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SUBJECT: LER 88-021-00:on 880922,unit operation w/closing time of MSIV less than Tech Specs min.

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U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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

TITLE (4): Unit Operation with the Closing Time of a Main Steam Isolation Valve less than the Technical Specification Minimum.

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 9	2 2	8 8	8 8	— 0 2 1 —	0 0	1 2	2 0	8 8		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)		50.73(a)(2)(v)		73.71(c)
			20.405(a)(1)(ii)	X	50.36(c)(2)		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	
	AREA CODE	
P.P. Rusanowsky, Power Production Engineer	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

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 September 22, 1988 while planning for an upcoming Unit 1 quarterly surveillance to verify Main Steam Isolation Valve (MSIV) stroke times, it was discovered that nominal versus actual full closed indication limit switch positions had been used in the methodology for determining the minimum MSIV stroke time acceptance criteria. Investigation revealed that during the last performance of the Unit 1 quarterly surveillance, the stroke time of one MSIV would have been slightly less than the minimum required had the actual limit switch position been used in determining the minimum acceptable stroke time. Further investigation determined that this situation had existed periodically on Unit 1 since March 21, 1987 and that this situation had never existed on Unit 2. The cause of this event has been attributed to the use of nominal versus actual settings of the MSIV full closed indication limit switches when the acceptance criteria were established for the MSIV timing surveillance. On September 23, 1988, Unit 1 reactor power was reduced to 80% and the MSIV timing surveillance was successfully performed. Procedural changes are being made to both Unit 1 and Unit 2 Surveillances to prevent recurrence.

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BACKGROUND INFORMATION

Technical Specification 3.4.7 requires two operable Main Steam (EIIS Code: SB) Isolation Valves (MSIV's) per main steam line with closing times greater than or equal to 3 seconds and less than or equal to 5 seconds in Operational Conditions 1, 2 and 3. Conformance to these specified closure times is verified by surveillance SO-184-003, Quarterly MSIV Closure Timing. This surveillance measures the elapsed time from MSIV closure initiation to receipt of the MSIV full closed indication for each MSIV. The acceptance criteria used in this surveillance (greater than or equal to 2.7 seconds and less than or equal to 4.5 seconds) were based on the assumption that the MSIV full closed indication limit switches (LS's) were set at the 90% valve closed position (0.90 x 3 to 5 seconds equals 2.7 to 4.5 seconds).

DESCRIPTION OF EVENT

On September 22, 1988 while reviewing the work activities to be accomplished during a planned Unit 1 power reduction, which included performing SO-184-003, inboard MSIV, HV-141-F022B, was noted to have closed in 2.72 seconds during the last performance of SO-184-003 on June 25, 1988. Concern was expressed that it may not pass its next surveillance due to the fact it was so close to the acceptance criteria of greater than or equal to 2.7 seconds.

Investigation revealed that I&C Surveillance SI-183-325, Eighteen Month Calibration of MSIV Limit Switches, specifies an allowable range of 90% to 100% valve closed for the MSIV full closed indication limit switches. Review of the data recorded during the last performance of SI-183-325 (November 18, 1987) determined that the closed limit switch for HV-141-F022B was set at the 96% valve closed position. From this it was concluded that had the actual 96%, versus the nominal 90%, limit switch position been used to determine the minimum stroke time acceptance criteria (0.96 x 3 equals 2.9 seconds versus 0.90 x 3 equals 2.7 seconds), the closure time of HV-141-F022B during the performance of SO-184-003 on June 25, 1988 would have been slightly less than the minimum required.

A surveillance review concluded that this situation had existed periodically on Unit 1 since March 21, 1987 and that this situation had never existed on Unit 2. All Unit 1 occurrences are tabulated below.

Occurrence	Duration of Operation	MSIV	Closed LS Position (%)	Revised Acceptance Criteria (Sec)	Recorded Closure Time (Sec)
1	03/21/87 to 04/02/87	F022A	98	2.9	2.7
2	06/05/87 to 07/09/87	F028D	99	3.0	2.8
3	07/12/87 to 09/12/87	F028D	99	3.0	2.8
4	02/27/88 to 03/04/88	F028D	96	2.9	2.8
5	03/10/88 to 03/17/88	F028D	96	2.9	2.8
6	06/25/88 to 09/23/88	F022B	96	2.9	2.7

CAUSE OF EVENT

The cause of this event has been attributed to the fact that the nominal versus the actual limit switch positions were used to determine the minimum MSIV stroke time acceptance criteria.

REPORTABILITY

It has been determined that this event is reportable per 10CFR50.73(a)(2)(i)(B) in that Unit 1 operated with the closing time of an MSIV outside the limits of 3 to 5 seconds specified by the plant's Technical Specifications. The reason for the delay in this report is that it was originally determined that this event was not reportable and that a Voluntary Report was appropriate. After further consideration and review with our Senior Resident Inspector, it was conservatively decided to make this event reportable.

ANALYSIS

Per FSAR section 5.4.5.1, the safety design bases for these closure limits are two fold. The MSIVs are designed to close.....

1) fast enough to limit the release of reactor coolant during a design basis accident, and

2) slow enough so that simultaneous isolation of all main steam lines will not induce transients that exceed the nuclear system design limits.

Basis number 1) was not affected as MSIV closure times were always within the 5 second maximum allowed in the safety analysis. Basis number 2), which is used in the accident analyses for reactor pressure transients, assumes all four main steam lines are isolated within 3 seconds. In each occurrence tabulated above, only one of the four main steam lines isolated slightly faster while the other three remained open for at least 3 seconds. As a result of this event, reanalyses of the reactor pressure transients were conducted by the fuel vendor. These analyses, which were completed on November 17, 1988, assumed all four main steam lines isolated within two seconds and concluded that the additional effects due to the faster closure time were insignificant.

CORRECTIVE ACTIONS

Due to the uncertainty that existed, the Plant Operations Review Committee was requested to address the operability of HV-141-F022B. A conservative decision was made to declare HV-141-F022B inoperable and MSIV Technical Specification Limiting Condition for Operation (LCO) 3.4.7 was entered at 2240 on September 22, 1988. The acceptance criteria in SO-184-003 were revised to take the actual positions of the MSIV full closed indication limit switches from the last performance of SI-183-325 into account. Reactor power was then reduced to 80% and SO-184-003 was performed successfully on all Unit 1 MSIVs. The LCO was subsequently cleared at 0130 on September 23, 1988.

SO-184-003 and SI-183-325 are in the process of being revised to ensure that the acceptance criteria in SO-184-003 are reviewed and changed if necessary each time SI-183-325 is performed. The corresponding Unit 2 Surveillances are being similarly revised.

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable.

Previous Similar Events: None identified.

Pennsylvania Power & Light Company
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December 8, 1988

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 88-021-00
FILE R41-2
PLAS-345

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

Attached is Licensee Event Report 88-021-00. This event was determined reportable per 10CFR50.73. The reason for the delay in this report is that it was originally determined that this event was not reportable and that a Voluntary Report was appropriate. After further consideration and review with our Senior Resident Inspector, it was conservatively decided to make this event reportable.

R.G. Byram
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PPR/mjm

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