

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Quad-Cities Nuclear Power Station, Unit 2										DOCKET NUMBER (2) 0 5 0 0 0 2 6 5					PAGE (3) 1 OF 5			
TITLE (4) Unit 2 Reactor Scram Due to High Reactor Pressure While in Hot Standby																		
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 NA				DOCKET NUMBER(S) 0 5 0 0 0					
1	0	2	5	8	4	8	4	0	1	0	0	0	1	1	6	8	4	0 5 0 0 0
OPERATING MODE (9) 3		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																
POWER LEVEL (10) 0 0 0		20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)				
		20.406(a)(1)(i)				50.36(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(c)				
		20.406(a)(1)(ii)				50.36(c)(2)				<input type="checkbox"/> 50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)				
		20.406(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(vii)(A)								
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(vii)(B)								
		20.406(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)								
LICENSEE CONTACT FOR THIS LER (12)																		
NAME H. DO										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								
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO						

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

On October 25, 1984, Unit 2 was in HOT STANDBY with all outboard Main Steam Isolation Valves closed. At 6:41 a.m., Unit 2 scrambled due to an increase in Reactor pressure resulting from a procedure deficiency which lacked specific instructions dealing with controlling Reactor pressure while in HOT STANDBY. During the scram, one control rod was not inserted because its scram discharge riser valve was mispositioned. The procedure is being revised and necessary measures have been taken to guard against a recurrence of this event. Core reactivity was under control and the Reactor was shutdown throughout the event, therefore, the safety implications were minimal.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

Event Description

On Wednesday evening, October 24, 1984, the Unit Two nightshift Control Room operator was assigned the task of bringing the unit to the HOT STANDBY condition per procedure QGP 2-4. At 5:46 a.m., on October 25, 1984, this procedure was completed through step D.35 and all outboard Main Steam Isolation Valves (MSIV) were closed. Once the outboard MSIVs were closed, it was observed that Reactor pressure started to increase. In an attempt to control pressure, additional control rods were inserted into the core. Since the Reactor core was already subcritical, the insertion of additional rods had no effect on the increasing pressure. A second attempt was made to control pressure by starting the Reactor Core Isolation Cooling (RCIC)(BN) System. RCIC tripped on overspeed and had to be manually and locally reset at the Turbine. Concurrently, the High Pressure Coolant Injection (HPCI)(BJ) System was started by another operator; but, the Reactor scrambled from a high pressure of 1044 psig at 6:41 a.m.

When the Reactor scrambled, one rod, K-13, remained at position 48. Control Rod K-13 was successfully inserted from the individual rod scram back-panel at 7:12 a.m. At 7:13 a.m. it was confirmed that all control rods were fully inserted.

Although other personnel performance and equipment failure concerns were identified, the actual consequences of this deviation were minimal. The Reactor properly tripped by a function of the Reactor Protection System. Although one control rod was not inserted during the scram, core reactivity was under control, and the Reactor was shutdown.

This report is being submitted as required by the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(iv).

Cause

The root cause of this scram was procedural inadequacies. Contributing causes were equipment failure and personnel performance.

Shutdown From Power Operation to Hot Standby procedure, QGP 2-4, failed to anticipate a possible pressure increase while in HOT STANDBY, due to decay heat from the core. This resulted in the lack of specific instructions dealing with such a condition.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

Cause (continued)

An inspection of the Hydraulic Control Unit (HCU) 38-51, which drives Control Rod K-13, revealed that the scram discharge riser valve, EP 305-112, was CLOSED, preventing the drive from venting properly when the scram took place. A thorough investigation was conducted to determine the root cause of the manual valve 112 being closed by re-examining Work Requests, Out of Service requests subsequent to the refueling outage, the September 18 hot scram timing surveillance tests, accumulator alarms logged in the Unit Operator's log book subsequent to the September 18 hot scram surveillance tests, and work performed on CRD modules in the vicinity of that for the K-13 HCU (on both units). Despite all of the above measures, the reason for valve EP 305-112 being in the improper position could not be determined.

The overspeed trip of RCIC is being investigated by Station Nuclear Engineering Department as per Action Item Record 4-84-27.

Personnel performance concerns centered around operator attentiveness at Unit One during the transient on Unit Two, and Shift Supervisor responsibilities during a transient.

Corrective Action

Shutdown From Power Operation to Hot Standby procedure, QGP 2-4, will be revised to include necessary steps to control Reactor pressure while in HOT STANDBY. All Control Room personnel were instructed to make a thorough review of the computer rod position scan as soon as possible after a scram to detect any unscrammed control rods as well as rods at intermediate position.

After the discovery of the mispositioned valve 112, Operating Department personnel inspected the other 176 HCU's on Unit Two and all 177 HCU's on Unit One to verify correct position of all valves. No other valves that would affect the operability of the drives were found mispositioned. The Shift Foremen were instructed to survey the position of all manual valves on the Hydraulic Control Units once per day, in the evening, for both units. This surveillance will continue until the six valves that control the major lines from the HCU are lockwired and valves associated with the accumulator charging equipment are relabeled to eliminate possible confusion.

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Corrective Action (continued)

The following additional corrective actions were taken in response to some of the Nuclear Regulatory Commission's concerns as mentioned in the Confirmatory Action Letter dated on October 26, 1984:

1. Friction, Timing, Scram and Stall Flow Tests were performed on Control Rod Drive 38-51 per procedures QTS 130-1, 3, and 4 prior to its removal. All results obtained from these tests were found acceptable.
2. The Control Rod Drive 38-51 was replaced by a new drive and operability tests were conducted on the newly installed drive per procedures QTS 130-1, 3, and 4. All results of the Friction, Timing, Scram, and Stall Flow tests were within limits specified in the appropriate procedures.
3. The internals of the removed Control Rod Drive were examined. No excessive wear or damage was found on the seals of the drive piston, on the bushing of the stop and drive pistons, on the index tubes, and on the spring washers of the stop piston. The seal on the stop piston was found to be damaged, however, this has been considered as normal wear.
4. The Control Room operators were instructed not to leave an operating unit unless Control Room evacuation is necessary. The method of relief when leaving the Control Room or going behind the control panels does not change. If one of the units requires the help of an additional operator, either the center desk operator or the operator from the stable unit may assist, but not both at the same time. There must always be a qualified operator, at the control, who is aware of his responsibility, left in charge of the stable unit. Also, all Operating personnel were instructed not to attempt a shift change when a unit is experiencing a transient. The shift change must wait until the unit is stabilized. The apparent reason for Control Rod K-13 failure to scram was discussed with all Equipment Attendants and Operators so that they can be on the alert for other incidents of a similar nature.

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Corrective Action (continued)

5. As a result of the deviation, the Corporate Office is re-evaluating their Nuclear Stations Division Directives and will issue any necessary revisions.

Items 1, 2, and 4 were completed prior to the return of Unit Two to service.

There have been no previous occurrences of this type at Quad-Cities Station.



**Commonwealth Edison**

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NJK-84-356

November 16, 1984

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 number 84-10,  
for Quad-Cities Nuclear Power Station.

This report is submitted to you in accordance with the  
requirements of the Code of Federal Regulations, Title 10, Part  
50.73(a)(2)(iv), which requires reporting of any event or condition  
that resulted in manual or automatic actuation of any engineered  
safety feature.

Respectfully,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis  
Station Superintendent

NJK:HQD/bb

Enclosure

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

IE 22  
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