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ACCESSION NBR: 8912120168 DOC. DATE: 89/12/07 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387
 AUTH. NAME AUTHOR AFFILIATION
 RYDER, T.S. Pennsylvania Power & Light Co.
 BYRAM, R.G. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-026-00: on 891108, ESF actuation due to electrical transient when radwaste transformer failed.

W/8 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000387

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December 7, 1989

U.S. Nuclear Regulatory Commission
Document Control Desk
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 89-026-00
FILE R41-2
PLAS -399

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

Attached is Licensee Event Report 89-026-00. This event is reportable per 10CFR50.73(a)(2)(iv) in that ESF actuations occurred due to an electrical transient that occurred when a 13,800 Volt/480 Volt transformer failed.

R.G. Byram
Superintendent of Plant - Susquehanna

TSR/mjm

cc: Mr. W.T. Russell
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PDR ADOCK 05000387
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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 1** DOCKET NUMBER (2) **0 5 0 0 0 3 8 7** PAGE (3) **1 OF 0 2**

TITLE (4) **ESF Actuation Due to Electrical Transient When Radwaste Transformer Failed**

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 8 8 9	8 9	0 2 6	0 0	1 2	0 7	8 9	SSES - Unit 2	0 5 0 0 0 3 8 8
										0 5 0 0 0

OPERATING MODE (9) **1**

POWER LEVEL (10) **1 0 0**

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 checked="" type="checkbox"/> 20.406(c)	<input 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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME **Thomas S. Ryder - Power Production Engineer - Compliance** TELEPHONE NUMBER **7 1 7 5 4 2 - 3 2 3 5**

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
B	E	A X F M R	B 4 5 5	N					

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)

On November 8, 1989 with Unit 1 operating at 100% power in Condition 1 and Unit 2 in Condition 4, the Radwaste Load Center Transformer OX330 underwent an electrical failure. As part of the electrical transient that followed, ESF actuations occurred on both Units on the Containment Atmosphere Control and Containment Instrument Gas Systems. Other plant equipment was affected on both units, however, plant safety was not impaired. The cause of the occurrence is not known at this time. A root cause analysis will be performed on the transformer to identify failure mode. Any appropriate actions to prevent recurrence will be acted upon at that time. The cause of the ESF actuations and other plant perturbations was the direct result of the electrical transient that the OX330 failure induced on the 13.8 KV and 480 V electrical systems. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) due to the unplanned ESF actuations. The event did not pose any significant safety consequences. Electrical load centers and power supplies were cross tied as necessary and the affected Unit 1 and 2 systems were restored to a normal configuration. OX330 was replaced with a spare transformer.

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) Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2) 0 5 0 0 0 3 8 7	LER NUMBER (8)			PAGE (3)	
		YEAR. 89	SEQUENTIAL NUMBER -026	REVISION NUMBER -010		

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

DESCRIPTION OF EVENT

On November 8, 1989 with Unit 1 operating at 100% power in Condition 1 and Unit 2 in Condition 4, Cold Shutdown, the Radwaste Load Center Transformer OX330 (EIIS Code: EA) underwent an electrical failure. OX330 is a 13,800 Volt/480 Volt transformer which supplies Turbine Building Heating, Ventilation, and Air Conditioning (HVAC) load centers via load center transformers 2X160 and 2X180. As part of the electrical transient that followed, Engineered Safety Feature (ESF) actuations occurred on both Units. The inboard and outboard containment isolation valves for Loop "A" of the Containment Atmosphere Control (CAC, EIIS Code: IK) system isolated on both Unit 1 and 2 as well as the Containment Instrument Gas (CIG, EIIS Code: LD) containment isolation valves to the Traverse Incore Probe (TIP, EIIS Code: JD) System, SV-12661 and SV-22661. Additionally, the CIG containment isolation valve to the Suppression Pool Vacuum Breakers (EIIS Code: BF), SV-22671, isolated on Unit 2. Other plant equipment was affected on both units, however, plant safety was not impaired.

CAUSE OF EVENT

The cause of the occurrence is not known at this time. A root cause analysis will be performed on the transformer to identify failure mode. The cause of the plant perturbations described above was the direct result of the electrical transient that the OX330 failure induced on the 13.8 KV and 480 V electrical systems.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a) (2) (iv), in that the closure of the CAC and CIG system containment isolation valves constituted unplanned ESF actuations. The event did not pose any significant safety consequences. The isolation valves are designed to close following a design basis accident. Since the valves actuated to the closed position, they were capable of fulfilling their design accident function.

CORRECTIVE ACTIONS

Electrical load centers and power supplies were cross tied as necessary and the affected Unit 1 and 2 systems were restored to a normal configuration. OX330 was replaced with a spare transformer which was successfully energized on November 27, 1989. The failed transformer will be evaluated for failure mode and any appropriate actions to prevent recurrence will be acted upon at that time.

ADDITIONAL INFORMATION

Failed Component Identification: XFMR - 13,800 Volt/480 Volt transformer (Manufacturer: Brown Boveri).

Previous Similar Events: There have been previous 13 KV/480 Volt electrical transients induced by Auxiliary Boiler arc - over events (reference LER's 84-043, 87-010, 87-012); however no previous similar events were identified due to 13 KV/480 Volt transformer failures.