

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Quad-Cities Nuclear Power Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 1 6 5	PAGE (3) 1 OF 0 3
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TITLE (4)
Unit 2 HPCI Isolated Due to Temperature Switches Tripped

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	9	1984	84	014	000	0	12	1985	NA		0 5 0 0 0																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 4</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0 9 9</td> <td>20.402(b)</td> <td>20.405(c)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.405(a)(1)(i)</td> <td>50.38(a)(1)</td> <td>X 50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td>50.38(a)(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>20.405(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.405(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) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											POWER LEVEL (10) 0 9 9	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)	20.405(a)(1)(i)	50.38(a)(1)	X 50.73(a)(2)(v)	73.71(c)	20.405(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)	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)(ix)	
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LICENSEE CONTACT FOR THIS LER (12)
NAME: H. Do
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	BJ	JIS	L200	Y					

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)

On September 19, 1984, Unit Two was operating at 99 percent thermal power. At 11:20 a.m. a High Pressure Cooling Injection System (HPCI) (BJ) isolation occurred while the system was being run at low speed during Turbine warming. This was caused by a small intermittent leak from a steam seal on the HPCI Turbine. The HPCI isolation was reset at 11:45 a.m. However, when reset, valve MO 2-2301-4 failed to open from the Control Room. This rendered HPCI inoperable. Since the Low Pressure Coolant Injection mode of the Residual Heat Removal System was also inoperable for preventative maintenance, the decision was made to shutdown Unit Two. This shutdown was never initiated however, because Electrical Maintenance personnel got valve 2-2301-4 open at 12:10 p.m., only five minutes after deciding to shutdown, and prior to initiating a load drop. Because of the short time duration of the event, the safety impact of this occurrence was minimal.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Event Description

On September 19, 1984, Unit Two was operating at 99 percent thermal power. At 11:10 a.m., the High Pressure Coolant Injection System (HPCI) (BJ) was being run at approximately 2500 rpm in accordance with the HPCI System Manual Startup procedure, QOP 2300-3.

At 11:20 a.m., a HPCI isolation occurred. This isolation was caused by a small intermittent steam leak from a steam seal on the Turbine. The HPCI isolation was reset at 11:45 a.m. The outboard steam isolation valve, MO 2-2301-5, was opened fully. When the Unit Operator tried to open the inboard steam isolation valve, MO 2-2301-4, from the Control Room, a dual indication was received. This indicated the valve had come off its seat but would not open completely. The HPCI System was declared inoperable. Because the Low Pressure Coolant Injection (LPCI) mode of the Residual Heat Removal System (RHRS) was also inoperable, due to preventative maintenance, the decision was made at 12:05 p.m. to shutdown Unit Two to satisfy the requirements of Technical Specification 3.5.C.3. At 12:10 p.m., prior to any actual load drop, Electrical Maintenance personnel got the 2-2301-4 valve open and successfully cycled the valve three times. Therefore, the Reactor shutdown was terminated. HPCI monthly operability tests, QOS 2300-2 and QOS 2300-3, were successfully completed at 5:10 p.m. on September 19, 1984. The seal leak present at extended low Turbine speeds did not appear at higher speeds. Had an Auto initiation of HPCI occurred, the Turbine would have rapidly ramped up to full speed and successfully operated.

The 10 CFR 50.72 Red Phone Notification to the Nuclear Regulatory Commission was not made in this case because the problems that caused the HPCI System to be inoperable were corrected (i.e., HPCI became operable again) well within the reporting time interval required.

Because of the short time duration, approximately 25 minutes, during which valve 2-2301-4 was inoperable, the safety impact of this deviation was minimal. Initially, this occurrence had been treated as a non-reportable event. However, during the evaluation process, it was decided to upgrade this event to a reportable occurrence as required by the Code of Federal Regulations, 10 CFR 50.73(a)(2)(v).

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TEXT (if more space is required, use additional NRC Form 308A's) (17)

Cause

The cause of the HPCI isolation was a small intermittent steam leak from the Turbine seal during extended low speed operation. There are temperature switches located at each end of the Turbine near the seals. Due to the design of the existing Temperature Detection System in the HPCI room, the temperature switches in the proximity of the steam leak responded to initiate an unnecessary HPCI isolation.

The setpoint of the motor operator's closed side limits has been determined to be the cause of valve 2-2301-4 failure to open. The closed side limits were set too close to the point where the valve disc just lifted off of its seat. This in turn caused the LS/C contact, which bypasses the torque switch on initial valve opening, to open prematurely. When the valve was opened, the amount of torque that was required to lift the valve disc off its seat was of sufficient magnitude to cause a spurious opening of the torque switch; thus, preventing the valve from opening any further. A borderline setting of these limits can also cause the open position indicator to energize before the disc actually lifts off its seat; thus, giving a dual indication.

The limit switch is a two-train geared limit switch, part number 310A49, manufactured by Limitorque Corporation.

Corrective Action

The closed side limits on valve 2-2301-4 were readjusted so that the LS/C contact, which bypasses the torque switch on initial valve opening, will open only after the valve disc has lifted off its seat. The valve was successfully stroke tested three times on December 29, 1984, after the readjustments were performed under Work Request Q39536.

HPCI isolations due to the activation of the HPCI high temperature switches have occurred in the past. The last occurrence of a similar nature is documented in Deviation Report 4-2-84-51. Because of past occurrences, Action Item Record 4-82-30 was initiated to find a more reliable design for the temperature detection systems in the HPCI rooms.

As for the failure of valve MO 2-2301-4 to open, there has been one previous occurrence of a similar nature. This is documented in Deviation Report 4-1-77-89, in which valve MO 1-2301-4 failed to re-open after a monthly HPCI Steam Line High Flow Functional Test.



Commonwealth Edison

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NJK-85-29

January 29, 1985

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 please find Licensee Event Report (LER) 84-014, revision 0, for Quad-Cities Nuclear Power Station.

This report is upgraded from a non-reportable occurrence to a Licensee Event Report and submitted to you in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(v), which requires reporting of any event or condition that alone could have prevented the fulfillment of the safety functions of structures that are needed to shutdown the Reactor and maintain it in a safe shutdown condition.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

L. J. Gerner for

N. J. Kalivianakis
Station Superintendent

NJK:HQD/bb

Enclosure

cc B. Rybak
A. Madison
INPO Records Center
NRC Region III

IE22
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