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 3

Title (4) Unit 2 Reactor Scram Due to a Spurious Group I Isolation caused by air hose striking instrument rack.

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 3	8 6	8 6	0 0 1	0 0	0 1	2 7	8 6		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 7	___ 20.402(b)	___ 20.405(c)	X 50.73(a)(2)(iv)	___ 73.71(b)
		___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 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
K. J. Hill, Technical Staff Engineer Ext. 2150	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	L F			N							

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 January 3, 1986, Unit Two was operating in the RUN mode at 97% of rated thermal power. At 1425 hours a Group I Isolation occurred with a subsequent Reactor Scram. The isolation signal was generated spuriously when an air hose being used by contractor personnel broke loose from a Chicago fitting clamped to the hose, and struck an instrument rack. The root cause of the event was failure of the hose connection. Air hose connections have been and will continue to be inspected whenever a hose is returned to the tool room. Additional corrective action to include investigating putting protective fences around the affected switches, and possible replacement of the switches with an analog type which are less susceptible to spurious trips of this type.

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 the reporting of any event that resulted in the actuation of any Engineered Safety Feature.

IE 22

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 MWt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

IDENTIFICATION OF OCCURRENCE:

Air hose came detached and struck Main Steam Line Differential Pressure switches causing a Group I isolation which in turn caused a Reactor Scram.

Discovery Date: 01/03/86

Report Date: 01/27/86

This report was initiated by Deviation Report D-4-2-86-01

CONDITIONS PRIOR TO OCCURRENCE:

Run Mode(4) - Rx Power 97% - Unit Load 800 MWe

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).

DESCRIPTION OF OCCURRENCE:

At 1425 hours, on January 3, 1986, Unit Two Reactor received a Group I Isolation signal and subsequently scrammed due to the closure of the Main Steam Line Valves (MSIVs). The 902-5 panel in the control room indicated that the isolation signal signal was caused by high main steam line flow. Unit Two was operating in the RUN mode at 97% of rated thermal power prior to the event.

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 the reporting of any event that resulted in the actuation of any Engineered Safety Feature.

APPARENT CAUSE OF OCCURRENCE:

The cause of the isolation and scram was failure of an air hose connection. An air hose broke loose from a Chicago fitting attached to the hose, and struck instrument rack 2202-10 causing a spurious Group I isolation signal. Two contractor personnel were preparing to clean welds for Nutech Hanger M-1806-21 in the south Residual Heat Removal System (RHR)[BO] room. To clean the welds the two used an air-powered grinder which was connected to service air with 3/4 inch standard air hose and Chicago Fittings. One contractor noticed a safety pin (there are two required) was missing between the Chicago fittings. As he was installing the

missing safety pin, the other contractor picked up the grinder in preparation to clean the weld. At this time the Chicago fitting came out of the hose. The Chicago fitting was a standard barbed end type and was clamped to the hose by a worm-drive type clamp. The hose had been in use earlier that morning and during the previous day. The loose end of the hose, still under pressure, began thrashing violently, striking instrument rack 2202-10 several times. The C and D Main steam lines each have 4 differential pressure switches (DPIS 2-261-2) located on this rack. The contacts of the switches are wired in a one-out-of-two-twice logic arrangement to give a Goup I Isolation on high steam line flow. Spurious activation of one of these switches on each division would have caused the isolation signal.

ANALYSIS OF DEVIATION:

The MSIVs close on a Group I Isolation signal. MSIV closure initiates a Reactor Scram signal, when operating in the RUN mode, when the isolation valves reach 10% closed from the full open position. This scram anticipates the pressure and flux transients which would occur when the valves fully closed. All systems functioned as designed upon initiation of the isolation signal. Operator action was to control reactor water level and reopen the MSIVs to control reactor pressure. Proper equipment operation and prompt operator action minimized the consequences of this event. The affected instruments were inspected by the Instrument Maintenance Department and found to be undamaged.

CORRECTIVE ACTION:

The station will continue to inspect all air hose connections whenever a hose is returned to the tool room. Action Item Record (AIR) 86-04 has been initiated to investigate replacing the presently installed differential pressure switches with analog devices, which are less susceptible to the spurious trips of this type. The current switches are manufactured by Barton, model No. 278. In the interim, the station Technical Staff will investigate placing barriers around the racks. Installation of barriers will be contingent upon obtaining a design which addresses seismic concerns and physical space limitations. The eventual replacement of the Barton switches with analog devices will prevent recurrences of this type.

FAILURE

There have been several occasions in the past where inadvertent contact with instrument racks has caused a Reactor Scram. The most recent occurrence was on February 16, 1983, when a spurious high steam line flow signal caused a Group I isolation and scram. This incident is recorded in DVR 4-1-83-16.

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NJK-86-23

January 28, 1986

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) 86-01, 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)(iv), which requires the reporting of any event that resulted in the actuation of any Engineered Safety Feature.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Manager

NJK/MSK/dak

Enclosure

cc: J. Wojnarowski
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