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RLB-91-17

January 21, 1991

U. S. Nuclear Regulatory Commission
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Washington, DC 20555

Reference: Quad Cities Nuclear Power Station
Docket Number 50-254, DPR-29, Unit One
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 90-033, Revision 00, 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)(iv): The licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF).

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/MJB/jmt

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)
Quad Cities Unit One	0 5 0 0 0 2 5 4	1 of 0 4

Title (4)

ESF Actuation When A SBGT Auto Start and Rx Bldg Vents Isolated Due to Component Failure

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)
									Quad Cities 2	0 5 0 0 0 2 6 5
1 2	2 3	9 0	9 0	0 3 3	0 0	0 1	2 1	9 1		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)					
	3	___ 20.402(b)	___ 20.405(c)	X 50.73(a)(2)(iv)	___ 73.71(b)		
POWER LEVEL (10)	0 0 0	___ 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
Rachel Hamann, Technical Staff Ext. 2119	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	V I	I F U	X 9 9 9	N					
X	V A	R L Y	G 0 8 0	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)

ABSTRACT:

On December 23, 1990, Unit One was in cold shutdown for a refueling outage and Unit Two was in the RUN mode at 97 percent of rated core thermal power. At 0754 hours, the following alarms annunciated in the Control Room: C-16, Fuel Pool Channel A Downscale; H-3, Rx Bldg Vent Channel B Hi Hi Rad; B-18, Rx Bldg Vent Stack Low Flow; and D-3, Control Room Vent Isolated. In addition, Standby Gas Treatment (SBGT) auto started, Reactor Building and Control Room Ventilation (HVAC) isolated and the Drywell to Torus Purge Fans tripped. At 1028 hours, an Emergency Notification System (ENS) phone call was made as required by 10CFR 50.72(b)(2)(ii).

The apparent causes for this event were a blown fuse for the Control Room HVAC Isolation Logic and a burnt out coil for the Reactor Building Vent Isolation Relay.

After repairs were made, the affected systems and components were successfully tested, returned to their normal configuration, and restarted by 1905 hours.

This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv).

PLANT AND SYSTEM IDENTIFICATION:

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

EVENT IDENTIFICATION: ESF Actuation When A SBGT Auto Start and Rx Bldg Vents Isolated, Due to Component Failure

A. CONDITIONS PRIOR TO EVENT:

Unit: One Event Date: December 23, 1990 Event Time: 0754
Reactor Mode: 3 Mode Name: STARTUP Power Level: 00%

This report was initiated by Deviation Report D-4-01-90-149

STARTUP/HOT STANDBY Mode (3) - Startup/Hot Standby - In this position, the reactor protection scram trips, initiated by condenser low vacuum and main steamline isolation valve closure are bypassed, the low pressure main steamline isolation valve closure trip is bypassed and the reactor protection system is energized, with IRM and APRM neutron monitoring system trips and control rod withdrawal interlocks in service.

B. DESCRIPTION OF EVENT:

On December 23, 1990, Unit One was in cold shutdown for a refueling outage with the mode switch in the Startup position. Unit Two was in the RUN mode at 97 percent of rated core thermal power. At 0754 hours, the following alarms [ALM] annunciated [ANN] in the Control Room [NA]: C-16, (901-3 panel), Fuel Pool Channel A Downscale; H-3, (901-3), Rx Bldg Vent Channel B Hi Hi Rad; B-18, (901-4), Rx Bldg Vent Stack low flow; and D-3, (901-5), Control Room Vent Isolated. The A Standby Gas Treatment (SBGT) system [BH] auto started, Reactor Building (Rx Bldg) Ventilation (VENT)(HVAC) [VA] Isolated, Drywell [NH] to Torus Purge Fans [FAN] tripped, and Control Room (CR) Ventilation (HVAC) isolated and activated the recirculation mode. An operator was dispatched to the B HVAC room and toxic gas sample point C was selected for the recirculation mode of Control Room Ventilation. Radiation Protection was notified to evacuate the Drywell for personnel safety, due to the Drywell/Torus Purge Fan trip. Radiation Protection was also instructed to survey the Reactor Building [NG] Vent Fan Floor and the Refuel Floor [ND] due to the Reactor Building Vent Isolation. At 1028 hours, an Emergency Notification System (ENS) phone call was completed as required by 10CFR 50.72(b)(2)(ii).

During the investigation of the event, fuse [FU] F-14 for the Control Room Vent Isolation Logic was found blown and replaced. Also, the Reactor Building Vent Isolation Relay [RLY] 1705-103, which deenergizes on B Rx Bldg Vent Rad Monitor high, was found to have a burnt-out coil. The burnt-out coil caused the relay to open and Reactor Building Vents to isolate. This coil was due to be replaced during the refuel outage as part of a CR120 relay change out. The CR120 change out was recommended by the manufacturer due to a failure history of burnt-out coils because of a bad design. Electrical Maintenance (EM) was notified and the relay coil was replaced under work request Q74174. Reactor Building Ventilation was reset and the fans were restarted at 1835 hours. At 1900 hours, Control Room Ventilation was reset and toxic gas sample point A was selected. At 1905 hours, the Drywell/Torus Purge Fans were restarted.

C. APPARENT CAUSE OF EVENT:

This event is being reported according to 10CFR 50.73(a)(2)(iv), which requires that the licensee report any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF).

Fuse F-14 for the Control Room Vent Isolation Logic was found blown and replaced. The coil for relay 1750-103, Reactor Building Vent Isolation Relay, was found to have a burnt-out coil.

The blown fuse and burnt out coil are two isolated incidents and the failures are not related to each other. It is not known why the fuse failed.

D. SAFETY ANALYSIS OF EVENT:

The safety consequences of this event are minimal. In accordance with Technical Specifications, the Reactor Building Ventilation system is designed to isolate on the following signals: exhaust high rad, refuel floor high rad, high drywell pressure, and reactor low water level. The system functioned as designed. As per design, when the Reactor Building Ventilation isolated, the Control Room Ventilation also isolated and Standby Gas Treatment auto started.

E. CORRECTIVE ACTIONS:

An investigation was completed which found the Control Room Vent Isolation F-14 fuse blown and the coil for the Reactor Building Vent Isolation relay burnt-out. Electrical Maintenance replaced Fuse F-14 and the coil for relay 1705-103 and successfully tested the system. The blown fuse and burnt relay coil are located in different circuits; therefore, there is no correlation between the two failures. Based on the corrective actions completed, no further action is deemed necessary at this time.

F. PREVIOUS EVENTS:

There have been several recent events which caused Reactor Building Ventilation to isolate and Standby Gas Treatment to auto start. These events are isolated incidents with different causes.

D4-2-86-065 (LER 86-18)	SBGT Auto Start from Rx Bldg Ventilation caused by high radiation levels on the fourth floor of the Rx Bldg
D4-2-88-038 (LER 88-19)	Rx Bldg Ventilation Isolation while taking 2-1601-56 OOS
D4-2-90-026 (LER 90-07)	Rx Bldg and CR Ventilation Isolation while working on CR120 relays
D4-2-90-010 (LER 90-05)	Group II Isolation, Rx Bldg Ventilation Trip and Auto Start of B SBGT, caused by personnel error while performing QIS 6-2

G. COMPONENT FAILURE DATA:

Fuse F-14 is a 5 amp fuse. Relay 1705-103 is made by General Electric. The fuse and relay are not reportable to NPRDS.