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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9404110166 DOC. DATE: 94/04/06 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania 05000388
 AUTH. NAME AUTHOR AFFILIATION
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 STANLEY, H.G. Pennsylvania Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-004-00: on 940307, HPCI declared inoperable due to broken connection at level switch. Caused by corrosion on threads of screw. States link screws replaced & surveillance test completed. W/940406 ltr.

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April 6, 1994

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 94-004-00
PLAS - 595 FILE R41-2

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

Attached is Licensee Event Report 94-004-00. This report is being made pursuant to 10CFR50.73(a)(2)(v)(D), in that the High Pressure Coolant Injection (HPCI) System, a single train safety system, was declared inoperable due to a broken connector on the level switch which provides the signal to transfer HPCI suction from the Condensate Storage Tank (CST) to the Suppression Pool on low CST level. Repairs were made and the system was restored to operable status.


H.G. Stanley
VP - Nuclear Operations

RRW/mjm

cc: Mr. T. T. Martin
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LICENSEE EVENT REPORT (LER)

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) Susquehanna Steam Electric Station - Unit 2		DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	PAGE (3) 1 OF 13
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TITLE (4)
HPCI Inoperable Due to Broken Connection at Level Switch

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		
03	07	94	94	004	00	04	06	94	DOCKET NUMBER(S) 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(c)	50.73(a)(2)(iv)	73.71(b)						
	20.406(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)						
	20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	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)(viii)(A)							
	20.406(a)(1)(iv)	60.73(a)(2)(ii)	50.73(a)(2)(viii)(B)							
20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER
NAME Richard R. Wehry - Compliance Engineer		AREA CODE 7117
		514121-31614

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	
X	B J	C O N S	3 7 5	NO							

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

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

On March 7, 1994 at 1630 hours with Unit 2 in Condition 1 at 100% power, a monthly surveillance test was being performed on a level switch which provides the signal to transfer the suction supply of the High Pressure Coolant Injection (HPCI) system from the Condensate Storage Tank (CST) to the Suppression Pool on low CST level. Upon loosening a states link screw in the instrument circuit, for performance of the test, the screw broke. Since this rendered the circuit for the level switch inoperable, the HPCI system was declared inoperable. Declaring HPCI inoperable is reportable per 10CFR50.73(a)(2)(v)(D) as a condition that alone could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident. However, HPCI did remain functional with its suction source as the CST and the capability existed to manually transfer the suction source to the Suppression pool, if needed. It is believed that corrosion on the states link screw threads was the most probable cause for the screw failure. This failure was considered to be an isolated event in that corrosion has not been observed on similar circuits for Unit 1 HPCI or Unit 1 and Unit 2 Reactor Core Isolation Cooling Systems. The states link and its terminal box were replaced and the system was restored to operable status.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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 4	— 0 0 4	— 0 0	0 2	OF 0 3	

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

DESCRIPTION OF EVENT

On March 7, 1994 at 1630 hours, with Unit 2 in Condition 1 at 100% power, a monthly surveillance test was being performed on a level switch which provides the signal to transfer the suction supply of the High Pressure Coolant Injection (HPCI; EIIS Code: BJ) System from the Condensate Storage Tank (CST; EIIS Code: KA) to the Suppression Pool (EIIS Code: None) on low CST level. Upon loosening a states link screw in the instrument circuit, for performance of the test, the screw broke. Since this rendered the circuit for the level switch inoperable, the HPCI system was declared inoperable.

CAUSE OF EVENT

It is believed that the most probable cause for failure of the states link screw was corrosion on the threads of the screw. This states link is located in a sealed terminal box outdoors near the CST. It is believed that a degraded seal had resulted in moisture intrusion resulting in corrosion inside the terminal box. Corrosion has not been observed on similar circuits for Unit 1 HPCI or Unit 1 and Unit 2 Reactor Core Isolation Cooling (RCIC; EIIS Code: BN) systems. Therefore, this failure was considered to be an isolated event.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(v)(D) as a condition that alone could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident. The HPCI system is a single train safety system. With the circuit for automatic transfer of the suction source for HPCI from the CST to Suppression Pool on low CST level rendered inoperable, the HPCI system was declared inoperable and LCO action 3.5.1 was taken. However, the HPCI system remained functional with the CST as its suction source and the capability existed to manually transfer the suction source to the Suppression Pool if needed. All remaining Emergency Core Cooling Systems (ECCS) required by Technical Specification LCO 3.5.1 remained OPERABLE during the time that HPCI was inoperable. As such, this condition did not result in any safety consequences or compromises to public health or safety. The HPCI system was restored to OPERABLE status at 0150 hours on March 8, 1994.

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 4	- 0 0 4	- 0 0	0 3	OF	0 3

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

CORRECTIVE ACTION

The broken states link assembly and its terminal box were replaced and the surveillance test was successfully completed. The HPCI system was returned to OPERABLE status. Since no corrosion has been observed on similar circuits for Unit 1 HPCI and Unit 1 and Unit 2 RCIC systems, this failure was considered to be an isolated event.

ADDITIONAL INFORMATION

Failed Component Identification:

Component: Sliding States Link

Manufacturer: The States Co.

Previous Similar Events:

LER 50-388/85-015-00 reported an event in which states links were left open.
LER 50-387/86-006-00 reported an unplanned ESF actuation during tightening of a loose states link.

Although there have been previous incidents of corroded states links on non-safety related circuits at Susquehanna, no previous incident has resulted in any required reports to the Commission.

Additionally, there have been several LERs previously issued describing HPCI as being inoperable for a variety of reasons, but none as a result of an inoperable circuit attributed to corrosion.