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RLB-91-037

January 30, 1991

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) 91-02, 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/MJB/kas

Enclosure

cc: R. Stols
T. Taylor
INPO Records Center
NRC Region III

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)	Docket Number (2)	Page (3)
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Title (4)

HPCI Declared INOP Due To MO 2-2301-5, Significant Valve Packing Leak

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 1	0 2	9 1	9 1	---	0 0 1	---	0 0	0 1	3 0	9 1	Quad Cities	0 5 0 0 0 2 5 4
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OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
		___ 20.402(b)	___ 20.405(c)	___ 50.73(a)(2)(iv)	___ 73.71(b)
POWER LEVEL (10)	0 9 2	___ 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 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	TELEPHONE NUMBER
	AREA CODE
Nick Radloff, Technical Staff Ext. 2942	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	B J	I S V	C 6 8 1	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

ABSTRACT:

On January 2, 1991, at 0143 hours, Unit Two was in the RUN mode at 92 percent rated core thermal power. While on rounds, an Equipment Attendant (EA) discovered a severe packing leak on the High Pressure Coolant Injection (HPCI) Turbine [TRB] Steam Supply Isolation Motor Operated (MO) valve [ISV] 2-2301-5. The Nuclear Station operator (NSO) closed the valve. HPCI was declared inoperable and an Outage Report was initiated. Mechanical Maintenance (MM) replaced the packing on the valve and determined a steam cut in the valve stem had worn the packing away. At 2005 hours, January 3, 1991, the HPCI MO-2-2301-5 valve was successfully tested and declared operable. The outage report was terminated. Corrective actions include repairing and/or replacing the valve stem.

NRC notification of the event via the Emergency Notification System (ENS) phone was made at 0407 hours, January 2, 1991, to comply with the requirements of 10CFR50.72(b)(2)(iii)(D).

This report is being submitted in accordance with 10CFR50.73(a)(2)(V)(D).

PLANT AND SYSTEM IDENTIFICATION:

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

EVENT IDENTIFICATION: HPCI declared INOP due to MO 2-2301-5 significant valve packing leak.

A. CONDITIONS PRIOR TO EVENT:

Unit: Two Event Date: January 2, 1991 Event Time: 0143
Reactor Mode: 4 Mode Name: RUN Power Level: 92%

This report was initiated by Deviation Report D-4-2-91-002.

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 January 2, 1991, at 0143 hours, Unit Two was in the RUN mode at 92 percent rated core thermal power. An Equipment Attendant (EA) on routine rounds discovered a severe packing leak on High Pressure Coolant Injection (HPCI) [BJ] Turbine Steam Supply Outboard Motor Operated Isolation valve (MOV), 2-2301-5. Operating supervision and Radiation Protection (RP) were notified by the E.A.

The Nuclear Station Operator (NSO) closed HPCI Inboard Isolation Valve, 2-2301-4, and valve 2-2301-5. This stopped the steam leak. The NSO saw no changes in the Area Radiation Monitor (ARM) and Reactor Building Ventilation Exhaust Radiation Monitor readings.

At 0219 hours, the Shift Foreman (SF) inspected the valve. The NSO re-opened and closed the isolation valves and the SF reported the valve packing was blowing steam approximately 3 inches around the circumference of the valve stem. The operator could not adjust the valve packing because it was live load packing. The Shift Engineer (SE) then declared HPCI inoperable, retroactive to the time of discover, and initiated QOS 2300-01, HPCI Subsystem Outage Report. Mechanical Maintenance (MM) was notified of the problems and Nuclear Work Request Q89216 was initiated to repack the valve.

NRC notification of the event via the Emergency Notification System (ENS) phone was made at 0407 hours, January 2, '991, in order to comply with 10CFR50.72(b)(2)(iii)(D).

At 1225 hours, both of the isolation valves were taken Out of Service. By 1925 hours, January 3, 1991, MM finished repacking the valve and both valves were returned to service.

At 2005 hours on January 3, 1991, QOS 2300-4, HPCI System Power Operated Valve and Check Valve Testing at Cold Shutdown was performed to test the valve timing on the 2-2301-5 valve. The test was successful so the SE declared the system operable and terminated the outage report.

C. APPARENT CAUSE OF EVENT:

This event is being reported according to 10CFR50.73(a)(2)(v)(D), which required the licensee report any event that alone could have prevented the fulfillment of the safety functions or systems that are needed to mitigate the consequences of an accident.

The cause of this condition was packing failure on the HPCI MO-2-2301-5 isolation valve. Packing failure occurred due to a steam cut on the valve stem.

The packing of valve 2-2301-5 was last replaced on July 7, 1988, due to a valve packing leak.

D. SAFETY ANALYSIS OF EVENT:

The safety of the plant and personnel was not affected during this event. The packing leak did not affect the ability of the valve to close.

This valve is a normally open Primary Containment Isolation valve designed to close in the event of a break in the HPCI steam supply line. The 4 and 5 valves were both closed to provide the isolation function and HPCI was declared inoperable from the time of initial closure.

Technical Specification 3.5.C.2 allows for continued reactor operation for seven days in the event HPCI is found inoperable provided all active components of backup Emergency Core Cooling Systems (ECCS) are operable as specified in QOS 2300-01 Subsystem Outage Report. While HPCI was inoperable from the packing leak repair, the Low Pressure Coolant Injection (LPCI) mode of the Residual Heat Removal (RHR)[BO], Core Spray subsystems [BM], Automatic Pressure Relief (APR) [SB] subsystems, and Reactor Core Isolation Cooling (RCIC)[BN] system were proven operable.

Radiation levels were not affected from the steam leak. The NSO saw no increase in Torus Area ARM and the Reactor Building ventilation exhaust Radiation Monitor readings. The setpoint alarm on the ARM is 50 mR/hr and on the ventilation exhaust monitor is 3 mR/hr.

E. CORRECTIVE ACTIONS:

The isolation valves were closed and taken out of service. Valve 2-2301-5 was repacked under Nuclear Work Request Q89216. The valve was tested and returned to service.

The valve stem will be repaired and/or replaced by the end of Q2R11 outage, under Nuclear Work Request Q86337. This will be tracked under Nuclear Tracking System (NTS) 265-200-91-00201.

F. PREVIOUS EVENTS:

There have been three reportable previous events involving steam leaks due to valve packing failures:

LER	TITLE
86-034	HPCI Inoperable from 1-2301-5 valve leaking
88-005	Reactor Scram
89-022	Drywell Floor Drain leakage greater than 5 gpm.

From these occurrences, there are no notable trends.

A search of the Nuclear Plant Reliability Data System nationwide (NPRDS) found seven packing leaks of isolation valves of the same model installed in HPCI systems. There were no notable trends from this search.

G. COMPONENT FAILURE DATA:

The 2-2301-5 valve is a motor operated gate valve manufactured by Crane Company, catalog number 783-U.