



Commonwealth Edison

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RLB-90-76

February 20, 1990

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

Reference: Quad Cities Nuclear Power Station
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 88-022, Revision 01, for Quad Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(i)(B): The licensee shall report any operation or condition prohibited by the plant's Technical Specifications.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
R. L. Bax
Station Manager

RLB/MJB/eb

Enclosure

cc: R. Stols
R. Higgins
INPO Records Center
NRC Region III

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Quad-Cities Unit Two Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 6 | 5 Page (3) 1 | of | 0 | 4
 Title (4) Loss of Chimney Monitors When Power Supply Deenergized for Maintenance
Due to Battery Backup Failure

| 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 1 | 8 8 | 8 8 | 0 2 2 | 0 1 | 0 2 | 2 0 | 9 0 | | 0 5 0 0 0 1 1 |

OPERATING MODE (9) 1
 POWER LEVEL (10) 0 | 0 | 0
 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

| | | | |
|--|--|---|--|
| <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)(vii) | <input type="checkbox"/> Other (Specify in Abstract below and in Text) |
| <input type="checkbox"/> 20.405(a)(1)(iii) | <input checked="" type="checkbox"/> 50.73(a)(2)(i) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) | |
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| <input type="checkbox"/> 20.405(a)(1)(v) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix) | |

LICENSEE CONTACT FOR THIS LER (12)
 Name Rod Wiebenga, Chemist, Ext. 2732 TELEPHONE NUMBER 3 | 0 | 9 | 6 | 5 | 4 | - | 2 | 2 | 4 | 1

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 | R E | B T R Y | 0 0 9 2 | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)
 [Yes (if yes, complete EXPECTED SUBMISSION DATE)] X | NO
 Expected Submission Date (15) _____

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

On May 31, 1988, at 1123 hours, Unit One was in the RUN mode at 100 percent power and Unit Two was in the SHUTDOWN mode. At this time, Motor Control Center (MCC) [MCC] 27-1 was intentionally de-energized to allow maintenance to be performed. Although power [JX] was subsequently restored, noble gas [IL] monitoring [MON] equipment was unknowingly lost for a period of time in excess of Technical Specification Table 3.2-6 requirements. The noble gas monitor was not functioning for a total of 14 hours 11 minutes. This operation outside of the Technical Specifications was realized on July 18, 1988, during review of the event and testing performed as a result of that review.

The cause of this event was due to the failure of the battery [BTRY] backup to power the Separate Particulate Iodine and Noble Gas Monitor (SPING). A contributing cause was the inadequacy of the electrical feed reference document and the Off Normal Instrument Status procedure.

Corrective actions included the development of a preventive maintenance procedure for the battery backup and other procedure development and revisions. Also, the power supply will be rerouted to improve reliability.

This report is provided to comply with 10CFR50.73(a)(2)(i)(B).

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power.

EVENT IDENTIFICATION: Loss of Chimney Monitors When Power Supply Deenergized for Maintenance Due to Battery Backup Failure

A. CONDITIONS PRIOR TO EVENT:

Unit: Two Event Date: May 31, 1988 Event Time: 1123
 Reactor Mode: 1 Mode Name: Shutdown Power Level: 00%

This report was initiated by Deviation Report D-4-2-88-030.

Shutdown Mode (1) - In this position, a reactor scram is initiated, power to the control rod drives is removed, and the reactor protection trip systems have been deenergized for 10 seconds prior to permissive for manual reset.

B. DESCRIPTION OF EVENT:

On June 1, 1988, Unit Two was shut down with the mode switch in SHUTDOWN. At 0100 hours, a Radiation Chemistry Technician (RCT) went to the Main Chimney House [VL] to collect samples and verify operability of the chimney monitoring system [IL]. The RCT noted that the Separate Particulate Iodine and Noble Gas Monitor (SPING)[MON], and [IL] the Victoreen Post Accident Iodine and Particulate Monitor had lost electric power feed [JX]. The Noble Gas Monitors had power to them but there was no sample flow because the SPING pump [P], which is used for pulling the sample through them, was not running. The RCT immediately contacted the Radiation Protection Foreman who contacted the Shift Engineer. It was determined that when Motor Control Center (MCC) [MCC] 27-1 had been intentionally deenergized at 0040 hours for maintenance, the power to the SPING-VICTOREEN was lost.

MCC 27-1 was re-energized at 0115 hours. The RCT reset the SPING-VICTOREEN system at 0134 hours. The SPING was reprogrammed at 0222 hours.

This event was documented on Commonwealth Edison's Deviation Report 04-2-88-030. During the subsequent investigation of this event, it was found that MCC 27-1 had also been deenergized at 1123 hours on May 31, 1988, to perform routine MCC maintenance. The MCC was returned to service at 1151 hours the same day.

The initial evaluation of this event concluded that it was non-reportable because Technical Specification Table 3.2-6 requires that the chimney effluent be monitored for noble gases, particulates and iodine on a continuous basis and that there be a high range noble gas monitor operable at all times. The action to be taken for loss of the noble gas monitors, samples taken every eight hours and counted within 24 hours, was thought to have been met when a grab sample was pulled and counted at 0130 hours on June 1, 1988.

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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]

However, on July 18, 1988, following additional review and testing, this event was reclassified as being reportable because the testing revealed that when MCC 27-1 was returned to service on May 31, 1988, the power to the SPING pump was not restored automatically, as assumed at the time of the event. This assumption was based on the fact that the SPING control terminal did not report a "failure" for the main chimney SPING at 0000 hours on June 1, 1988, because the SPING had been de-initialized when the power was lost at 1123 hours on May 31, 1988. In this status, no communication takes place between the control terminal and the SPING. The battery backup should have kept the SPING initialized, but failed, as shown by the test performed on July 18, 1988. If the SPING had remained initialized, as originally assumed, a failure would have been logged at 0000 on June 1, 1988, and the event would have been classified a Licensee Event Report (LER) at that time. The event was subsequently classified as an LER because the noble gas monitor did not function from 1123 hours on May 31, 1988, to 0134 hours on June 1, 1988 (14 hours 11 minutes), and the noble gas sample was not pulled once per eight hours as required by Technical Specification Table 3.2-6.

C. APPARENT CAUSE OF EVENT:

This report is supplied to satisfy the requirements of 10CFR50.73(a)(2)(1)(B): The licensee shall report any operation or condition prohibited by the plant's Technical Specifications.

The cause of this event was originally attributed to procedure inadequacies; however, after additional testing performed on August 25, 1988, in conjunction with Work Request Q68376, it was determined that an equipment malfunction was the cause. When power was lost to the SPING sample system, the battery backup provided should have kept the SPING ready to operate until power was restored. The battery backup was discovered to be discharged. The battery is maintained charged by a charging system in the SPING. The charging system was found to be working properly, the battery had failed. With the battery discharged, the SPING pump did not automatically restart when power was restored. A contributing cause was procedure deficiency. When the out-of-service requirements were determined for the maintenance needed on MCC 27-1, the Unit Two Electrical Distribution book was consulted. The electrical distribution book indicated distribution panel 27-1-1 circuit 2: "Gaseous Monitoring Sys 4A Mon." This description did not provide adequate identification of what was being fed by this circuit.

Also, when the MCC was deenergized, the control room apparently received the low flow alarm for the main chimney sample system. This alarm had an orange sticker on it, placed on March 31, 1988, per QAP 300-13, Off Normal Instrument Status. There was also an outage sheet, QOS 5740-01, that was initiated on March 23, 1988. The alarm had been repaired under Work Request Q65266 on April 9, 1988. The outage sheet was signed off, but the orange sticker was not removed. The alarm was not deemed significant because of the orange sticker. As a result of these procedure problems, the noble gas sampling required by Technical Specification Table 3.2-6 was not met.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

D. SAFETY ANALYSIS OF EVENT:

The safety significance of this event is minimal for the following reasons: the samples taken both before and after this event indicated less than detectable levels of noble gases and no plant operating parameters changed that would have caused a significant change in the level of noble gases.

E. CORRECTIVE ACTIONS:

The following corrective actions have been completed as required by LER 88-022, Rev. 0:

A procedure change was implemented to QAP 300-13, Tagging Equipment, that requires the orange label to be removed as soon as the instrument is made serviceable.

The Operating Department has reviewed the Electrical Distribution books for adequacy and accuracy. Electrical distribution was incorporated into the QOM procedure block. The affected procedure for this circuit is QOM 2-6800-T7 and the description of this circuit was changed to more accurately reflect what is fed.

The battery backup to the SPING was placed on a preventive maintenance surveillance to be checked semi-annually for charge and operability.

A procedure change was implemented to QOA 6700-1, 480 V Bus 15, 16 OR 17 (25, 26, OR 27) FAILURE, that added the chimney sampling system will be lost on loss of bus 27. This is an interim fix until the power supply to the chimney sampling system can be rerouted.

The following actions are in process:

A modification request has been initiated to re-route the power supply from MCC 27-1 to an Essential Service bus. This item is being tracked under NTS 2652008803001.

Procedure Changes to update the adequacy and accuracy of the QOMs is still in process. This item is being tracked under NTS 2652008803004.

F. PREVIOUS EVENTS:

No other reportable events found similar to this event.

Based upon the corrective actions completed and actions in process, no further actions are deemed necessary to prevent recurrence.

G. COMPONENT FAILURE DATA:

12V Battery, Eberline Part #10947-00, Delco #59-60.