal points around the coil of the primary diesel emergency start relay to monitor the relay's status during the test. During installation of the the test equipment, an electrical arc occurred between a terminal point and the test equipment. The arcing lead to de-energization of the primary emergency start relay and an automatic diesel start.

To prevent recurrence, critical jumpers will hereafter be of a switched type, so that proper installation can be verified before closing the switch. Test equipment integrity will be checked prior to installation. If terminal points are difficult to attach test equipment to, an attempt will be made to identify alternate points which are more convenient. The station is also investigating longer term additional controls, such as the installation of permanent test connections on terminal points used during testing and the use of dedicated work crews who would be assigned to test personnel during planned outage testing periods.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 8	- 0 0 7	- 0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 368A's) (17)

DESCRIPTION OF EVENT

On April 29, 1988 at 1535 hours, with Unit 1 operating at 100% power and Unit 2 in the refueling condition at 0% power, an unplanned Engineered Safety Feature (ESF) actuation occurred when the 'E' Emergency Diesel Generator (EIIS Code: EK) (which was substituting for the 'C' Emergency Diesel Generator) automatically started. The diesel started, ran properly and was available to energize its emergency 4.16 KV bus (EIIS Code: EB) and perform its design function, if required. Operation of Unit 1 continued uninterrupted.

CAUSE OF EVENT

A surveillance test, SE-224-107, 18-month Division I LOCA-LOOP testing, was being performed on Unit 2 in accordance with the test procedure. A high impedance test lamp assembly was to be installed around the coil of the primary diesel emergency start relay to monitor the relay's status during the test. During installation of the test equipment by utility work support group electricians, an electrical arc occurred between a terminal point in the engine control panel and the test equipment. The arcing caused the primary emergency start relay to de-energize which lead to an emergency automatic start of the diesel generator.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73(a) (2) (iv) in that an unplanned Engineered Safety Feature (ESF) actuation occurred when the 'E' Emergency Diesel Generator (which was substituting for the 'C' Emergency Diesel Generator) automatically started. The diesel generator started, ran properly and was available to energize its emergency bus and perform its design function, if required. As such, no safety consequences or compromise to public health or safety occurred.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

CORRECTIVE ACTIONS

Following the diesel generator start, an operator was dispatched to the engine, proper operation was observed and the engine was shut down. The testing was suspended to allow a review of the incident and the test procedure.

Following review of the incident by Technical and Operations section personnel, the following actions to prevent recurrence were implemented:

- 1) For the remainder of the Unit 2 outage, all Technical Section testing will be evaluated prior to performance. If terminal points are difficult to attach test equipment to, an attempt will be made to identify alternate points which are more convenient.
- 2) Critical jumpers will be of a switched type, so that proper installation can be verified prior to closing the switch.
- 3) Test equipment integrity will be checked prior to installation.

The station is also investigating longer term additional controls, such as the installation of permanent test connections on terminal points which are used during testing, and the use of testing dedicated work support crews, who would be assigned to test personnel during planned outage testing periods.

ADDITIONAL INFORMATION

Licensee Event Report 87-032-00 identified an unplanned automatic start of the 'A' Emergency Diesel Generator on November 22, 1987. This unplanned ESF actuation was caused by the failure of a coil in a relay of the engine electrical control circuit.

As a result of unplanned ESF actuations during the Unit 2 Second Refueling and Inspection Outage, a Task Force has been established by Plant Management to analyze the commonality of the incidents, identify any broad implications associated with the incidents and develop recommendations that will improve the safety and operation of the station.



Pennsylvania Power & Light Company

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May 20, 1988

U.S. Nuclear Regulatory Commission
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 88-007-00
FILE R41-2
PLAS - 318

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

Attached is Licensee Event Report 88-007-00. This event was determined reportable per 10CFR50.73(a) (2) (iv) in that an unplanned Engineered Safety Feature (ESF) actuation occurred when the 'E' Emergency Diesel Generator was inadvertently automatically started during surveillance testing.


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RRW/mjm

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