

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

CON'T

0	1
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7 8

REPORT SOURCE

L	6	0	5	0	0	0	2	5	4	7	1	0	1	0	8	3	3	1	1	0	7	8	3	9
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60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

DOCKET NUMBER

EVENT DATE

REPORT DATE

## EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

On October 19, 1983, while analyzing the Standby Liquid Control (SBLC) sodium pentaborate concentration, the concentration was found to exceed Technical Specification Figure 3.4-2 limits. After an attempt to reduce the concentration and increase the temperature failed to bring the solution within limits, an Unusual Event was declared and a Unit One shutdown initiated. The temperature in the tank was adequate to maintain the sodium pentaborate in solution. The boron concentration throughout the event was sufficient to shutdown the Reactor to a cold Xenon-free condition; therefore, the safety implications of this occurrence were minimal.

09		SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE						COMP SUBCODE		VALVE SUBCODE	
0	9	S	H	D	Z	Z	Z	Z	Z	Z	Z	Z	Z				
7	8	9	10	11	12	13	14	15	16	17	18	19	20				
LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.							
17		8	3	041		03		L		0							
21	22	23	24	25	26	27	28	29	30	31	32						
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER	
H	G	B	Z	0003		Y		N		Z		Z999					
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47			

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The cause of this occurrence was inadequate procedures which did not properly inter-

1 1 | face Operating and Chemistry Department surveillances. The SBLC tank temperature

1 2 | was increased, which increased the evaporation rate and thus, the concentration.

1 3 | By 1 a.m., on October 20, the concentration was within limits; and the Unusual

1 4 | Event and the Reactor shutdown were terminated. The applicable procedures will be

1 5 | reviewed and personnel will be informed to establish a better interface between

1 6 | departments and understand the relationship between SBLC tank temperature

1 7 | and solution concentration.

FACILITY STATUS      % POWER      OTHER STATUS      METHOD OF DISCOVERY      DISCOVERY DESCRIPTION

1 5 5 (28) 0 8 0 (29) NA B (31) Monthly Concentration Surveillance

ACTIVITY CONTENT  
RELEASED OF RELEASE AMOUNT OF ACTIVITY (35) LOCATION OF RELEASE (36)

1 6 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

NA NA

PERSONNEL EXPOSURES									
NUMBER			TYPE	DESCRIPTION					
1	7	0	0	0	(37)	Z	(38)	NA	(39)

PERSONNEL INJURIES		NUMBER		DESCRIPTION	
1	8	0	0	0	40
		NA			

8312020277 831107  
PDR ADCK 050222

LOSS OF OR DAMAGE TO FACILITY (43)  
TYPE DESCRIPTION  
1 9 Z (42) NA

PUBLICATION		ISSUED		DESCRIPTION		NRC USE ONLY													
2	0	N	(44)		NA														
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

NRC USE ONLY

NAME OF PREPARER J Sirovy

PHONE 309-654-2241, ext 283

2000-2001

- I. LER NUMBER: LER/RO 83-41/03L-0
- II. LICENSEE NAME: Commonwealth Edison Company  
Quad-Cities Nuclear Power Station
- III. FACILITY NAME: Unit One
- IV. DOCKET NUMBER: 050-254
- V. EVENT DESCRIPTION:

At 8:20 a.m., on October 19, 1983, the Unit One Standby Liquid Control (SBLC) tank was sampled and analyzed for sodium pentaborate concentration as required by Technical Specification 4.4.C... Analysis of the sample indicated a concentration of 19.7 percent. The results were recognized as being unusually high, although it was not identified as being outside the Technical Specification limits. Therefore, the tank was resampled at 1:20 p.m. This analysis indicated a concentration slightly lower than the previous sample. The results were then reviewed by the Lead Chemist who recognized it as exceeding the limits of Technical Specification Figure 3.4-2. The calculations were then verified and reported to the Operating Department at 5:10 p.m. After discussions with the Operating Engineers, the decision was made to add water to the tank and adjust the temperature setting to provide additional temperature margin. This prompt corrective action was felt to be sufficient in adjusting the concentration to within acceptable limits.

At 8:20 p.m. a new sample was taken and analyzed. The results indicated the concentration was still outside the required limits. Since the analysis did not indicate an improvement, although specific gravity measurements showed the concentration was within limits, a conservative approach was taken and a GSEP Unusual Event was declared and a controlled shutdown of the Unit One Reactor initiated.

At 12:30 a.m., on October 20, 1983, a re-analysis of the 8:20 p.m. sample confirmed the specific gravity measurements. By 1 a.m. a new sample and analysis revealed a concentration of 17.09 percent at 94°F. This was well within the prescribed limits, therefore, the Unusual Event and the controlled Reactor shutdown were terminated.

VI. PROBABLE CONSEQUENCES OF THE OCCURRENCE:

There were no safety implications associated with the event, as the temperature of the tank was within the limits necessary to maintain the sodium pentaborate in solution. The amount of boron in the tank at all times was sufficient to shutdown the Reactor to a cold Xenon-free condition. Also, all necessary components for vessel injection were operable at all times.

VII. CAUSE:

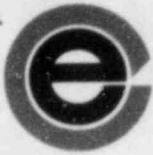
The incident was caused by an increase in sodium pentaborate concentration in the Standby Liquid Control tank due to evaporative losses. The evaporative losses can be divided into two areas:

- 1) normal evaporation rate -- occurs when tank is at ambient temperature;
- 2) increased evaporation rate -- occurs when tank temperature is increased.

The condition developed because of the ineffectiveness of Operating and Chemistry surveillances. Daily operating level and temperature readings are ineffective since the solution concentration is not readily available for determining the proximity to a limit. Chemistry surveillances were inadequate in providing the necessary guidance to prevent this occurrence.

VIII. CORRECTIVE ACTION:

The immediate corrective action was the addition of water and increasing the tank temperature. A Caution Card was hung on the temperature controller preventing the controller from being lowered. Members of the Chemistry group were informed on October 21, 1983, concerning this incident. Both Operator and Chemistry surveillances will be reviewed, the necessary means of communications established between the groups, and procedures will be revised to prevent this incident from occurring again.



**Commonwealth Edison**

Quad Cities Nuclear Power Station  
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Cordova, Illinois 61242  
Telephone 309/654-2241

*DmB*

NJK-83-407

November 7, 1983

J. Keppler, Regional Administrator  
Office of Inspection and Enforcement  
Region III  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

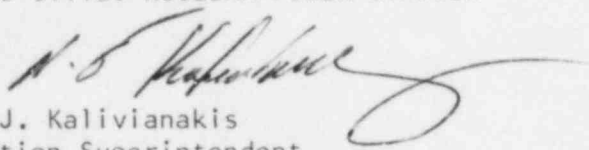
Reference: Quad-Cities Nuclear Power Station  
Docket Number 50-254, DPR-29, Unit One  
Appendix A, Section 3.4.c

Enclosed please find Reportable Occurrence Report Number RO 83-41/03L-0  
for Quad-Cities Nuclear Power Station.

This report is submitted to you in accordance with the requirements of  
Technical Specification 6.6.B.2.b, operation in a degraded mode permitted  
by a limiting condition for operation.

Respectfully,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

  
N. J. Kalivianakis  
Station Superintendent

NJK:DGC/bb

Enclosure

cc B. Rybak  
A. Morrongiello  
INPO Records Center

NOV 21 1983

*IE2211*