

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Quad-Cities Nuclear Power Station, Units 1 and 2	DOCKET NUMBER (2) 0 5 0 0 0 2 5 4 1	PAGE (3) 1 OF 0 3
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TITLE (4)
125 Volt DC Battery Capability Re-Evaluation

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)																																			
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9)</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0 1 0 0</td> <td>20.402(b)</td> <td>20.408(c)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.408(a)(1)(i)</td> <td>50.36(c)(1)</td> <td>50.73(a)(2)(v)</td> <td>73.71(e)</td> </tr> <tr> <td>20.408(a)(1)(ii)</td> <td>50.36(c)(2)</td> <td>50.73(a)(2)(vii)</td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.408(a)(1)(iii)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.408(a)(1)(iv)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.408(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(ix)</td> <td></td> </tr> </table>												OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)											POWER LEVEL (10) 0 1 0 0	20.402(b)	20.408(c)	50.73(a)(2)(iv)	73.71(b)	20.408(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(e)	20.408(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	20.408(a)(1)(iii)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(A)	20.408(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(viii)(B)	20.408(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	
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LICENSEE CONTACT FOR THIS LER (12)

NAME Fred Kaepfel, Technical Staff Engineer	TELEPHONE NUMBER AREA CODE: 3 0 9 6 5 4 - 2 2 4 1
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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		
X	E	I	B	T	R	Y	G	I	9	I	N

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)

In light of experience gained during performance of the 125 VDC Battery Discharge Test on Unit One, the Station raised a concern about the adequacy of the design of the 125 VDC Battery. The NRC shared the concern, and issued a confirmatory action letter to the Company to, in part, demonstrate safe operation based on a battery load profile analysis which demonstrated actual battery capabilities for assumed accident analysis. For the scenario of a loss of off-site power with loss of AC to the battery chargers, and with the unit at full power with no other accident present, it was recommended to the Station that a procedure be prepared to shed battery loads within 30 minutes to reduce total load on the battery to less than 62 amperes, and require the plant to reach COLD SHUTDOWN within four hours. Corrective action taken was to implement the above mentioned procedure with long-term corrective action encompassing the replacement of existing battery chargers with larger capacity chargers and replace existing Station 125 Volt batteries with batteries of greater capacity.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Quad-Cities Nuclear Power Station, Units 1 & 2	DOCKET NUMBER (2) 0 5 0 0 0 2 5 4	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4	— 0 0 8	— 0 0	0 2	OF	0 3

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

Event Description

On May 3, 1984, preparations were being made for the Unit 1 125 Volt Battery Discharge Test. To isolate the Unit 1 battery for the test, the 125 Volt DC buses that are its normal load were transferred to the Unit 2 battery in accordance with the discharge test procedure. When the transfer was completed, the number 2 125 Volt Battery Charger began current limiting at 120 amperes and then tripped after 20 minutes.

Since the number 2 Battery Charger was unable to sustain the load of both units, the Unit 1 load was transferred back to the Unit 1 battery and the Unit 1 discharge test was postponed. In an effort to complete the battery discharge test promptly, repair work to the other battery charger capable of supplying the Unit 2 125 Volt DC battery, number 2A, was initiated. The number 2A charger is a larger capacity, newer charger, which was out of service awaiting repair at the time of this event. After returning the number 2A Battery Charger to service, the Unit 1 load was transferred to Unit 2 again. When it was verified that the number 2A Battery Charger was sustaining the load satisfactorily, the Unit 1 Battery Discharge test was performed.

During this time, the reason for the inability of the number 2 Battery Charger to carry both Unit 1 and Unit 2 loads was investigated. It was determined that the typical Unit 1 125 Volt DC load of 75 amperes exceeded the eight hour discharge rating of the battery. Although the Unit 2 normal load of 50 amperes was below the battery rating, the two unit's loads, when combined, exceeded the rating of the number 2 Battery Charger. Concern was then raised as to the adequacy of the 125 Volt Station batteries relative to the present load on them. This resulted in the Station Nuclear Engineering Department performing a load profile analysis for several different postulated accident conditions. The results of these analyses were presented to the Station at 4:10 p.m. on May 11, 1984. Although not required in the original design basis for battery sizing, the Station Nuclear Engineering Department conservatively included the analysis of a loss of off-site power with a loss of AC feed to the 125 Volt Battery Chargers and both units at full power. The load profile for this limiting case revealed that the 125 Volt Station batteries could not bring both units to Cold Shutdown without some of the non-essential DC loads being shed.

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

Cause

The cause of this deviation is a concern about the capacity of the 125 Volt Station batteries relative to the DC loads on them. Other Stations may benefit from a review of battery loads.

Corrective Action

On May 11, 1984, a procedure was implemented to reduce battery load in the event of failure of the 125 Volt Battery Chargers. A sufficient amount of non-essential load will be manually shed from the DC buses to reduce the 125 Volt battery current below 62 amperes within 30 minutes of the postulated transient.

Long-term corrective action will encompass two separate projects. The existing non-seismic 125 Volt Battery Chargers will be replaced with seismically installed units of larger capacity. At present, the Station Nuclear Engineering Department is evaluating the 125 Volt DC load profiles with regard to battery ampere-hour capacity. This will result in the existing 125 Volt Station batteries being replaced with batteries of greater capacity.



Commonwealth Edison

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NJK-84-194

June 8, 1984

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

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One

Enclosed please find Licensee Event Report Number (LER) 84-08
for Quad-Cities Nuclear Power Station.

This report is submitted to you in accordance with the require-
ments of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)-
(vi) which concerns the design or analysis of a safety system to
perform its intended function.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Superintendent

NJK:JV/bb

Enclosure

cc B. Rybak
A. Morrongiello
INPO Records Center
NRC Region III
ANI Library

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