

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8906020157 DOC. DATE: 89/05/22 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387
 AUTH. NAME AUTHOR AFFILIATION
 RUSANOWSKY, P.P. Pennsylvania Power & Light Co.
 BYRAM, R.G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-010-00: on 890422, ESF actuation signals as a result of RPS EPA breaker trips.

W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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	NRR/DEST/RSB 8E	1 1	NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1	NRR/DLPQ/PEB 10	1 1
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	L ST LOBBY WARD	1 1	LPDR	1 1
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Susquehanna Steam Electric Station

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May 22, 1989

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 89-010-00
PLAS-364 FILE R41-2

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

Attached is Licensee Event Report 89-010-00. This event was determined to be reportable per 10CFR 50.73(a)(2)(iv) in that unplanned actuation signals to Engineered Safety Feature systems were initiated.


R.G. Byram
Superintendent of Plant-Susquehanna

PPR/cg

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PDR ADCK 05000387
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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)
ESF Actuation Signals as a Result of RPS EPA Breaker Trips

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	22	8	9	010	0	5	22			0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(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"/> 20.405(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"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.405(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)										
NAME P.P. Rusanowsky							TELEPHONE NUMBER			
							AREA CODE			
							7 1 7	5 4 2 - 3 7 5 9		

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	
A	J C	X F M R		Y							

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

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

At 0424 on 4-22-89, with Unit 1 in a refueling outage and all fuel removed from the reactor vessel and Unit 2 at 100% power, the Unit 1 "B" Reactor Protection System (RPS) distribution panel was transferred from its normal power supply to its alternate power supply in support of planned outage activities. When the intentional, "B" RPS half scram signal was reset at 0427, a "B" RPS alternate Electrical Protection Assembly (EPA) breaker tripped, which per design, re-initiated the "B" RPS half scram and Primary Containment Isolation signals. Since all affected, Engineered Safety Feature (ESF) systems and devices were in their actuated or post trip condition, no ESF equipment actuations occurred. After resetting the EPA breaker, it tripped again when the "B" RPS half scram was reset at 0440. The cause of the EPA breaker trips was determined to be heat degradation of wiring to the "B" RPS alternate transformer output filter capacitors due to obstructed cooling air flow to the transformer cabinet caused by a discarded cleaning rag. This resulted in low output voltage to the EPA breaker which tripped per design. The transformer wiring has been repaired and proper system performance has been demonstrated. Current preventive maintenance activities for the transformers are being reviewed for adequacy and will be revised as necessary.

* ISO REG CORP. 410 Great Road, Littleton, MA 01460
(Not listed in NPRDS Reporting Procedures Manual)

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0 1 0	0 0	0 0	0 2	OF	0 3

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

EVENT

At 0424 on 4-22-89, with Unit 1 in a refueling outage and defueled and Unit 2 at 100% power, the Unit 1 "B" Reactor Protection System (RPS) (EEIS Code: JC) distribution panel 1Y201B, was transferred from its normal power supply ("B" RPS MG Set) to its alternate power supply ("B" RPS alternate transformer, 1X201B) in support of planned outage activities. Per plant procedures, this resulted in a "B" RPS half scram signal and specific Primary Containment Isolation System (PCIS) (EEIS Code: JM) signals. The PCIS trip signals were reset without incidence. When the half scram was reset at 0427, "B" RPS alternate Electrical Protection Assembly (EPA) breaker 1CBS003 B-H tripped, which re-initiated the "B" RPS half scram and PCIS signals. Since the procedures being used at the time had placed all affected, Engineered Safety Feature (ESF) systems and devices in their actuated or post trip condition, no ESF equipment actuations occurred. The alternate EPA breaker was reset at 0431 and the PCIS signal reset. When the "B" RPS half scram was reset at 0440, the EPA breaker tripped again and re-initiated the "B" RPS half scram and PCIS signals. The "B" RPS distribution panel was transferred back to its normal supply at 0452 and the "B" RPS half scram and PCIS signals were reset.

REPORTABILITY/ANALYSIS

This event was determined to be reportable under 10CFR 50.72(b)(2)(ii) and 10 CFR 50.73 (a)(2)(iv) in that the unanticipated initiation of the "B" RPS half scram and PCIS signals constituted unplanned ESF actuations. An Emergency Notification System (ENS) call was made at 0712 on 4-22-89. Since all the ESF systems involved functioned per design, there was no compromise to the health or safety of the public.

CAUSE

It was determined that the output of the "B" RPS alternate transformer, 1X201B, was abnormally low and that the EPA breaker functioned per design (i.e., it automatically tripped on low voltage when a significant load was applied to the transformer by resetting the half scram). Further investigation revealed heat damage to wire in the vicinity of terminations to the transformer output filter capacitors. Numerous wires were degraded and several had parted, causing the low transformer output voltage. The cause of the heat damage was general area overheating in the transformer cabinet as a result of a discarded cleaning rag which was obstructing the cooling air intake flow.

CORRECTIVE ACTION

All degraded wiring was replaced and reterminated. Transformer output voltage was confirmed to be normal. The "B" RPS distribution panel was subsequently transferred to its alternate supply and the "B" RPS half scram signal was reset without further incidence. The other three RPS alternate power supply transformers will be inspected for similar degradation and proper output voltage. The existing preventive maintenance activities for the transformers

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

are currently being reviewed for adequacy and will be revised as necessary. No further corrective actions are planned regarding the discarded cleaning rag since it was determined to be an isolated incident.

ADDITIONAL INFORMATION

A review of past LER's for the Station revealed several events involving inadvertent, alternate EPA breaker trips which resulted in unplanned ESF actuations.

- 83-030
- 84-011
- 84-037
- 86-029

This LER does not appear to be a recurrence of any of the previous causes.