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RLB-92-198

September 30, 1992

U. S. Nuclear Regulatory Commission
Document Control Desk
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Reference: Quad Cities Nuclear Power Station
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 92-018, 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/plm

Enclosure

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

JE22

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

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Title (4)		

HPCI System Manually Isolated Due To An Inadequate Procedure

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

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

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
Nick Radloff, Tech Staff, Ext. 2942	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	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

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 May 29, 1992, at 1300 hours, Unit Two was in the RUN mode at 100 percent of rated core thermal power. At this time, the Unit Two Nuclear Station Operator (NSO) received a "High Pressure Coolant Injection (HPCI) Pump Area High Temperature" alarm on the 902-3 panel. The possible causes of the alarm were investigated. Afterwards, the NSO proceeded to manually isolate the HPCI system per QCAN 902-3, F-12 annunciator procedure when HPCI did not isolate automatically.

At 1310 hours, the SE declared HPCI inoperable and initiated QCOS 2300-2, HPCI Outage Report. After subsequent investigation and review that the system logic functioned as designed, HPCI was declared operable and the outage report was terminated.

The cause of this event is due to a spurious HPCI high area temperature alarm.

Corrective actions include IM calibrating and functionally testing the temperature switches successfully and verifying the switches were within the acceptable trip settings.

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

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PLANT AND SYSTEM IDENTIFICATION:

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

EVENT IDENTIFICATION: HPCI System Manually Isolated Due To An Inadequate Procedure.

A. CONDITIONS PRIOR TO EVENT:

Unit: Two
Reactor Mode: 4

Event Date: May 29, 1992
Mode Name: RUN

Event Time: 1310
Power Level: 100%

This report was initiated by Deviation Report D-4-2-92-082.

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).

B. DESCRIPTION OF EVENT:

On May 29, 1992, at 1300 hours, Unit Two was in the RUN mode at 100 percent rated core thermal power. At this time, the Unit Two Nuclear Station Operator (NSO) received a "High Pressure Coolant Injection (HPCI) [BJ] Pump [P] Area High Temperature" alarm on the 902-3 panel, annunciator [ANN] window F-12, in the control room.

This alarm is caused when a contact in any one of the four temperature switches [JM] located in the HPCI room picks up. The HPCI system will automatically isolate when a two out of two logic for either trip channel has been satisfied. The isolation temperature setpoint for these switches is 155 degrees Fahrenheit (F).

The HPCI area temperature indicators on the 902-21 panel in the control room were checked. There are four temperature indicators on this panel that provide temperature indication in four different areas in the HPCI room. The temperature indicators displayed temperatures ranging from 115-135 degrees F. An Equipment Attendant was dispatched to the HPCI room with a calibrated digital thermometer to investigate.

Per QCAN 902-3, F-12 annunciator procedure, when the alarm was received in the control room, the automatic actions should initiate a HPCI isolation. Step B.1 of the procedure directs the operator to verify automatic actions had occurred. The NSO found that no isolation had been initiated on the HPCI system.

At 1310 hours, the U-2 NSO isolated the HPCI system by closing the HPCI motor operated (MO) 2-2301-4 and 2-2301-5, HPCI steam supply isolation valves. The Shift Engineer declared HPCI inoperable and initiated QCOS 2300-2, HPCI System Outage Report. The HPCI room cooler was started. Afterwards, the U-2 NSO reset the alarm on the annunciator panel in the control room.

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The SE investigated the cause of the alarm. After reviewing the electrical prints, it was determined that it takes 1 out of 4 temperature switches to get an alarm and 2 out of 2 temperature switches to get an isolation. The EA reported that there was no evidence of steam leaks in the HPCI room and the digital thermometer read approximately 122 degrees F.

At 1321 hours on May 29, 1992, HPCI was unisolated and declared operable. The HPCI outage report was terminated.

Instrument Maintenance (IM) personnel performed QCIS 2300-7, Refuel HPCI Area High Temperature Functional Test, on the four temperature switches with successful results. Nuclear Work Request Q01220 was initiated to calibrate the switches. IM could not calibrate the switches at this time because the HPCI system would have to be taken out of service.

At 1427 hours on May 29, 1992, the NRC was notified of the event via the Emergency Notification System (ENS) in order to comply with the requirements of 10CFR50.72(b)(2)(iii)(D).

C. APPARENT CAUSE OF EVENT:

This report is being submitted to comply with 10CFR50.73(a)(2)(v)(D) which requires the licensee report any event or condition that alone could have prevented the fulfillment of the safety function of systems that are needed to mitigate the consequences of an accident.

The cause of this event is due to a spurious HPCI High Area temperature alarm. Per QCAN 901(2)-3, F12 annunciator procedure, HPCI is isolated by automatic or operator actions when an alarm is received in the Control Room. The alarm was investigated and after the alarm was determined to be a spurious trip, HPCI was unisolated.

D. SAFETY ANALYSIS OF EVENT:

The safety of the plant and personnel was not affected in this event. Per Technical Specification 3.5.C.2, if the HPCI subsystem is inoperable reactor operation is allowed for fourteen days provided all active components of the Automatic Pressure Relief (APR) subsystems, the Core Spray (CS) subsystems, and Low Pressure Coolant Injection (LPCI) mode of Residual Heat Removal (RHR) systems are operable. These systems were operable throughout this event.

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

The HPCI Area High Temperature Switches monitor HPCI Area Ambient Temperatures. The High Area Temperature is an indirect indication of a steam leak. Per Tech. Spec. 3.2, the setpoint where HPCI will isolate is less than or equal to 170° degrees F. The actual setpoint is 155° degrees F. Because the alarm was received well below Tech. Spec. limits, and after investigation, Operations decided the safety consequences were minimal due to the alarm tripping off in a conservative direction.

Because of the upgraded logic change, the U-2 HPCI steam supply isolation valves will not auto-open once the valves have been closed, even under an initiation signal. The valves must be manually opened, providing no isolation signals are present. If an initiation signal was present, the U-2 NSO could have manually opened the HPCI steam supply isolation valves and allowed HPCI to fulfill its safety function.

E. CORRECTIVE ACTIONS:

The immediate corrective actions upon receiving the alarm consisted of verifying the temperatures in the HPCI room and verifying HPCI had isolated per QCAN 902-3, F-12 annunciator procedure. When the HPCI system did not automatically isolate, the NSO manually isolated the HPCI system. The SE declared the system inoperable and the HPCI System Outage Report was initiated. After investigating the cause of the alarm and discovery that the HPCI system logic did in fact function as designed, HPCI was unisolated and the outage report was terminated.

IM performed a functional test on the four temperature switches with successful results. Nuclear Work Request Q01220 was initiated to calibrate the temperature switches. All of the temperature switches were found to be within acceptable trip settings. These switches are required to be calibrated and functionally tested every outage per Technical Specification 3.2 (NTS #2652009208202).

F. PREVIOUS EVENTS:

A Nuclear Plant Reliability Data System (NPRDS) search was not conducted because there is no component failure associated with this event.

There were no previous deviation reports (DVR) similar to this event where HPCI was isolated due to a spurious High Area temperature alarm.

G. COMPONENT FAILURE DATA:

There is no component failure associated with this event.