NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Quad-Cities Nuclear Power Station, Unit 2	0 5 0 0 0 2 6 5	1 OF 0 2

TITLE (4)

Unit Scram Caused By #4 Turbine Control Fast Closure

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)
									NA	0 5 0 0 0
0 6	1 0	8 4	8 4	0 0 7	0 2	1 0	1 5	8 4		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
4		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 8 6		20.405(a)(1)(ii)	50.36(c)(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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
H. Q. Do	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	
B	J J	0 1 3 3	N 0 0 7	Y							

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)

On June 10, 1984, at 1:50 a.m., Unit 2 was at 86% core thermal power and the weekly Turbine test, QOS 5600-1, was in progress. Control Valves 1 through 3 operated properly, but when the test switch for Control Valve #4 was depressed the valve immediately fast closed. The resulting pressure spike collapsed the voids in the vessel and a trip of the Reactor Protection System was received due to high neutron flux. It has been determined that the 90% closed limit switch is remaining engaged, causing contacts in the valve test circuit to remain closed, and thereby fast closing the #4 Control Valve in the test mode. This line and switch will be examined at the next opportunity. Until then, a wire in the test circuit of the #4 Control Valve has been lifted to prevent this fast closure in the test mode. A temporary procedure was instituted to enable the weekly Turbine test to be performed without a recurrence of this incident.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Quad-Cities Nuclear Power Station, Unit 2	0 5 0 0 0 2 6 5	8 4	— 0 0 7	— 0 2	0 2 OF 0 2

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

Event Description

On June 10, 1984, at 1:50 a.m., Unit Two was at 86% core thermal power and the weekly Turbine test, QOS 5600-1, was in progress. Part of this procedure demonstrates that a half scram signal is received when the Control Valve fast closure solenoid is energized. Control Valves 1 through 3 tested properly, but when the test switch for Control Valve #4 was depressed the fast closure solenoid energized immediately and the valve fast closed. The resulting void collapse in the vessel caused the neutron flux to increase and the Reactor Protection System tripped on an APRM Hi-Hi signal. All control rods inserted to position 00 and a normal trip recovery was initiated. This occurrence is being reported as required by 10 CFR 50.73-(a)(2)(iv).

Cause

Cause of this event is equipment failure. The 90% closed limit switch was already closed when the test button was pushed and this enabled the fast closure solenoid to energize and fast close the valve. The limit switch is manufactured by NAMCO, Model Number EA 700-70100.

Corrective Actions

As suspected, the 90% closed limit switch was stuck in the closed position. Due to the intense heat near the Control Valves, it was decided to remove the switch and determine the exact cause of its failure in the Maintenance Department shop. The switch was replaced with a like-for-like replacement. The investigation performed on the switch revealed that the failure could not be determined, as the switch functioned as designed when bench-tested.

The wire that was lifted, so that this event would not recur while the defective switch was still in place, was relanded. The half-scram signal associated with the Control Valve's fast closure solenoid being energized was then successfully tested. The temporary procedure that was written to allow testing of the Control Valves with the switch in this condition was discontinued. Modification M-4-1(2)-84-20 is now being processed and will provide indication, in the Control Room, of when the 90% closed limit switches are picked-up. This will aid the Operator when executing procedure QOS 5600-1, Weekly Turbine Tests, by indicating to him whether it is safe to proceed. This modification, once implemented, will prevent this event from occurring again at this facility.

Commonwealth Edison
Quad Cities Nuclear Power Station
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Cordova, Illinois 61242
Telephone 309/654-2241

NJK-84-319

October 15, 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 (LER) 84-007, Revision 2, 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), to inform you of the corrective actions taken due to the Unit Two scram caused by the #4 Turbine Control Valve going fast closed.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

L. F. Gerner for

N. J. Kalivianakis
Station Superintendent

NJK:HQD/bb

Enclosure

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

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