NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 06/30/2001

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station - Unit 2	05000388	1 OF 3

TITLE (4)
Failed Acoustic Monitor

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 NAME	DOCKET NUMBER
										05000
6	13	98	98	-- 008 --	00	7	13	98	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	1
POWER LEVEL (10)	50

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
C. T. Coddington - Senior Engineer, Licensing	717 / 542-3294

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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 15 single-spaced typewritten lines) (16)

On June 13, 1998, at 1239 hours, with Unit 2 in Condition 1 (Power Operation) at 50% Power, the Unit 2 Control Room received an open Main Steam Relief Valve (MSRV) (EIIS Code: SB) alarm for the 'J' MSRV. The acoustic monitor for the 'J' MSRV indicated that the valve was full open. The Control Room operators, using guidance from the appropriate off-normal (ON) procedure, determined that the 'J' MSRV was not open. The 'J' MSRV acoustic monitor was declared inoperable and Technical Specification 3.3.7.5, ACTION 80 and Technical Specification 3.4.2, ACTION c, were entered. Repair to the MSRV acoustic monitor required a containment entry. Enforcement Discretion was requested by PP&L, Inc. and granted by the NRC for continued operation until an outage of sufficient length to affect repairs, not to exceed the Unit 2 9th Refuel outage, scheduled for Spring 1999. On June 22, 1998, Unit 2 was shutdown to repair a leak in the Condensate System. During this shutdown, the 'J' MSRV acoustic monitor was repaired. This event was determined to be reportable per 10CFR73(a)(2)(i)(B), in that Susquehanna SES Unit 2 had been granted Enforcement Discretion to continue to operate in Condition 1 with an inoperable MSRV acoustic monitor. The most likely cause of this event was an intermittent short in the cabling inside containment. The 'J' MSRV acoustic monitor components inside containment were replaced with upgraded parts. The MSRV acoustic monitor components inside containment in both units will be replaced with the improved models. The investigation into the definitive cause of the failure of the 'J' MSRV acoustic monitor will be completed. Operation of Unit 2 with the 'J' MSRV acoustic monitor inoperable did not result in any compromise to the health and safety of the public and/or plant personnel.

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

EVENT DESCRIPTION

On June 13, 1998, at 1239 hours, with Unit 2 in Condition 1 (Power Operation) at 50% Power, the Unit 2 Control Room received an open Main Steam Relief Valve (MSRV) (EIIS Code: SB) alarm for the 'J' MSRV. The acoustic monitor for the 'J' MSRV indicated that the valve was full open. The Control Room operators (utility; licensed), using guidance from the appropriate off-normal (ON) procedure, determined that the 'J' MSRV was not open. Parameter trends used to conclude that this MSRV was not open included: MSRV tailpipe temperature, suppression pool temperature, suppression pool level, main generator megawatts, reactor pressure, reactor water level, and feedwater flow-steam flow mismatch. All other MSRV acoustic monitors were operable.

Significant effort was expended in troubleshooting this condition. All components exterior to the drywell were tested and ruled out as the cause of the failure of the 'J' MSRV acoustic monitor. As a result of this investigation, the failed component was determined to be inside the containment.

As a result of the alarm, the 'J' acoustic monitor was declared inoperable, and Limiting Conditions for Operation (LCO) 3.4.2, ACTION c and 3.3.7.5 ACTION 80 were entered. Technical Specification 3.3.7.5 ACTION 80 requires the acoustic monitor to be restored to service within 48 hours or be in Hot Shutdown within the next 12 hours.

In order to repair the MSRV acoustic monitor, a containment entry was necessary. This would require a unit shutdown and the containment to be de-inerted.. Enforcement Discretion was requested and verbally granted by the NRC on June 15, 1998 (granted in writing June 16, 1998) for continued operation until an outage of sufficient length to affect repairs, not to exceed the Unit 2 9th Refuel outage, scheduled for Spring 1999. On June 22, 1998, Unit 2 was shutdown to repair a leak in the Condensate System. During this shutdown, the 'J' MSRV acoustic monitor was repaired.

CAUSE OF EVENT

The most likely cause of this event was an intermittent short in the cabling inside containment. This short caused the charge converter to saturate and produce a full open indication. The investigation is continuing into the cause of the failure, including equipment failure analysis. If a cause of failure different than that above is determined for this event, a supplement to this Licensee Event Report will be issued.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR73(a)(2)(i)(B), in that Susquehanna SES Unit 2 was granted Enforcement Discretion to continue to operate in Condition 1 with an inoperable MSRV acoustic monitor. Technical Specifications 3.3.7.5 and 3.4.2 require all MSRV acoustic monitors to be operable in Conditions 1 and 2. Enforcement Discretion for continued operation was granted June 15, 1998, allowing the operation of the unit beyond the time limits specified in the ACTION statements of the applicable LCOs 3.3.7.5 and 3.4.2, which would expire on June 15, 1998 and June 20, 1998 respectively.

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The ability of the plant to safely shutdown was never compromised. All of the Unit 2's MSRVs were operable and were closed. The MSRV acoustic monitor provides no automatic initiation or isolation function, but only provides valve position indication. The 'J' MSRV was determined to be closed based on alternate indications, all of which indicated no abnormal conditions for this equipment. The following parameter trends were observed, per the off-normal procedure, to assure the valve was closed: MSRV tailpipe temperature, suppression pool temperature, suppression pool level, loss of generator megawatts, decreasing reactor pressure, changing reactor water level, and indicated feedwater flow greater than steam flow. Also, failure of the acoustic monitor will not affect operation of the MSRVs, mask the symptoms of an open MSRV, prevent the operators from identifying an open MSRV, increase the probability of a stuck open MSRV, affect the consequences of an open MSRV, or cause any analyzed failure or misoperation of plant equipment or an engineered safety feature. As such, operation of Unit 2 with the 'J' MSRV acoustic monitor inoperable did not result in any compromise to the health and safety of the public and/or plant personnel.

In accordance with the guidelines provided in NUREG-1022, Revision 1, Section 5.1.1, the required submission date for this report was determined to be July 13, 1998.

CORRECTIVE ACTIONS

Corrective actions that have been completed include:

- Modification of the 'J' MSRV acoustic monitor circuitry including replacement of the accelerometer, charge converter and connecting cabling inside containment with upgraded components.

Corrective actions that will be completed:

- Complete analysis of equipment to attempt to determine a definitive cause for the failure of the 'J' MSRV acoustic monitor.
- The MSRV acoustic monitor components inside the containment on both Units 1 and 2 will be replaced with the improved models. The Unit 1 MSRV acoustic monitor components are presently being replaced with the improved models during a current forced outage on Unit 1.
- Submit a supplement to this Licensee Event Report if the cause of the failure after further analysis is determined to be other than an intermittent short in the cabling.

ADDITIONAL INFORMATION

Past Similar Events: Docket No. 50-387 LER 97-020-00
Docket No. 50-388 LER 94-003-00

Failed Component: Short in cabling