

# PRIORITY 1

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ACCESSION NBR: 9408010252    DOC. DATE: 94/06/25    NOTARIZED: NO    DOCKET #  
FACIL: 50.7388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania    05000388  
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RECIP. NAME    RECIPIENT AFFILIATION

SUBJECT: LER 94-003-01: on 940121, acoustic monitor for "S" MSRV was declared inoperable & TS. Caused by faulty charge converter. Charge converter was replaced & successfully tested.

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June 25, 1994

U.S. Nuclear Regulatory Commission  
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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 94-003-01  
FILE R41-2  
PLAS - 608

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

Attached is Licensee Event Report 94-003-01. This is an update to Licensee Event Report 94-003-00 submitted on 2/22/94. That report was made pursuant to 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 2 was in a condition prohibited by the Technical Specifications when Unit 2 entered condition 1 while the acoustic monitor for the 'S' Main Steam Relief Valve was inoperable. Technical Specifications 3.3.7.5 and 3.4.2 require all Main Steam Relief Valve acoustic monitors to be operable in condition 1 and 2. Technical Specification 3.0.4 prohibits entry into an operational condition or other specified condition when the conditions for the Limiting Conditions for Operation are not met and the associated action requires a shutdown if they are not met within a specified time interval. Prior to entering Condition 1, a discretionary enforcement from the above Technical Specification requirements was approved. A subsequent amendment to the applicable Technical Specifications was approved by the NRC to allow operation of Unit 2 while the 'S' acoustic monitor was inoperable. The amendment remained in effect until the Unit 2 sixth refueling and inspection outage. The acoustic monitor has subsequently been repaired.

*H.G. Stanley*

H.G. Stanley  
VP - Nuclear Operations

JJM/mjm

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LICENSEE EVENT REPORT (LER)

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) <b>Susquehanna Steam Electric Station - Unit 2</b>	DOCKET NUMBER (2) <b>0   5   0   0   0   3   8   8</b>	PAGE (3) <b>1 OF 0   4</b>
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Operation Prohibited By Technical Specification 3.0.4

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)
01	21	94	94	003	01	07	25	94			0   5   0   0   0

OPERATING MODE (9) <b>2</b>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) <b>0   0   0</b>	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)						
	20.405(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)						
	20.405(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(vii)(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)(ix)								

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME <b>Joseph J. Meter - Power Production Engineer</b>		AREA CODE <b>7117</b>	<b>514121-1181713</b>

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		
				N							

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 January 21, 1994, at 0605 hours with Unit 2 starting up in Condition 2 at 0% power, the acoustic monitor for the 'S' MSRVR was declared inoperable and Technical Specification 3.3.7.5 action 80b and 3.4.2 action c were entered. Repair of the monitor required a primary containment entry and due to weather related emergency circumstances, a discretionary enforcement from the applicable Technical Specifications was granted. Startup of Unit 2 then continued. Even though NRC permission was granted, this event is reportable per 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 2 was in a condition prohibited by the Technical Specifications when Unit 2 entered condition 1 while the acoustic monitor was inoperable. The cause of the acoustic monitor failure was determined to be a faulty charge converter. Operation of Unit 2 with the 'S' MSRVR acoustic monitor inoperable did not create a significant degradation in the Station's ability to protect the health and safety of the public and/or plant personnel. The monitor provides valve position indication only. There are alternate indications and symptoms discernible by control room personnel for determining MSRVR position.

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

DESCRIPTION OF EVENT

On January 21, 1994, at 0605 hours with Unit 2 starting up in Condition 2 at 0% power, the Unit 2 control room received a spurious open Main Steam Relief Valve (MSRV, EIIS Code: SB) alarm for the 'S' MSRV. The acoustic monitor for the 'S' MSRV indicated that the MSRV was open. Control room Operators (Licensed, Utility) observed that all other indications showed that the MSRV was closed. Reactor pressure was stable at approximately 165 psig, the suppression pool temperature was stable at approximately 81 degrees F, and the 'S' MSRV tailpipe temperature was 135 degrees F. The acoustic monitor for the 'S' MSRV was declared inoperable and Technical Specification 3.3.7.5 action 80b and 3.4.2 action c were entered. The Instrumentation and Controls (I&C) work group was contacted to investigate the acoustic monitor. The open indication of the MSRV was subsequently cleared.

The investigation showed that the acoustic monitor charge converter bias voltage was abnormally low at approximately 8 VDC while the vendor specified range is greater than 10 VDC. Repair of the charge converter required a Unit shutdown, containment deinerting and entry. Due to weather related emergency circumstances, continued startup of Unit 2 was desired and a discretionary enforcement from the applicable Technical Specification requirements was verbally requested and orally granted by the NRC on 1/21/94. Unit 2 then continued its startup and Condition 1 was reached at 2300 hours on 1/21/94.

Although discretionary enforcement from the applicable Technical Specifications was granted prior to continued startup, this event is reportable per 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 2 was in a condition prohibited by the Technical Specifications when Unit 2 entered condition 1 while the acoustic monitor for the 'S' Main Steam Relief Valve was inoperable. Technical Specifications 3.3.7.5 and 3.4.2 require all Main Steam Relief Valve acoustic monitors to be operable in condition 1 and 2. Technical Specification 3.0.4 prohibits entry into an operational condition or other specified condition when the conditions for the Limiting Conditions for Operation are not met and the associated action requires a shutdown if they are not met within a specified time interval.

CAUSE OF EVENT

The cause of the 'S' MSRV acoustic monitor failure was determined to be a faulty charge converter. The vendor of the charge converter specifies a bias voltage of greater than 10 VDC. The as found bias voltage was approximately 8 VDC on 1/21/94. The same charge converter bias voltage was measured on 5/24/93 and was approximately 17 VDC which indicated the charge converter was faulty on 1/21/94. There were no generic implications associated with the failure of this charge converter.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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

The cause for the need to continue Unit startup with an inoperable MSRV acoustic monitor was that on 1/19/94 a State of Emergency in the Commonwealth of Pennsylvania was declared due to low electrical supply. As of 1/21/94, Unit 1 was completing refueling outage activities and Unit 2 was starting up from a scram that had occurred at 0150 hours on 1/20/94. Neither of the Susquehanna Units were generating power but rather were consuming power to operate plant pumps and other equipment. In light of the system power shortage coupled with the minimal safety impact the inoperable acoustic monitor posed to the station, the enforcement discretion from the applicable Technical Specifications was requested and subsequently granted.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 2 was in a condition prohibited by the Technical Specifications when Unit 2 entered condition 1 while the acoustic monitor for the 'S' Main Steam Relief Valve was inoperable. Technical Specifications 3.3.7.5 and 3.4.2 require all Main Steam Relief Valve acoustic monitors to be operable in condition 1 and 2. Technical Specification 3.0.4 prohibits entry into an operational condition or other specified condition when the conditions for the Limiting Conditions for Operation are not met and the associated action requires a shutdown if they are not met within a specified time interval. Even though enforcement discretion from the applicable Technical Specification was granted, since the 'S' MSRV acoustic monitor was discovered to be inoperable while Unit 2 was in condition 2 and the Unit entered condition 1, Technical Specification 3.0.4 was not met in this application.

Operation of Unit 2 with the 'S' MSRV acoustic monitor inoperable did not create a significant degradation in the Station's ability to protect the health and safety of the public and/or plant personnel. There are no automatic actuations initiated by the MSRV acoustic monitoring system. The monitors provide valve position indication only. Each of the MSRV tailpipes, including the 'S', are also equipped with operable temperature sensors to detect weeping, cycling, or stuck-open valves. In addition, there are alternate indications and symptoms discernible by control room personnel for determining MSRV position. These alternate indications and symptoms are listed in an operations off normal procedure ON-283-001, "Stuck Open Safety Relief Valve". One of the indicators listed is suppression pool temperature and in the case of the 'S' MSRV, two suppression pool temperature elements are located in close proximity to the discharge line and would detect an elevated temperature if the 'S' MSRV were open.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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

CORRECTIVE ACTION

Upon receipt of the spurious 'S' MSR/V open alarm, Control Room Operators observed that all other indications showed that the MSR/V was closed. Although the open indication subsequently cleared, the acoustic monitor for the 'S' MSR/V was declared inoperable and Technical Specification 3.3.7.5 action 80b and 3.4.2 action c were entered. The Instrumentation and Controls (I&C) work group was contacted to investigate the acoustic monitor. The investigation showed that the acoustic monitor charge converter bias voltage was abnormally low at approximately 8 VDC while the vendor specified range is greater than 10 VDC. The charge converter was replaced, successfully tested and declared operable during the Unit 2 6th Refueling and Inspection Outage.

Due to weather related emergency circumstances, continued startup of Unit 2 was needed and a primary containment entry was not made. Since an inoperable MSR/V acoustic monitor requires an eventual Unit shutdown, discretionary enforcement from the applicable Technical Specification requirements was verbally requested and orally granted on 1/21/94.

An amendment to Unit 2 Technical Specifications Number 100 was submitted and approved as a follow up to the discretionary enforcement granted on 1/21/94.

ADDITIONAL INFORMATION

Failed Component Identification:

Component - Charge Converter.

Manufacturer - Tec. Corp.

Model No. - 504B

Past Similar Events:

A review of past Licensee Event Reports (LERs) for the station identified no previous LERs involving failure of MSR/V acoustic monitors.