

PRIORITY 1

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REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9511140145 DOC.DATE: 95/11/07 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylvania 05000388
 AUTH.NAME AUTHOR AFFILIATION
 WEHRY, R.R. Pennsylvania Power & Light Co.
 STANLEY, H.G. Pennsylvania Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 95-001-01: on 950130, "B" channel was declared inoperable.
 Caused by faulty detector or cable inside primary
 containment. Revised surveillance procedure for excore
 monitoring sys.W/951107 ltr.

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 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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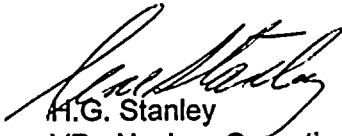
November 7, 1995

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 95-001-01
PLAS - 653 FILE R41-2

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

Attached is Licensee Event Report 95-001-01. This report is a supplement to Licensee Event Report 95-001-00, which 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 the Excore Neutron Flux channel 'B' log power range indicator was declared inoperable and could not be restored within its Limiting Condition for Operation (LCO) action time. Not restoring the instrument within the LCO action time required the shutdown of the unit per the Technical Specifications. A Notice of Enforcement Discretion was granted by the NRC on February 6, 1995 to avoid an undesirable plant shutdown and to avoid any potential safety consequences and operational risks which might be inappropriate for the current plant condition. Subsequently, in accordance with analysis contained in BWROG NEDO-31558, PP&L determined that the existing Neutron Monitoring System is adequate to perform the post-accident neutron flux monitoring function. The Technical Specification Bases and Final Safety Analysis Report were revised accordingly and the Excore Neutron Flux systems have been removed from service on Susquehanna Units 1 and 2.


H.G. Stanley
VP - Nuclear Operations

RRW/dmd

cc: Mr. T. T. Martin
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Ms. Maitri Banerjee
Sr. Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 35
Berwick, PA 18603-0035

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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) Susquehanna Steam Electric Station - Unit 2	DOCKET NUMBER(2) 0 5 0 0 0 3 8 8 1	PAGE (3) OF 0 4
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TITLE (4)
Operation Prohibited By The Technical Specification (Inoperable Excore 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 NAMES		DOCKET NUMBER(S)
0 1	3 0	9 5	9 5	0 0 1	0 1	1 1	0 7	9 5			0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(v)(A)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 50.73(1)(2)(v)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(v)								

(LICENSEE CONTACT FOR THIS LER (12))

NAME Richard R. Wehry - Project Engineer - Nuclear Licensing	TELEPHONE NUMBER AREA CODE: 7 1 7 5 4 2 - 3 6 6 4
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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)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 30, 1995 at 2130 hours, with Unit 2 in Condition 1 at 100% power, the Excore Neutron Flux Channel 'B' log power range indicator was found to be reading upscale. The "B" channel was declared inoperable and LCO 3.3.7.5 Action statement was entered. PP&L completed all reasonable efforts to identify the cause and correct the condition to enable restoring the indicator to OPERABLE status, including obtaining guidance from the original equipment manufacturer. However, these efforts were unsuccessful in correcting the situation before a shutdown of Unit 2 would be required. A Notice of Enforcement Discretion was granted by the NRC on February 6, 1995 at 1500 hours to avoid the shutdown and any accompanying potential safety consequences or operational risks which might be inappropriate for the current plant condition. Although testing and component replacement did not correct the condition, it provided credible evidence that the root cause was a faulty detector or a cable / connection problem inside primary containment. An emergency Technical Specification change request was submitted (PLA-4263) to allow continued operation with one excore instrument inoperable and, should the remaining channel become inoperable, to allow continued operation for 7 days to restore the inoperable channel. The NRC granted an exigent Amendment on March 1, 1995. This change to the Technical Specifications was in effect until the first unit shutdown which allowed for containment entry of sufficient duration to evaluate and correct the condition, not to exceed the seventh refueling outage scheduled to begin September 1995.

Subsequently, in accordance with analysis contained in BWROG NEDO-31558, PP&L determined that the existing Neutron Monitoring System is adequate to perform the post-accident neutron flux monitoring function. The Technical Specification Bases and Final Safety Analysis Report were revised accordingly (ref. PLA-4301). The Excore Neutron Flux System has been removed from service on Susquehanna Units 1 and 2.

NRC FORM 366a (6-89)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED OMB NO. 3159-0104 EXPIRES: 4/30/92 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.
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		

FACILITY NAME (1) Unit 2 Susquehanna Steam Electric Station	DOCKET NUMBER (2) 0 5 0 0 0 3 8 8	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">LER NUMBER (6)</th> <th colspan="3" style="text-align: center;">PAGE (3)</th> </tr> <tr> <th style="width:10%;">YEAR</th> <th style="width:10%;">SEQUENTIAL NUMBER</th> <th style="width:10%;">REVISION NUMBER</th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> <tr> <td style="text-align: center;">9 5</td> <td style="text-align: center;">— 0 0 1</td> <td style="text-align: center;">— 0 1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">OF</td> <td style="text-align: center;">4</td> <td></td> <td></td> <td></td> </tr> </table>	LER NUMBER (6)						PAGE (3)			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER							9 5	— 0 0 1	— 0 1	2	OF	4			
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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 30, 1995 at 2130 hours, with Unit 2 in Condition 1 at 100% power, the Excore Neutron Flux Channel 'B' log power range indicator (EIS Code: IG) was found to be reading upscale. The 'B' channel was declared inoperable and Technical Specification Limiting Condition for Operation (LCO) 3.3.7.5 Action statement was taken.

CAUSE OF EVENT

PP&L completed all reasonable efforts to identify the cause of the inoperable condition, including obtaining troubleshooting guidance from the original equipment manufacturer (OEM). However, all testing and component replacement did not result in the correction of the inoperable condition, but provided credible evidence that the root cause of this inoperable condition was a faulty detector or a cable / connection problem inside primary containment. A shutdown of Unit 2 which allowed for containment entry of sufficient duration to properly evaluate and correct the impaired condition would have been required to ascertain the root cause for the condition.

No root cause analysis for the failure of the Excore Neutron Flux Channel will be performed, since PP&L has determined (in accordance with BWROG NEDO-31558) that the existing Neutron Monitoring System is adequate to perform the post-accident neutron flux monitoring function, and has removed the Excore Neutron Flux System from service on Susquehanna Units 1 and 2.

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 the Excore Neutron Flux Channel 'B' log power range indicator was inoperable and could not be restored within 7 days as required by Technical Specification LCO 3.3.7.5, which would require a unit shutdown. Enforcement Discretion was granted by the NRC at 1500 hours on February 6, 1995 to exercise discretionary enforcement from compliance with LCO 3.3.7.5 to avoid an undesirable plant shutdown as a result of having to comply with the license condition and to avoid any potential safety consequences and operational risks which might be inappropriate for the current plant condition. An emergency Technical Specification change request was submitted (PLA-4263) to allow continued operation with one excore instrument inoperable and, should the remaining channel become inoperable, to allow continued operation for 7 days to restore the inoperable channel. The NRC granted an exigent Amendment on March 1, 1995.

This condition did not result in any safety consequences or compromise to public health or safety. The ex-core monitoring system provided the neutron flux monitoring requirements of Regulatory Guide (RG) 1.97. It was comprised of two redundant and separate channels, and each channel had two detectors which were located inside containment outside the biological shield. This system provided only indication and alarm functions. For the Safety Parameter Display System (SPDS) it provided log power input, and for the plant computer, it provided log power and low power countrate inputs. The control room ex-core monitoring readouts indicated log power, low power countrate and period. In addition, the countrate information was also displayed at the Excore Neutron Shutdown Monitor.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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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)

The post-accident neutron flux monitoring function at SSES can be accomplished by the source range monitors (SRMs), the intermediate range monitors (IRMs), the local power range monitors (LPRMs), and the average power range monitors (APRMs) (all EIS Code: IG). The APRMs and the LPRMs receive their power from the reactor protection system bus (EIS Code: JC) and the IRMs and SRMs receive power from 24 volt DC power supplies (EIS Code: EJ). Also, the SRMs and APRMs have input to the SPDS.

The Boiling Water Reactor Owner's Group (BWROG) issued a report, NEDO-31558, "Position on NRC Regulatory Guide 1.97, Revision 3, Requirements for Post-Accident Neutron Monitoring System," dated April 1, 1988, which provided alternate requirements for post-accident instrumentation to those stated in RG 1.97. The NRC staff's evaluation indicated that the staff had evaluated the BWROG's scenarios to determine the consequences of neutron flux monitoring unavailability and concluded that the failure of this instrument will not prevent the operator from determining appropriate reactor power levels. This is because multiple alternate parameter status will be available from which reactor power may be inferred and from which the operator will be able to make operational decisions.

CORRECTIVE ACTIONS

PP&L completed all reasonable efforts to identify the cause and correct the inoperable condition to enable restoring the channel to OPERABLE status, including obtaining troubleshooting guidance from the original equipment manufacturer (OEM). The testing and component replacement did not result in the correction of the inoperable condition, but did provide credible evidence that the root cause of this inoperable condition was a faulty detector or a cable / connection problem inside primary containment. An entry into the Unit 2 primary containment would have been required to identify the root cause and to effect its repair and return to OPERABLE status.

Enforcement Discretion from compliance with Technical Specification 3.3.7.5, and hence, an undesirable plant shutdown, was granted by the NRC on February 6, 1995, to allow Unit 2 to operate until the next forced shutdown which allows for containment entry of sufficient duration to evaluate and repair the condition, not to exceed the seventh refueling outage, scheduled for September 1995. An emergency request for a change to Unit 2 Technical Specifications pursuant to the enforcement discretion was submitted to the NRC on February 7, 1995 (PLA-4263). The NRC granted an exigent Amendment on March 1, 1995.

Three additional compensatory actions were implemented:

1. An inventory to ensure on-site availability of parts that could potentially be required for corrective maintenance on the "A" Channel was completed.
2. The surveillance procedure for the Excore monitoring system was revised to be consistent with the Enforcement Discretion.
3. Operator training was conducted on the current situation (inoperable "B" channel) and to re-emphasize the availability of the alternate means of reactivity indication.

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)		
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		9 5 —	0 0 1 —	0 1	4	OF	4			

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

Subsequently, in accordance with the analysis contained in BWROG NEDO-31558, PP&L determined that the existing Neutron Monitoring System is adequate to perform the post-accident neutron flux monitoring function. The Technical Specification Bases and Final Safety Analysis Report were revised accordingly (ref. PLA-4301).

The Excore Neutron Flux System has been removed from service on Susquehanna Units 1 and 2.

A Technical Specification change request has been submitted (PLA-4346) to restore the Unit 2 Technical Specifications consistent with the requirements for the post-accident neutron flux monitoring function which were in place prior to the exigent Amendment granted by the NRC on March 1, 1995.

No further actions, with respect to the Excore Neutron Flux System, nor any additional supplemental information, is planned.

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable.

Previous Similar Events: There have been no previous LERs for the station reporting failures of Excore Neutron Flux monitors.