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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9105300318 DOC.DATE: 91/05/22 NOTARIZED: NO DOCKET #
 FACIL:50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylva 05000388
 AUTH.NAME AUTHOR AFFILIATION
 WEHRY,R.R. Pennsylvania Power & Light Co.
 STANLEY,H.G. Pennsylvania Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-006-00:on 910422,emergency diesel generator A failed to reach rated speed & pick up load during 18-month LOCA/ LOOP surveillance test.Cause not determined.Two pneumatic components replaced.W/910522 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:LPDR 1 cy Transcripts. 05000388 A

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INTERNAL:	ACNW		2	2	ACRS		2	2	
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	NRR/DST/SRXB 8E		1	1	REG FILE 02		1	1	
	RES/DSIR/EIB		1	1	RGNI FILE 01		1	1	
EXTERNAL:	EG&G BRYCE,J.H		3	3	L ST LOBBY WARD		1	1	
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Pennsylvania Power & Light Company

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May 22, 1991

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 91-006-00
FILE R41-2
PLAS -486

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

Attached is Licensee Event Report 91-006-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that an Engineered Safety Feature (ESF) actuation, namely an automatic Emergency Diesel Start, did not occur as required during an 18 month Technical Specification surveillance test procedure.

H.G. Stanley
Superintendent of Plant - Susquehanna

RRW/mjm

cc: Mr. T. T. Martin
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
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Mr. G. S. Barber
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U.S. Nuclear Regulatory Commission
P.O. Box 35

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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) Susquehanna Steam Electric Station - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	PAGE (3) 1 OF 0 4
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TITLE (4)
Emergency Diesel 'A' Failure During 18 Month Surveillance 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	4	2	9	1	0	0	5	2	SSES - Unit 1		0 5 0 0 0 3 8 8
0	4	2	9	1	0	0	5	2			0 5 0 0 0

OPERATING MODE (9) **5**

POWER LEVEL (10) **0 10 10**

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 60.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(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"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 60.36(c)(2)	<input type="checkbox"/> 60.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 60.73(a)(2)(i)	<input type="checkbox"/> 60.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 60.73(a)(2)(ii)	<input type="checkbox"/> 60.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 60.73(a)(2)(iii)	<input type="checkbox"/> 60.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Richard R. Wehry, Compliance Engineer	TELEPHONE NUMBER
	AREA CODE: 7 1 1 7 NUMBER: 5 1 4 1 2 1 - 1 3 1 6 1 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

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 0040 hours on April 22, 1991, with Unit 2 in Condition 5 at 0% power and Unit 1 in Condition 1 at 100% power, the 'A' Emergency Diesel Generator (EDG) failed to reach rated speed and pick up load during 18 month LOCA - LOOP surveillance testing. The 'A' EDG did receive an automatic start signal and did start, but was manually shut down when it failed to reach rated speed and pick up its emergency bus loads. Investigations were unable to determine the exact cause of the failure to reach rated speed. A subsequent troubleshooting start attempt was successful. The EDG emergency start logic and operability surveillance tests were successfully performed. The 18 month LOCA - LOOP surveillance test was successfully reperformed in its entirety. There were no safety consequences or compromise to public health or safety since three EDGs remained OPERABLE as required by the Susquehanna Safety Analysis. Since there are two failures in the last 20 valid tests, the 'A' EDG test interval is one start at least once per 7 days per the Technical Specifications.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 500 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	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	- 0 0 6	- 0 0	0 2	OF	0 4

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

DESCRIPTION OF EVENT

At 0040 hours on April 22, 1991, with Unit 2 in Condition 5 at 0% power and Unit 1 in Condition 1 at 100% power, the 'A' Emergency Diesel Generator (EDG; EIIIS Code: EK) failed to reach rated speed and pick up load during performance of SE-224-107, "18 Month Diesel Generator 'A' and 'C' (or 'E') Auto Start and ESS Buses 2A and 2C Energization on Loss of Offsite Power With a LOCA-Plant Shutdown". The 'A' and 'C' EDGs did receive an automatic start signal and did start, but the 'A' EDG was manually shutdown when it failed to reach rated speed and pick up its emergency bus loads as required by the procedure.

Limiting Condition for Operation (LCO) 3.8.1.1 ACTION was taken. The 'E' EDG was substituted for the 'A' EDG within the required Technical Specification 72 hour LCO ACTION time to allow troubleshooting of the 'A' EDG.

CAUSE OF EVENT

Investigations performed were unable to determine the cause of the 'A' EDG failure to reach rated speed and pick up load. The investigations included:

- o Verification of proper function and contact closure continuity of EDG emergency run relays
- o Verification of pneumatic system cleanliness
- o Verification of unrestricted movement of emergency fuel oil control solenoid valves and safety trip fuel control cylinder
- o Observation of proper rate of fuel pressure rise
- o Observation of proper air start pressure and response
- o Verification of proper governor response, both mechanical and electrical portions
- o Observation of proper generator characteristics

A maintenance troubleshooting start was performed and all EDG responses were satisfactory. The emergency start logic and operability surveillance tests for the 'A' EDG were successfully completed. The 18 month LOCA - LOOP surveillance test was successfully reperformed in its entirety.

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

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

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that an Engineered Safety Feature (ESF) actuation, namely an automatic EDG start, did not occur as planned during an 18 month Technical Specification surveillance test. SE-224-107, "18 Month Diesel Generator 'A' and 'C' (or 'E') Auto Start and ESS Buses 2A and 2C Energization on Loss of Offsite Power With a LOCA - Plant Shutdown", performs testing to fulfill several Technical Specification surveillance requirements. During the performance of SE-224-107 on April 22, 1991, EDGs 'A' and 'C' were given start signals through their ESF logic via the procedure. The 'A' EDG failed to achieve rated speed and, as a result, did not energize its associated emergency bus. The 'A' EDG was manually shut down and LCO 3.8.1.1 ACTION was taken. The 'E' EDG, which is a fifth and spare EDG at SSES, was substituted for the 'A' EDG within the required Technical Specification 72 hour LCO ACTION time.

Three EDGs remained OPERABLE during the event as required by the SSES Safety Analysis to perform their design function, if required to do so. As such, there were no safety consequences or compromise to public health or safety as a result of this event.

Following the investigations, the emergency start logic and operability surveillance tests for the 'A' EDG were successfully completed and the 'A' EDG was declared OPERABLE on 04/23/91 at 1605 hours. The 18 month LOCA - LOOP surveillance test was successfully reperformed in its entirety on 04/24/91. The 'A' EDG was unavailable for 1 day, 15 hours and 25 minutes.

CORRECTIVE ACTIONS

Investigations performed were unable to determine the cause of the 'A' EDG failure to reach rated speed, although the most likely cause was a sticky pneumatic valve, not repeatable during testing. The investigations included:

- o Verification of proper function and contact closure continuity of EDG emergency run relays
- o Verification of pneumatic system cleanliness
- o Verification of unrestricted movement of emergency fuel oil control solenoid valves and safety trip fuel control cylinder
- o Observation of proper rate of fuel pressure rise

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

TEXT (If more space is required, use additional NRC Form 306A's) (17)

- o Observation of proper air start pressure and response
- o Verification of proper governor response - both mechanical and electrical portions
- o Observation of proper generator characteristics.

Two pneumatic components were replaced as a precautionary measure. However, bench testing of the removed components did not identify any abnormalities which would have affected their performance.

A maintenance troubleshooting start was performed and all EDG responses were satisfactory. The emergency start logic and operability surveillance tests for the 'A' EDG were successfully completed. The 18 month LOCA - LOOP surveillance test was successfully reperformed in its entirety.

The 4/22/91 'A' EDG failure to reach rated speed and pick up load during the 18 month LOCA - LOOP surveillance testing is considered a valid test and valid failure. The 'A' EDG Start Log indicates there are two (2) 'A' EDG failures in the last 20 valid tests. The 'A' EDG test interval is one start at least once per 7 days per Technical Specification Table 4.8.1.1.2 - 1.

ADDITIONAL INFORMATION

This Licensee Event Report also fulfills the requirement for issuance of a Special Report per Technical Specification 4.8.1.1.4 for all diesel generator failures, valid or non-valid.

Failed Component Identification : None identified

Previous Similar Events : None