REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8706120175 DOC. DATE: 87/06/08 NOTARIZED: NO DOCKET #
FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylva 05000387
AUTH. NAME AUTHOR AFFILIATION
HIRT, J. A. Pennsylvania Power & Light Co.
BYRAM, R. G. Pennsylvania Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-019-00: on 870507 HPCI steam supply inboard isolation valve declared inoperable. Caused by inadequately set torque switch setting & miscommunication between worker & foreman. HPCI sys unisolated & restored to alignment. W/870608 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: 1cy NMSS/FCAF/PM. LPDR 2cys Transcripts. 05000387

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD1-2 LA	1	1	PD1-2 PD	1	1
	THADANI, M	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	AEOD/DOA	1	1	AEOD/DSP/ROAB	2	2
	AEOD/DSP/TPAB	1	1	DEDRO	1	1
	NRR/DEST/ADE	1	0	NRR/DEST/ADS	1	0
	NRR/DEST/CEB	1	1	NRR/DEST/ELB	1	1
	NRR/DEST/ICSB	1	1	NRR/DEST/MEB	1	1
	NRR/DEST/MTB	1	1	NRR/DEST/PSB	1	1
	NRR/DEST/RSB	1	1	NRR/DEST/SGB	1	1
	NRR/DLPQ/HFB	1	1	NRR/DLPQ/QAB	1	1
	NRR/DOEA/EAB	1	1	NRR/DREP/RAB	1	1
	NRR/DREP/RPB	2	2	NRR/PMAS/ILRB	1	1
	NRR/PMAS/PTSB	1	1	REG FILE 02	1	1
	RES DEPY GI	1	1	RGN1 FILE 01	1	1
EXTERNAL:	EG&G GROH, M	5	5	H ST LOBBY WARD	1	1
	LPDR	2	2	NRC PDR	1	1
	NSIC HARRIS, J	1	1	NSIC MAYS, G	1	1
NOTES:		3	3			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 46 ENCL 44

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station - Unit One	0 5 0 0 0 3 8 7	1 OF 0 4

TITLE (4) The High Pressure Coolant Injection System Declared Inoperable Due to Improper Torque Switch Setting.

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 5	0 7	8 7	8 7	— 0 1 9	— 0 0	0 6	0 8	8 7		0 5 0 0 0
										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)
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	X 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

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

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On May 9, 1987, at 1052 hours, Operations personnel declared the High Pressure Coolant Injection (HPCI) Steam Supply Inboard Isolation valve inoperable. An analysis postulated that the valve would not fully close in the event of a HPCI steam line break outside containment with a single failure to the outboard isolation valve which prevented it from closing. As a conservative action, Operations personnel declared Limiting Condition for Operation (LCO) 3.6.3. As required by the LCO Action Statement, the HPCI Steam line was isolated. As a result of these actions, the HPCI system became inoperable. This necessitated Operations personnel to declare LCO 3.5.1 on the HPCI system. On May 15, 1987, the Commission granted permission to PP&L to realign the HPCI system to its normal standby alignment. The steamline was reopened at 1803 hours on May 15, 1987.

The torque switch setting was inadequately set during the 2nd Refueling Outage in April, 1986. The cause was a miscommunication between the plant worker performing the work and the foreman.

On May 22, 1987, a modification was installed which allows an operator to bypass the torque switch and manually close the valve. The torque switch setting will be reset to its correct setpoint during the next unit shutdown.

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Susquehanna Steam Electric Station Unit One	0 5 0 0 0 3 8 7	8 7	— 0 1 9	— 0 0	0 2 OF 0 4

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

EVENT DESCRIPTION

On May 9, 1987, at 1052 hours, Operations personnel declared the High Pressure Coolant Injection (HPCI) Steam Supply Inboard Isolation valve inoperable. An analysis postulated that the valve would not fully close in the event of an accident where a double-ended guillotine break of the HPCI steam line occurs and the outboard isolation valve fails to close. As a conservative action, Operations personnel declared Limiting Condition for Operation (LCO) 3.6.3. As required by the LCO Action Statement, the HPCI steam line was isolated. As a result of these actions, the HPCI system (EIIS Code: BJ) became inoperable. This necessitated Operations personnel to declare LCO 3.5.1 on the HPCI system.

ANALYSIS OF EVENT

On May 7, 1987, plant personnel discovered, during a records search pursuant to IE Bulletin 85-03 "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings," that the closing torque switch on the HPCI Steam Supply Inboard Isolation valve was inadequately set to 1 instead of the required setting of 3. A setting of 3 is required to fully close the valve under the maximum dP that the valve would experience.

A Non-Conformance Report (NCR) was initiated when the torque switch setting was found incorrect. After evaluating the impact of the condition, Plant Management acted conservatively and decided to declare the valve inoperable. The penetration was isolated on May 9, 1987 at 1052 hours.

The torque and limit switch logic is such that the torque switch setting does not trip the motor, used to close the valve, until the limit switch is tripped. The limit switch is set to trip when the valve is 97% closed. Once the limit switch has tripped, the motor is controlled by the torque switch. With the torque switch set at 1, the valve would close 100% as long as the dP across the valve did not exceed 140 psid. The maximum dP that the valve may experience is approximately 1000 psid. In situations where the dP is greater than 140 psid the motor would be tripped when the valve is 97% closed.

Nuclear Plant Engineering personnel completed a Safety Assessment which evaluated the impact of the valve closing 97%. The Assessment justified safe operation of the plant with the torque switch set at 1 until the Third Refueling and Inspection Outage, scheduled to begin on September 12, 1987. The justification evaluated the probability of the scenarios which would prevent the valve from fully closing. The total chance of such a failure was determined to be on the same order as a large Loss of Coolant Accident (LOCA). The Assessment further postulated that if the valve closed 97% and the outboard isolation valve stayed open the Two-Hour Site Boundary Dose Limit should not be violated.

On May 14, 1987, PP&L submitted proposed Amendment 97 to License No. NPF-14 to allow continued operation of SSES Unit One until an outage of sufficient duration to revise the setting occurs. Also on this day, PP&L requested permission from the Commission to make the HPCI system available. On May 15, 1987 the commission granted PP&L's request to reopen the HPCI steam line until May 23, 1987, the day LCO 3.5.1 would have expired.

Prior to approving Proposed Amendment 97, the Commission requested PP&L to install a modification which would allow an operator to bypass the torque switch and fully close the valve. This modification and associated procedure changes were completed May 22, 1987, and the Commission approved Amendment 97 on the same day.

The Unit was operating at 100% rated thermal power (RTP) when the torque switch setting was found to be incorrect. It continued to operate at or near 100% RTP throughout the course of evaluating the condition and requesting relief from the Commission.

SAFETY CONSEQUENCE

Although Technical Specifications allow the High Pressure Coolant Injection System to be inoperable for a two week period, PP&L recognizes that it is preferable to restore HPCI to service in as short a period of time as possible. Availability is desirable for mitigation of anticipated plant transients as well as decreasing the Core Damage Frequency (CDF) resulting from scenarios such as ATWS and Station Blackout. It was in this context that PP&L requested permission to reopen the HPCI streamline and the NRC granted the request.

CAUSE

The torque switch setting was set at 1 during the Second Refueling Outage in April of 1986. The cause of the inadequate setting was a miscommunication between the plant worker (non-licensed, utility) performing the work and the foreman.

CORRECTIVE ACTION

As stated previously, the immediate corrective actions included evaluation of the condition followed by the isolation of the HPCI steam line. After permission was received by the Commission, the HPCI system was unisolated and restored to its normal standby alignment.

A history search was conducted on additional HPCI and RCIC valves to determine if a generic problem exists. The result of this investigation showed no other programatic problems. Interviews with plant workers and foreman indicate that the program on how to set torque switches is well understood.

The torque switch setting for the HPCI steam supply inboard isolation valve will be reset to its correct setpoint during the next unit shutdown.

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

REPORTABILITY

This event is being reported to the Commission pursuant to 10CFR50.73(a)(2)(v) & (vii) in that the High Pressure Coolant Injection System, a single train safety system, was declared inoperable due to the inability of an isolation valve to fully close during high dP conditions. The valve was closed as stipulated by the Technical Specification Action Statement. With the valve in the closed position, the HPCI system could not perform its design function.

SIMILAR OCCURRENCES

A review did not identify any previous Licensee Event Reports filed with the Commission which report the inoperability of a Safety System due to an inadequate torque switch setting.

Pennsylvania Power & Light Company
P.O. Box 451 • Berwick, PA 18603-0451 • 717/542-2151

June 8, 1987

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 87-019-00
FILE R41-2
PLAS - 257

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

Attached is Licensee Event Report 87-019-00. This event was determined reportable per 10CFR50.73(a)(2)(v)&(vii), in that the High Pressure Coolant Injection System, a single train safety system, was declared inoperable due to an improper torque switch setting on the inboard isolation valve. The isolation valve was closed as stipulated by the Technical Specification Action Statement. With the valve in the closed position HPCI could not perform its design function.

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