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 1	0 5 0 0 0 2 5 4	1 OF 0 3

TITLE (4)

Reactor Core Isolation Cooling Inoperable Due to Failed Overspeed Meter

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 7	2 8	8 5	8 5	— 0 1 0	— 0 0		0 8	1 5	8 5		0 5 0 0 0

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)	50.36(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, 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
Ken Hill, Technical Staff	3 0 1 9 6 5 4 1 - 2 2 1 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 N	I L	G 0 8 0	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 July 28, 1985, Unit 1 was operating in the RUN mode at 99 percent of rated core thermal power. At 8:40 p.m., the Reactor Core Isolation Cooling (RCIC) (BN) Turbine overspeed and RCIC Turbine trip alarms were received while RCIC was not operating. RCIC was declared inoperable and High Pressure Coolant Injection (HPCI) (BJ) operational surveillances were initiated. The cause of this event was a failed light bulb in the RCIC overspeed meter relay. The light bulb apparently reached its end of life. The burnt out light bulb was replaced and RCIC operability surveillances were completed.

This report is submitted to you in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(v), which requires the reporting of any event that alone could have prevented the fulfillment of a system needed to shutdown the Reactor.

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

Event Description

On July 28, 1985, Unit 1 was operating at approximately 99 percent core thermal power. At 8:40 p.m., the Reactor Core Isolation Cooling (RCIC) (BN) Turbine overspeed and RCIC Turbine trip alarms were received in the Control Room while RCIC was not operating. The Shift Engineer and Shift Control Room Engineer were notified. The Operator closed the upstream steam supply isolation valves MO 1-1301-16 and 17, then attempted to open downstream steam supply isolation valve MO 1-1301-61. It did not open, therefore, an actual isolation of the RCIC Turbine existed. RCIC was declared inoperable and High Pressure Coolant Injection (HPCI) (BJ) operational surveillances, QOS 2300-2 and 3, were initiated. HPCI valve operability surveillance, QOS 2300-S3, was completed at 9:30 p.m. on the same day.

Because the cause of the RCIC alarms was determined and corrected by 1 a.m., on July 29, 1985, QOS 2300-S2 was terminated. HPCI had been demonstrated operable during the regular monthly surveillance on July 23 and was available at all times during this event, thus the safety consequences of this event were minimal.

Cause

The cause of this event was a failed light bulb in the RCIC overspeed meter relay. The light bulb apparently reached its normal end of life. The meter relay has an optical system that will trip the RCIC TURBINE OVER-SPEED alarm when the meter arm blocks the light beam between the lamp and the photoelectric sensor. If the light bulb burns out, this will also register as a trip. The bulb is a General Electric W1810 meter relay lamp bulb.

Corrective Action

Instrument Maintenance replaced the burned out light bulb and the alarms were successfully reset. RCIC monthly operability surveillance QOS 1300-2 and 3 was completed and RCIC was declared operable at 1 a.m. on July 29, 1985. There was one previous occurrence of a similar failure of the relay bulb on Unit 2. This occurrence is documented in Deviation Report 4-2-84-75.

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

Corrective Action (continued)

The electronic overspeed trip, along with the mechanical overspeed trip, is designed to protect the Turbine from operating at speeds greater than the Turbine's rated speed. The setting for the electronic overspeed trip is lower than that of the mechanical overspeed trip, because the mechanical overspeed trip is not remotely resettable. The mechanical overspeed trip requires an Operator near the Turbine itself, whereas the electronic overspeed trip may be reset from the Control Room. This Deviation Report documents one problem with the electronic overspeed trip system. In addition, it has been found that the acceleration of the Turbine is most always so fast that the electronic trip cannot stop the Turbine before the mechanical overspeed trip actuates. This problem is discussed in General Electric SIL No. 382, which recommends removing the electrical overspeed system. Action Item Record 4-85-16 was initiated to investigate modifying or removing the electronic overspeed trip system.

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NJK-85-225

August 15, 1985

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One

Enclosed please find Licensee Event Report (LER) 85-010, Revision 00, 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)-(v), which requires the reporting of any event that alone could have prevented the fulfillment of a system needed to shutdown the Reactor.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Manager

NJK:BRS:bb

Enclosure

cc J. Wojnarowski
A. Madison
INPO Records Center
NRC Region III

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