

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8812080205      DOC. DATE: 88/12/05      NOTARIZED: NO      DOCKET #  
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania      05000387  
 AUTH. NAME      AUTHOR AFFILIATION  
 HIRT, J.A.      Pennsylvania Power & Light Co.  
 BYRON, R.G.      Pennsylvania Power & Light Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 88-022-00: on 881104, single train safety sys  
 inadvertently disabled due to personnel error.

W/8      .ltr.

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NOTES: LPDR 1 cy Transcripts. 05000387

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit One	DOCKET NUMBER (2) 0   5   0   0   0   3   8   7	PAGE (3) 1   OF   0   4
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TITLE (4)  
Single Train Safety System Inadvertently Disabled Due to a Personnel Error

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	4	8	8	8	8	8	0	2	2	0	0	1	2	0	5	8	8	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)	20.405(e)	50.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(e)						
	20.406(a)(1)(ii)	50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(vii)(A)							
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)							
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Jeffrey A. Hirt, Engineer Level II	TELEPHONE NUMBER 7   1   7   5   4   2   -   3   9   1   7
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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

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> 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 November 4, 1988, at approximately 0545 hours, an operator, while in the process of tagging the Unit Two High Pressure Coolant Injection (HPCI) system out of service, removed two fuses from the Unit One HPCI turbine trip logic. The error was discovered at approximately 0855 hours when a second operator was dispatched to modify the tagging on the fuses. When the second operator arrived at the Unit Two panel (2C620), housing the HPCI fuses, he found the fuses installed. The second operator then checked the respective Unit One panel (1C620) and found that the fuses had been pulled. At the time, Unit One was operating at approximately 100% rated power.

The cause of the occurrence was attributed to less than adequate differentiation between the two relay rooms and a lack of attention to detail on the part of the operator. To reduce the possibility of occurrence, the differentiation between the two relay rooms will be enhanced. In addition, this event will be reviewed with Operations personnel during their retraining cycle.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Event Description

On November 4, 1988, at approximately 0545 hours, an operator (non-licensed, utility), while in the process of tagging the Unit Two High Pressure Coolant Injection (HPCI, EIIS Code: BJ) system out of service, removed two fuses from the Unit One HPCI turbine trip logic. The error was discovered at approximately 0855 hours when a second operator (non-licensed, utility) was dispatched to modify the tagging on the fuses. When the second operator arrived at the Unit Two panel (2C620), housing the HPCI fuses, he found the fuses installed. The second operator then checked the respective Unit One panel (1C620) and found that the fuses had been pulled.

Had there been no need to modify the tagging of the fuses, the error would still have been detected, prior to performing work on the system. Administrative Procedure AD-QA-103 Protective Permit and Tag System details the responsibilities and steps for tagging a system out of service for work. Prior to performing work under the permit, the procedure requires the work group representative to verify that the blocking/tagging is correct. (The error was discovered prior to performing any work under the permit. As such, the work group representative had not yet verified that the permit was correct.) This additional barrier guards against errors of this type, and would have identified that the incorrect fuses had been pulled.

At the time, Unit One was operating at approximately 100% rated power.

Cause of the Event

The cause of the cognitive error is attributed to the operator entering the Unit One relay room instead of the Unit Two relay room. The relay rooms are located on the same elevation of the Control Structure.

The causal factors contributing to the operator selecting the incorrect relay room include;

- a. Less than adequate differentiation between the two relay rooms;
- b. Reduced attentiveness of the operator.

The entrances to the Unit One and Unit Two relay rooms are similar

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

in appearance. Although both doors are labelled, the labels appear the same except for the unit number.

Unit One Door Label

Unit Two Door Label

UNIT 1  
LOWER RELAY ROOM

UNIT 2  
LOWER RELAY ROOM

The signs do not draw attention to themselves or distinctly differentiate between the two rooms. The labels on the doors are not easily perceived and, as a result, may go unnoticed. This is especially true if an individual is familiar with where the lower relay room is located (i.e., he would have no reason to read the signs).

Contributing to the inappropriate action was the fact that it occurred towards the end of the shift, on the operators first night of nights.

The causal factors combined and resulted in the operator inadvertently entering the Unit One lower relay room instead of the Unit Two lower relay room.

Corrective Action

When the second operator, dispatched to modify the tags hung on the fuses, discovered the error he notified the control room. Limiting Conditions for Operation 3.3.3 and 3.5.1 were declared due to the HPIC system being inoperable. Operations personnel cleared the LCOs and declared the Unit One HPCI system operable at 1015 hours on November 4, 1988, following re-installation of the fuses and verification of continuity.

To reduce the possibility of others inadvertently entering the incorrect relay room, the differentiation between the two relay rooms will be reviewed and enhancements will be considered. In addition, this event will be reviewed by Operations personnel during their retraining cycle.

Event Analysis

As a result of the removal of the two fuses, the Unit One HPCI Turbine Trip logic was defeated. HPCI automatic and manual initiation functions were not affected. The HPCI turbine trips on

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

the following signals:

1. Manual Trip, initiated by the operator
2. High Turbine Exhaust pressure
3. Low Booster Pump Suction Pressure
4. High Reactor Water Level
5. Low Steam Pressure
6. High Ambient and High Differential Temperature
7. High Differential Pressure

The mechanical overspeed trip and local trip mechanism were not affected by the fuse removals and could have been used to shutdown the HPCI system. In addition, the inboard and outboard HPCI Steam Supply Isolation valves were also not affected and would have closed on all but two (High Reactor Water Level and Low Booster Pump Suction Pressure) of the above signals. Their closure would shut off the supply of steam to the HPCI turbine, thereby shutting down the system.

The two trip signals, which do not cause closure of the isolation valves, activate alarms in the control room. Upon annunciation, the control room operator could manually close the isolation valves and shutdown the HPCI system or dispatch an operator to manually trip the HPCI turbine locally.

During this event, the other Emergency Core Cooling Systems, Reactor Core Isolation Cooling (EIIS Code:BN), Low Pressure Coolant Injection (EIIS Code:BO), Core Spray (EIIS Code:BM), and Automatic Depressurization Systems (EIIS Code: None Listed) were operable and available for use if needed.

Similar Events

A review of past Licensee Event Reports did not reveal any similar events.

Reportability

This event was determined to be reportable pursuant to 10CFR50.73(a)(2)(vii), in that, due to the inadvertent removal of two fuses from the Unit One HPCI turbine trip logic, a single train safety system was disabled.



**Pennsylvania Power & Light Company**

Two North Ninth Street • Allentown, PA 18101 • 215/770-5151

December 5, 1988

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

Susquehanna Steam Electric Station  
Licensee Event Report 88-022-00  
File R41-2  
PLAS - 344

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

Attached is Licensee Event Report 88-022-00. This event was determined reportable per 10CFR50.73 (a) (2) (vii), in that, a single train safety system was inadvertently disabled due to a personnel error.

  
R. G. Hyam  
Superintendent of Plant - Susquehanna

JAH/jah

cc: Mr. William Russel  
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