



Commonwealth Edison

Quad Cities Nuclear Power Station

22710 206 Avenue North

Cordeva, Illinois 61242-9740

Telephone 309/654-2241

RLB-92-177

September 15, 1992

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
Docket Number 50-265, DRP-30, Unit Two

Enclosed is Licensee Event Report (LER) 92-022, 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)(v)(d). The licensee shall report any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/TB/rjb

Enclosure

cc: J. Schrage
T. Taylor
INPO Records Center
NRC Region III

STMGR 422

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Quad Cities Unit One Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 5 | 4 | 1 | of | 0 | 4
 Title (4) Failure Of Control Room HVAC To Reach Proper Di Across The Heater.

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)
11	1	04	91	022	01	09	11	06	91	05000265
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)							
4			20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
POWER LEVEL (10)			20.405(a)(1)(i)		50.36(c)(1)		X 50.73(a)(2)(v)		73.71(c)	
1 0 0			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vi)		Other (Specify in Abstract below and in Text)	
			20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)			
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)			
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)			

LICENSEE CONTACT FOR THIS LER (12)

Name: Michael Harms, Tech Staff Engineer Ext. 2159 TELEPHONE NUMBER
 AREA CODE 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 NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS
X	V I	F I	F 1 3 2	N					

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) Month | Day | Year
 Yes (If yes, complete EXPECTED SUBMISSION DATE) X | NO

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

ABSTRACT:

On November 4, 1991 at 1940 hours Unit One was in the RUN mode at 100 percent of rated core thermal power. Unit Two was also in the RUN mode at 79 percent of rated core thermal power. At this time, the Control Room [VI] (CR) "B" Train Air Filtration Unit (AFU) was declared inoperable. During the surveillance testing, the heater [EHTR] failed to attain a 15 degree Fahrenheit differential temperature (dT). An Emergency Notification System (ENS) phone call was completed at 2104 hours per 10CFR50.72(b)(2)(iii)(D).

Technical Specification Amendments 133 and 128 were approved and implemented on November 18, 1991 following a 30 day comment period.

The apparent cause of the failure to reach the proper differential temperature was an inaccurate flow measuring device.

Corrective actions included the new Technical Specification heater dT requirements, revising the monthly surveillance to incorporate the new requirements, and performing the monthly operability surveillance.

This report is being submitted to comply with 10CFR50.73(a)(2)(v).

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TEXT Energy Industry Identification System (EIIIS) 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: "B" Train CR HVAC Emergency Filtration Unit Unable To Attain Proper DT Across Heater Due To Excessively Conservative DT Requirements .

A. CONDITIONS PRIOR TO EVENT:

Unit: One Event Date: November 4, 1991 Event Time: 1940
Reactor Mode: 4 Mode Name: RUN Power Level: 100%

This report was initiated by Deviation Report D-4-91-135.

RUN Mode (4) - In this position the reactor system pressure is at or above 825 psig, and the reactor protection system is energized with APRM protection and RBM interlocks in service (excluding the 15% high flux scram).

6 DESCRIPTION OF EVENT:

On November 4, 1991, at 1940 hours Unit One was in the RUN mode at 100 percent of rated core thermal power. Unit Two was also in the RUN mode at 79 percent of rated core thermal power. While performing QOS 5750-2, "Control Room Emergency Filtration System Monthly Test," a differential temperature (dT) of 14.41 degrees Fahrenheit was recorded across the heater [EHTR] for the Control Room [VI] (CR) "B" Train Air Filtration Unit (AFU). A dT of 15 degrees or greater must be obtained to comply with Technical Specification 4.8.H.2.b. The "B" Train AFU was declared inoperable and QOS 5750-02, "Control Room Emergency Filtration System Inoperable Outage Report," was initiated. An Emergency Notification System (ENS) phone call was completed at 2104 hours per 10CFR.72(b)(2)(iii)(D).

On November 18, 1991, Technical Specification Amendment 133 to DPR-29 and Amendment 128 to DPR-30, which had been requested prior to the event and which reduced the required heater dT, were received. Concurrently, QOS 5750-2, "Control Room Emergency Filtration System Monthly Test," was performed. At 1833 hours, the "B" Train AFU was declared operable and the Outage Report was terminated. The heater dT recorded during performance of the surveillance was 16.82 degrees Fahrenheit at a flow of 2000 Cubic Feet per Minute (CFM). The required dT at this flow rate per the new Technical Specification amendments is 13.5 degrees Fahrenheit.

Between November 4, 1991 and November 18, 1991 no maintenance was done on the system. An investigation was conducted to determine the reason for the different differential temperatures between the two dates. This investigation has revealed that the flow measuring device for the filter train underestimates the system flow between 4 and 15 percent depending on the environmental conditions at the time of the test.

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C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(v). Technical Specification 3.8.H.1 requires that the CR Emergency Filtration System, including at least one booster fan [FAN], be operable at all times when secondary containment integrity is required. Technical Specification 4.8.H.2.b. required that the AFU demonstrate a heater DT of 15 degrees Fahrenheit or greater.

Technical Specification Amendments 133 and 128 were submitted after the first heater event in September 1991. After the 30 days comment period the Technical Specification change was approved and implemented by the station on November 18, 1991. The apparent cause of the event was an inaccurate flow measuring device that underestimated system flow by an average of 8 percent. By underestimating the flow, more flow than was believed was passing through the heater coils, reducing the DT below the Technical Specification limit.

D. SAFETY ANALYSIS OF EVENT:

The safety significance of the event was minimal. A DT of 14.41 degrees at a flow rate of 2000 CFM would have satisfied the new Technical Specification requirements of 13.5 degrees. This being true, the AFU would have been able to fulfill its design function.

E. CORRECTIVE ACTIONS:

The immediate corrective actions were to declare the "B" Train AFU inoperable and initiate the appropriate Outage Report.

Additional corrective actions were to await the new Technical Specification requirements for heater DT, revise the monthly surveillance to incorporate the new requirements, perform the monthly surveillance, and declare the "B" Train AFU operable. All of these corrective actions have been completed.

Further corrective actions will be to recalibrate the flow measuring device to reduce the underestimation error to within acceptable ranges for the device (NTS2542009113502).

F. PREVIOUS EVENTS:

Three previous events where the required heater DT was not met have been documented. These events are as follows:

- 1) DVR 4-1-90-048 (LER 90-12).

The cause of this event was believed to be a defective heater but was never substantiated by data that would point to this conclusion. Checks on the heater performed by the EMD proved that the heater was functioning properly.

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2) DVR 4-1-91-110 (LER 91-17)

The causes of this event were believed to be a marginally sized heater for the DT required and a broken dP indicator.

3) DVR 4-1-91-127 (LER 91-19)

There were believed to be two causes of this event. The first cause appeared to be a design deficiency involving the thermowells of the Resistance Temperature Devices (RTDs) used to measure the DT across the heater. The second cause appeared to be the High Efficiency Particulate Air (HEPA) filters that were partially fouled due to normal usage.

G. COMPONENT FAILURE DATA:

The flow measuring device is manufactured by Fluid Components, Inc., Model # LT81.