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RLB-90-262

October 19, 1990

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) 90-020, 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)(ii)(B): The licensee shall report any event or condition that resulted in the nuclear power plant being in a condition that was outside the design basis of the plant.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
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) Quad Cities Unit One | Docket Number (2) 0 5 | 0 | 0 | 0 | 2 | 5 | 4 | Page (3) 1 | of | 0 | 5

Title (4) Continuous Fire Watches Being Performed On A Twenty Minute Roving Basis Due To A Misinterpretation Of Continuous Fire Watch.

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	9	2	0	9	0	9	0	0	2	5	4	1	of	0	5
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)															

OPERATING MODE (9)	4	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	1 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)	X 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: E. Hayden Smith, Technical Staff | Ext. 2156 | TELEPHONE NUMBER: 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	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

[Yes (If yes, complete EXPECTED SUBMISSION DATE)] X | NO | Expected Submission Date (15) | Month | Day | Year

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

ABSTRACT:

At 1048 hours on September 20, 1990, Unit One was in the RUN mode at 100 percent of rated core thermal power. At this time, it was determined that a misinterpretation of the meaning of continuous fire watch had occurred. It was also determined that the hatchways for the Unit One Cable Tunnel had been opened without establishing any compensatory measures. A fire watch was in effect for several other areas in the plant as a roving twenty minute fire watch which actually required a continuous fire watch. The cause of this event is personnel error. The requirements of a continuous fire watch were perceived to be satisfied by a roving twenty minute inspection. The hatchways to the cable tunnel were not known by the Operating Department to be fire barriers. Continuous fire watches were immediately established for the necessary areas. All fire barriers will be inspected to ensure that they are designated as such. QAP 1170-14 has been changed to describe a continuous fire watch and the existing fire protection program will be enhanced to avoid any future confusion. This report is being submitted per 10CFR50.73(a)(2)(ii)(B).

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

PLANT AND SYSTEM IDENTIFICATION:

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

EVENT IDENTIFICATION: Continuous Fire Watches Being Performed on a Twenty Minute Roving Basis Due to a Misinterpretation of Continuous Fire Watch.

A. CONDITIONS PRIOR TO EVENT:

Unit: One Event Date: September 20, 1990 Event Time: 1048
 Reactor Mode: 4 Mode Name: RUN Power Level: 100%

This report was initiated by Deviation Report D-4-1-90-095

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).

B. DESCRIPTION OF EVENT:

At 1048 hours on September 20, 1990, Unit One was in the RUN mode at 100 percent of rated core thermal power. At this time, through discussions with Corporate Fire Protection Personnel, it was determined that a twenty minute roving fire watch does not satisfy the requirements of a continuous fire watch.

The requirements for a continuous fire watch are stated in Technical Specifications, and station procedures, but is not defined. Due to a misinterpretation of a 'continuous' fire watch, all 'continuous' fire watches in effect at this time were being performed on a roving twenty minute basis instead of a full time basis.

At this time it was also discovered that the Unit One Cable [CBL] Tunnel was required to have a continuous fire watch per Technical Specifications, but no fire watch had been established. Specification 3.12.F.2. requires that with a penetration [PEN] fire barrier not intact, a continuous fire watch shall be established on at least one side of the affected penetration.

During August, 1990, an equipment hatch and a normal access hatch in the Unit One Cable Tunnel had been opened in order to provide an adequate egress for contractors working in the area as it is considered to be a confined space. The ceiling of the Unit One Cable Tunnel is a fire barrier with three hour or equivalent rated penetrations as per Volume Two, Section 4.8.7 of the Fire Protection Program Documentation Package. Thus with these hatches open, the fire barrier was no longer intact and a fire watch was then required, but no fire watch was established.

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Due to the work being performed in the Cable Tunnel, the detection [DET] system had been temporarily disabled and a once an hour fire watch had been put into effect. In addition to this fire watch, there had been a roving fire watch throughout the area adjacent to the Unit One Cable Tunnel.

On February 6, 1990, the fire door [DR] that separates the Unit One Northeast Residual Heat Removal (RHR) [BO] room from the Unit Two Southeast RHR room had been declared inoperable. The door had been declared inoperable due to a missing label supplied by Underwriters Laboratory (UL) that is required by the National Fire Protection Association (NFPA) to show that this door is capable of withstanding a fire for at least three hours. A roving fire watch was established, while Technical Specification 3.12.F.2. required that a continuous fire watch be established on at least one side of this door.

During an investigation of all areas of the plant for combustible loading, it was determined in March 1990, that some areas required a 'continuous' fire watch per station procedure QAP 1700-1, Flammable and Combustible Materials Control. As stated previously, 'continuous' was interpreted to mean roving, so these fire watches were implemented as roving twenty minute fire watches in accordance with station procedure, QAP 1170-14, Fire Watch Responsibilities. Due to the misinterpretation, these areas were not in strict compliance with QAP 1700-1.

There are specific floor areas in the plant required to be free of combustibles. The redundant divisions of safe shutdown cables located in these areas are required to be separated per Appendix R. Any significant amount of combustible material stored in these areas may prevent the use of both divisions in the event of a fire. The Unit One Reactor [RCT] Building, elevation 595'-0", Unit Two Reactor Building, elevation 595'-0", Unit One Reactor Building, elevation 623'-0", and the Unit One Turbine [TRB] Building, elevation 615'-6", all contain this combustible free zone that is designated by a red painted section of the floor. These areas contained wood blocks [BLK] used for skid protection of scaffolding necessary for work in these areas. The wood blocks subsequently caused the requirement of a continuous fire watch to be established per QOS 4100-15, Transient Combustible and Water Protection Surveillance. Again a roving twenty minute fire watch was established instead of a continuous fire watch.

All roving twenty minute fire watches in effect at this time were replaced by a full time continuous fire watch and a continuous fire watch was placed in the Unit One Cable Tunnel.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(ii)(B) which requires that the licensee report any condition that was outside the design basis of the plant.

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The primary cause of this event is personnel error. The requirements of a continuous fire watch was perceived as being satisfied with a roving twenty minute fire watch. This misinterpretation of a continuous fire watch was caused by the fact that during Appendix R modifications to existing fire protection systems, QAP 1900-16, Continuous Fire Watch Surveillances, was written for specific areas of the plant. This procedure stated a twenty minute roving fire watch was adequate to fulfill the requirement of a continuous fire watch while fire protection systems were rendered inoperable. This was a similar approach approved by the NRC for use at Dresden Station.

A contributing cause was that the Unit One Cable Tunnel hatchways were opened without establishing any compensatory measures because the ceiling of the Unit One Cable Tunnel was not commonly known as a fire barrier.

D. SAFETY ANALYSIS OF EVENT:

The safety of the plant and the public was not affected by this event. During the time that these Cable Tunnel hatchways had been opened, a twenty minute roving fire watch was in effect in the area adjacent to the Unit One Cable Tunnel. There was also an hourly fire watch in effect inside the tunnel as the detection system was declared inoperable. Other areas that were required to have a continuous fire watch had a roving fire watch that inspected each area every twenty minutes. There were no fires during the time that a continuous fire watch was being performed as a roving twenty minute fire watch.

E. CORRECTIVE ACTIONS:

The immediate corrective action was to establish a full time continuous fire watch as required by Technical Specification section 3.12.F.2., QAP 1700-1, and QOS 4100-15. This was accomplished by placing a person inside the Unit One Cable Tunnel, at the fire door that separates the Unit One RHR room from the Unit Two RHR room, and at every area which exceeded its combustible loading limit. As further corrective action, all openings to both cable tunnels will be painted to designate that they are fire barrier penetrations and must be kept closed. (NTS 2542009009501).

A walkdown of all fire barriers is in process in order to ensure all fire barriers are designated as such. Refer to NTS 2651008902305.

QAP 1170-14 has been revised to describe more clearly the definition of a continuous fire watch. QAP 1900-16 has been cancelled because there is no longer approval for performing a continuous fire watch on a twenty minute basis.

More corrective action will include developing a table that describes each combustible loading limit and the reference for that limit for every fire zone. This table will be incorporated as a station procedure. (NTS 2542009009502).

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The existing commitment matrix that describes all fire protection commitments, will be incorporated as a part of the Fire Hazards Analysis (FHA) and updated to track and monitor every fire protection commitment. (NTS 2542009009503).

The station is considering increasing the number of the fire protection personnel on Technical Staff to establish and maintain better control over fire protection issues.

F. PREVIOUS EVENTS:

There are no previous events involving the interpretation of a fire watch, however, Deviation Report 4-2-86-062 was written because of a fire watch being cancelled before the Unit Two Cable Tunnel wet pipe sprinkler system was returned to service. There were other previous deviation reports written because of miscommunications between fire watch personnel, operating, and fire protection personnel. They were: 4-1-87-6 Missed hourly fire watch, 4-1-87-37 Incomplete fire watch surveillance due to miscommunication, and 4-1-87-54, Missed fire watch in Cable Spreading Room due to inadequate procedural control. There is no direct relation between the causes of the previous events and this event.

G. COMPONENT FAILURE DATA:

No component failures were involved with this event.