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Quad Cities Nuclear Power Station
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RLB-91-042

February 2, 1991

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 is Licensee Event Report (LER) 90-001, 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.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/MJB/jlg

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) Quad Cities Unit One
 Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 5 | 4 | 1 | of | 0 | 5
 Page (3) 1 of 0 5
 Title (4) Partial Group II Actuation from Fuse Removal for OOS Work.

Event Date (5) 0 | 1 | 0 | 5 | 9 | 1 | 9 | 1
 LER Number (6) 0 | 0 | 1
 Report Date (7) 0 | 2 | 0 | 4 | 9 | 1
 Other Facilities Involved (8) Facility Names, Docket Number(s)

OPERATING MODE (9) 1
 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)
 20.402(b) 20.405(c) 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 Ray Petri, Ext. 2110
 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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	W K	C B L 3	U K I	N					

SUPPLEMENTAL REPORT EXPECTED (14)
 Expected Submission Date (15) X | NO
 Month | Day | Year

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

ABSTRACT:

On January 5, 1991, at 1820 hours, Unit One was in the SHUTDOWN mode at 0 percent of rated core thermal power. At that time several fuses [FU] were pulled as part of an out of service (OOS). Pulling these fuses caused several primary containment isolation valves [ISV] to close in addition to those addressed in the OOS, which constitutes a partial Group II Isolation.

After an evaluation to determine the cause of the actuation, the fuses were reinserted and the affected valves were reopened. Further corrective actions will include more detailed review of equipment out of service requests.

On January 10, 1991, at 0755 hours, Unit One was in the REFUEL mode. At that time, conduit containing wires to the Drywell Floor Drain Sump Discharge Isolation Valve limit switches was moved. The movement of a chaffed wire inside the conduit created an electrical short and caused a fuse to blow. This caused two of the same valves to close that were affected in the January 5 event, which constituted another partial Group II Isolation. The fuse was replaced and the affected valves were reopened. Further corrective actions will include replacement of the chaffed wire prior to restoring the system to service.

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv).

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

At 2157 hours, an Emergency Notification System (ENS) phone call was completed as required by 10CFR50.73(a)(2)(iv).

Out of service #1191 was revised, and completed at 1411 on January 8, 1991, to take only the AO-1-2001-3 and QO-1-2001-4 valves OOS electrically. The OOS consisted of taking out the control switches and the breakers for the drywell floor drain sump pumps and isolating the air and taking out the control switches to valves AO-1-2001-3 and AO-1-2001-4, however, leaving the limit switches energized.

On January 10, 1991, at 0755 hours, Unit One was in the REFUEL mode at 0 percent of rated core thermal power. Substation was in the process of checking the wiring on the limit switches for the AO-1-2001-3 valve. Upon movement of the conduit for the wires leading to the limit switches, fuse #7 in panel 901-40 blew. This constituted a partial Group II actuation closing the AO-1-4720 valve and the AO-1-2001-15 valve. Additionally, the Reactor Building Floor Drain Sump pumps tripped off.

At 0835 hours on January 10, after the cause of the partial Group II actuation was determined, the fuse was replaced, valves reopened, and sump pumps reset.

At 0915 hours, an Emergency Notification System (ENS) phone call was completed as required by 10CFR50.73(a)(2)(iv)

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv).

The cause of the partial Group II actuation on January 5, 1991 was personnel error. Specifically, personnel requesting the OOS, preparing the OOS and reviewing and approving the OOS failed to recognize that a partial Group II actuation would occur as a result of performing OOS #1191.

The cause of the partial Group II actuation at 0755 hours on January 10, 1991 was equipment failure. Fuse #7 in control room panel 901-40 had blown as a result of a chaffed limit switch wire making contact with the conduit which contained the wire. The chaffed wire was inspected when the wires were removed from the conduit. The wire may have become chaffed as a result of the limited space inside the conduit connector and previous movements of the wires through the connector.

D. SAFETY ANALYSIS OF EVENT:

The safety consequences of this event were minimal. Unit One was in a refuel outage with the drywell head removing during both events. The Drywell Pneumatic Air Compressor is not required to be operable unless Primary Containment is in effect. All valves affected by these events failed in the safe direction, that being closed. The drywell equipment sump isolation valves are only necessary to be open when pumping the sumps and were not needed to provide containment isolation during the event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION										Form Rev 2.0												
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TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]																						

E. CORRECTIVE ACTIONS:

The immediate corrective action for the January 5, 1991 event was to suspend performance of the OOS and to determine the cause of the partial Group II isolation. Upon determination that the valves closed as a result of pulling the fuses, the fuses were replaced and the valves opened. Out of Service #1191 was revised to only isolate the AO-1-2001-3 and AO-1-2001-4 valves.

The immediate corrective action for the January 10, 1991 event was for Substation to notify the control room. The fuse was then replaced and the valves were reopened. Additional changes were made to OOS #1191 to lift leads in the control room to deenergize the limit switch wiring to AO-1-2001-3 and AO-1-2001-4. Corrective action involved replacing the affected wire (which was part of the modification) and increasing the size of the conduit connector from 1/2 inch to 3/4 inch. This allows more room for the wiring inside the connector and reduces the chances of future chaffing of the new wire inside the connector.

A meeting was held on January 11, 1991 to review these two and four previous recent ESF actuations that have occurred since December 20, to identify actions needed to minimize future actuations.

The following corrective actions were developed as a result of that meeting.

1. Regulatory Assurance has provided shift personnel copies of past out of service errors for their review of the lessons learned.
2. Work analysts have been provided guidelines to help identify potential ESF's during preparation of work packages. Information on potential ESF situations will be provided to the field workers.
3. Work remaining to be performed this outage is being reviewed for areas of high risk with respect to potential ESFs. Each work group has established one individual as responsible for this activity and it will be that individual's responsibility to perform this review of work planned daily until the end of the outage.
4. A memo was issued to all departments requesting out of service requests identify all affects of the requested OOS i.e. effects on other circuits, valves, interlocks etc.
5. Each work group with OOS requests pending prior to the issuance of the above memo has reviewed those OOS for potential effects in other equipment and potential ESF actuations.
6. The out of service request form QAP 300-S31 will be revised to include an area to identify the effects of performing the required out of services.
(NTS 2542009000201)

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7. Electrical print reading training will be provided to those personnel who are required to review out of services. This will enhance the reviewers ability to identify potential ESF actuations prior to performance of the out of service. (NTS 2542009000202)
8. Regulatory Assurance has identified station department equipment and work practices which have the potential to cause an ESF. These practices will be reviewed to establish actions required to eliminate this potential. (NTS 2542009100203)

During the investigation of this event a communications problem was identified between the operating department and substation. This communication problem had no impact on this event, however it is being investigated under the HPES program (90-02). (NTS 2542009000204)

F. PREVIOUS EVENTS:

There are no previous ESF actuations involving improper electrical out of service for the valves involved. However, the following events involved OOS electrical errors which produced ESF's:

<u>LER/DIR NUMBERS</u>	<u>DESCRIPTION</u>
85-003	Unexpected Group II Isolation Signal and Standby Gas Auto-Start During Mod Test
88-019/(D4-2-88-038)	Rx Building Vent Isolation while taking 2-1601-56 OOS
90-007/(D4-1-90-026)	Rx Vent and CR Vent Isolation

The following is a list of other ESF actuations that have occurred since December 20, 1990.

LER 254/90-26	(D4-1-90-146)	Control room HVAC Isol. from Dry Probe
LER 254/90-33	(D4-1-90-149)	Blown fuse failed relay coil
LER254/90-34	(D4-1-90-150)	Control room HVAC manual Isol. from Dry Probe
LER 254/91-002	(D4-1-91-004)	Lifted lead due to personnel error

G. COMPONENT FAILURE DATA:

There was no component failure for the January 5, 1991 event. The event of January 10, 1991 involved chaffed insulation on #14 SIS wire. These wires are not NPRDS reportable.