

PRIORITY 1

(ACCELERATED RIDS PROCESSING)

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9507070479 DOC. DATE: 95/07/03 NOTARIZED: NO DOCKET #
 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv 05000387
 AUTH. NAME AUTHOR AFFILIATION
 KICHLINE, R.D. Pennsylvania Power & Light Co.
 STANLEY, H.G. Pennsylvania Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 95-009-00: on 950602, B reactor recirculation pump motor-generator set stops exceeded criteria of TS 4.4.1.1.1.2. Set stops reset below TS limits. W/950703 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: 05000387

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Pennsylvania Power & Light Company

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July 3, 1995

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 387/95-009-00
PLAS- 639 FILE R41-2

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

Attached is Licensee Event Report 387/95-009-00. This report is being made pursuant to 10CFR50.73(a)(2)(i)(B), in that Susquehanna Unit 1 was in a condition prohibited by the plant's Technical Specifications as a result of entry into LCO ACTION 3.0.3 upon determination that the Unit 1 "B" reactor recirculation pump's motor-generator set stops exceeded the criteria of Technical Specification 4.4.1.1.1.2.


H. G. Stanley
VP - Nuclear Operations

Attachment

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 1	DOCKET NUMBER(2) 0 5 0 0 0 3 8 7 1	PAGE (3) OF 0 4
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TITLE (4)
Condition Prohibited by the Plant's Technical Specifications (LCO 3.0.3)

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 6	0 2	9 5	9 5	0 0 9	0 0	0 7	0 3	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) 0 9 5	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<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)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(1)(2)(vii)(B)							
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)	<input type="checkbox"/> 50.73(a)(2)(x)							

(LICENSEE CONTACT FOR THIS LER (12))

NAME Robert D. Kichline - Project Licensing Specialist	AREA CODE 7 1 7	TELEPHONE NUMBER 5 4 2 - 3 2 8 9
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS

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)

At 0428 hours on June 2, 1995, with Unit 1 in Condition 1 (Power Operation) at 95% power during power ascension testing as part of the Unit 1 power uprate program, a determination was made that the "B" reactor recirculation pump's motor-generator (M-G) set stops exceeded the criteria of Technical Specification 4.4.1.1.1.2. This determination was based upon results of a procedure used to calculate reactor core flow which yielded a calculated reactor core flow which was greater than the indicated core flow. The difference between the calculated and the indicated reactor core flow exceeded the calculation procedures' acceptance criteria. The difference between the calculated and indicated reactor core flow was added to the value of reactor core flow corresponding to the Unit 1 reactor recirculation pump M-G set A and B electrical and mechanical stops. The "A" reactor recirculation pump M-G set stop settings remained within the Technical Specification limits. When added to the "B" reactor recirculation pump, electrical and mechanical M-G set stop settings, the difference resulted in the settings exceeding Technical Specification 4.4.1.1.1.2. Technical Specification 4.4.1.1.1.2 has no action statement associated with it, therefore, Technical Specification LCO 3.0.3 was entered. Indicated reactor core flow did not exceed the operating reactor core flow limit, nor did the calculated reactor core flow exceed the analyzed limit in the core reload analysis. Upon determination of the M-G set stop setting discrepancy, the "B" reactor recirculation pump M-G set stops were reset to be within the Technical Specification requirements. Additional actions include assuring that the procedure used to calculate reactor core flow is performed at referenced conditions when being used to set reactor recirculation pump M-G set stops.

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 1	DOCKET NUMBER (2) 0 5 0 0 0 3 8 7	LER NUMBER (6)						PAGE (3)					
		YEAR	SEQUENTIAL NUMBER			REVISION NUMBER							
Susquehanna Steam Electric Station		9	5	—	0	0	9	—	0	0	2	OF	4

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

DESCRIPTION OF EVENT

At 0428 hours on June 2, 1995, with Unit 1 in Condition 1 (Power Operation) at 95% power during power uprate power ascension testing, a determination was made that the "B" reactor recirculation (Reactor Recirculation; EISS Code: AD) pump's motor-generator (M-G) set stop settings exceeded the criteria of Technical Specification 4.4.1.1.1.2. Technical Specification 4.4.1.1.1.2 has no action statement associated with it, therefore, Technical Specification LCO ACTION 3.0.3 was entered.

The determination that the "B" reactor recirculation pump electrical and mechanical M-G set stops were set beyond Technical Specification limits was derived from the results of a Reactor Engineering (Operations) procedure used to calculate reactor core flow. This procedure calculated reactor core flow to be greater than instrument indicated core flow. This calculated reactor core flow/indicated reactor core flow difference was greater than the acceptance criteria of the procedure used to calculate reactor core flow. Since the calculated reactor core flow/indicated reactor core flow difference was outside the acceptance criteria of the procedure used to calculate reactor core flow, a determination was made to add the difference between the values to the value of reactor core flow used to set the reactor recirculation pump M-G set stop settings. When this difference between the calculated reactor core flow and the indicated reactor core flow was added to the "B" reactor recirculation pump M-G set stop settings, the stop settings exceeded the Technical Specification limits. The "A" reactor recirculation pump M-G set stop settings remained within the Technical Specification limits. Additionally, indicated reactor core flow did not exceed the operating reactor core flow limit, nor did the calculated reactor core flow exceed the analyzed limit in the core reload analysis.

CAUSE OF EVENT

A reactor engineering procedure used to calculate reactor core flow in conjunction with the Unit 1 power uprate power ascension program was run at other than standard reactor core flow conditions. This information was then used to calibrate indicated reactor core flow and set the recirculation pump M-G set stops. Power ascension was being performed in accordance with the power ascension test program, and the procedure to calculate reactor core flow was again run at other than standard reactor core flow conditions.

At this point it was determined that the calculated reactor core flow was greater than the indicated reactor core flow and outside the acceptance criteria of the calibration procedure. The difference between the calculated and indicated reactor core flow is attributed to the performance of the reactor core flow calculation, per the power uprate program power ascension test schedule, at other than the standard

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

FACILITY NAME (1) Unit 1 Susquehanna Steam Electric Station	DOCKET NUMBER (2) 0 5 0 0 0 3 8 7	<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%;">REVISION NUMBER</th> <th style="width:10%;">REVISION NUMBER</th> <th style="width:10%;">REVISION NUMBER</th> <th style="width:10%;">PAGE</th> <th style="width:10%;">OF</th> <th style="width:10%;">PAGE</th> </tr> <tr> <td style="text-align: center;">9 5</td> <td style="text-align: center;">— 0 0 9</td> <td style="text-align: center;">— 0 0</td> <td style="text-align: center;">— 0 0</td> <td style="text-align: center;">— 0 0</td> <td style="text-align: center;">— 0 0</td> <td style="text-align: center;">3</td> <td style="text-align: center;">OF</td> <td style="text-align: center;">4</td> </tr> </table>	LER NUMBER (6)						PAGE (3)			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	REVISION NUMBER	REVISION NUMBER	REVISION NUMBER	PAGE	OF	PAGE	9 5	— 0 0 9	— 0 0	— 0 0	— 0 0	— 0 0	3	OF	4
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

reactor core conditions. The reactor core flow calculation was performed at a plateau specified per the power uprate program power ascension test schedule to assess general reactor core conditions prior to proceeding on to the next power ascension test plateau. The calculation was not intended to be used as a formal reactor core flow calibration. However, since the results of the calculation showed that calculated reactor core flow was greater than indicated reactor core flow, the concern was raised that the reactor recirculation pump M-G set stop settings may have been set non-conservatively since indicated reactor core flow is utilized as the basis for setting the stops. To assure conservatism, the difference between the calculated and indicated core flow values was added to the reactor recirculation pumps' M-G set stop settings. The addition of the differential value caused the "B" reactor recirculation pump's electrical and mechanical M-G set stop settings to exceed the criteria of Technical Specification 4.4.1.1.1.2. Technical Specification 4.4.1.1.1.2 has no corresponding action statement. A review of the Technical Specifications determined that LCO ACTION 3.0.3 was the appropriate action statement to be entered since the "B" reactor recirculation pump M-G set stop settings were in a condition prohibited by the Technical Specifications.

No similar problem occurred on Unit 2, which is operating at uprated power, because the calculated reactor core flow performed for the purpose of setting the reactor recirculation pump M-G set stops, was less than the indicated reactor core flow. This calculated reactor core flow value compared to the indicated reactor flow value was within the acceptance criteria of the procedure used to calculate reactor core flow, and indicates a conservative flow bias.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications, in that Technical Specification LCO ACTION 3.0.3 was entered on Unit 1, based on a determination that the "B" reactor recirculation pump M-G set stops exceeded the criteria of Technical Specification 4.4.1.1.1.2. A review of the Technical Specifications determined that LCO ACTION 3.0.3 was the appropriate action statement to be entered since Technical Specification 4.4.1.1.1.2 has no corresponding action statement. Evaluation of other potentially applicable Technical Specification sections were determined to be non-applicable, or would have placed the plant in a condition that would not allow for resetting of the "B" reactor recirculation pump M-G set stops accurately or effectively. Therefore, LCO ACTION 3.0.3 was entered.

In accordance with guidance provided in NUREG 1022, Supplement 1, item 14 and 10CFR50.4(d), the required submission date for this report was determined to be July 3, 1995.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)				
		YEAR	SEQUENTIAL NUMBER			REVISION NUMBER			OF			
Unit 1 Susquehanna Steam Electric Station	0 5 0 0 0 3 8 7	9 5	—	0	0	9	—	0	0	4	OF	4

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

In accordance with guidance provided in NUREG 1022, Supplement 1, item 14 and 10CFR50.4(d), the required submission date for this report was determined to be July 3, 1995.

CORRECTIVE ACTION

Upon determining that the "B" reactor recirculation pump M-G set stops exceeded the Technical Specification limits, the "B" reactor recirculation M-G set stops were reset below the Technical Specification limits. Additional actions to prevent recurrence include assuring that the procedure used to calculate reactor core flow is performed at referenced conditions when being used to set reactor recirculation pump M-G set stops.

ADDITIONAL INFORMATION

Failed Component Identification: None

Previous Similar Events: There are no previous events on either Susquehanna units where Technical Specification LCO ACTION 3.0.3 was entered due to exceeding the criteria of Technical Specification 4.4.1.1.1.2.