

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 8 7					PAGE (3) 1 OF 0 2									
TITLE (4) Boron/Sodium Pentaborate Parameters out of Specification.																								
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	2	7	8	4	8	4	0	3	0	0	0	8	0	2	8	4	0	5	0	0	0	0	0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																								
OPERATING MODE (9)		20.402(b)				20.406(a)				80.73(a)(2)(iv)				73.71(b)										
POWER LEVEL (10)		20.406(a)(1)(i)				80.38(a)(1)				80.73(a)(2)(v)				73.71(a)										
1		20.406(a)(1)(ii)				80.38(a)(2)				80.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)										
		20.406(a)(1)(iii)				80.73(a)(2)(i)				80.73(a)(2)(vii)(A)														
		20.406(a)(1)(iv)				80.73(a)(2)(ii)				80.73(a)(2)(vii)(B)														
		20.406(a)(1)(v)				80.73(a)(2)(iii)				80.73(a)(2)(ix)														
LICENSEE CONTACT FOR THIS LER (12)																								
NAME L.A. Kuczynski - Nuclear Plant Specialist III										TELEPHONE NUMBER														
										AREA CODE 7 1 7 5 4 2 - 1 3 7 5 9														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs														
X	BIR	LII	*	Y																				
SUPPLEMENTAL REPORT EXPECTED (14)																								
YES (If yes, complete EXPECTED SUBMISSION DATE)										NO														
										EXPECTED SUBMISSION DATE (15)														
										MONTH DAY YEAR														

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On June 27, 1984, the 31 day surveillance of the Unit I Standby Liquid Control (SBLC) system indicated that the boron concentration in the SBLC tank was .4% below the Technical Specification 3.1.5 limit for the indicated tank volume at the time of sampling. Additional investigation found that the actual tank level was 378 gallons less than the minimum required by Technical Specification 3.1.5. Thus, the available pounds of sodium pentaborate available for injection were less than the Tech. Spec. limit. Tank level and concentration were returned to within the limits in four hours.

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*Bubbler tube cut to fit on site.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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

TEXT (If more space is required, use additional NRC Form 388A's) (17)

On June 27, 1984, at 1240, with the Unit in Operational Condition 1 at 100% power the regularly scheduled 31 day surveillance test of the Standby Liquid Control (SBLC) System found the boron concentration 0.4% less than the 12.9% required for the indicated tank volume. Further investigation, which involved measuring actual tank volume, found the true tank level to be 4200 gallons vs. the indicated volume of 4900 gallons. The minimum tank volume permitted by Technical Specification 3.1.5 is 4587 gallons. The addition of water and chemicals commenced, with the final result (per Chemistry testing at 1800 on June 27, 1984) of 4800 gallons of sodium pentaborate solution in the SBLC tank with an average concentration of 13.6% (5788 pounds of sodium pentaborate available).

No specific cause for the low concentration discovered during the performance of the surveillance test was identified. Due to experiment accuracy limits, analysis results can vary by as much as $\pm 5\%$. This produces an experimental error band which is greater than the permitted variation on concentration in Technical Specification 3.1.5 for all tank volumes less than 4950 gallons. A Tech. Spec. change is under development to establish a more conservative concentration range. The false indication was caused by a blockage of the bubbler tube used for tank level indication. The bubbler tube was blown down with instrument air and the blockage cleared. The instrumentation was returned to service and proper level indication was verified. A monthly blow-down of the bubbler tube was considered as a possible preventative maintenance item. It was decided that the action would not be effective. It is unlikely that crystallized sodium pentaborate had blocked the tube because the solution concentration and temperature was sufficient to prevent such crystallization. It is possible that the tip of the bubbler tube is alternately wet and dried by the bubbling action and thereby build a coating. Blowing the tube down regularly would not be effective until complete blockage occurred. Also, in effect, a continuous blowdown of the tube takes place due to the way the bubbler system works. Actual tank volume will be manually determined on a monthly basis for a sufficient length of time to provide assurance that tube blockage is not a common occurrence. Investigation of alternate means of tank level indication and/or changes to facilitate cleaning the bubbler tube will be pursued.

If the SBLC system had been called upon to operate, injection to the reactor would have been accomplished. The Technical Specification requirement of 5500 pounds of sodium pentaborate contains a $\pm 25\%$ margin for imperfect mixing ($0.75 \times 5500 \text{ lbs.} = 4125 \text{ lbs.}$). The 4200 gallons of 12.5% solution contained 4667 pounds of sodium pentaborate. In addition, the Control Rod Drive system was operable throughout this event and would have shut down the reactor if required.



Pennsylvania Power & Light Company

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August 3, 1984

U.S. Nuclear Regulatory Commission
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Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 84-030-00
ER 100450 FILE 841-23
PLA-2271

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

Attached is Licensee Event Report 84-030-00. This event was determined reportable per 10CFR50.73(a)(2)(i) in that the concentration and total pounds of boron/sodium pentaborate in the Standby Liquid Control System storage tank were not within Technical Specification limits. The parameters were brought within limits in four hours. Licensee Event Report 84-023 details an occurrence of high sodium pentaborate concentration.

H.W. Keiser
Superintendent of Plant-Susquehanna

LAK/pjg

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