

JUN 23 1983

Docket No. 50-254/265

Mr. Dennis L. Farrar  
Director of Nuclear Licensing  
Commonwealth Edison Company  
P. O. Box 767  
Chicago, Illinois 60690

Dear Mr. Farrar:

SUBJECT: REQUEST FOR EXEMPTION FROM REQUIREMENTS OF APPENDIX R TO 10 CFR  
PART 50, SECTION III.G

Re: Quad Cities Nuclear Power Station, Units 1 and 2

The Commission has issued the enclosed Exemption from certain requirements of Section III.G of Appendix R to 10 CFR Part 50. This action is in response to your letter of July 1, 1982, supplemented by letter of September 23, 1982. These exemptions pertain to fire protection of safe shutdown capability.

Your letter of July 1, 1982 requested eleven exemptions from the technical requirements of Appendix R. Nine of those concern requirements for fixed fire suppression. The equipment (panels, switchgear and motor control centers) for which exemptions are requested is listed below:

1. All panels located in the control room,
2. 4KV SWGRs 13 and 14,
3. 480V SWGRs 18 and 19
4. 480V MCCs 18-1A, 18-1B, 19-1, 19-4, 19-1-1, 19-6 and 18/19-5,
5. 250V MCCs 1A and 1B,
6. 4KV SWGRs 23 and 24,
7. 480V SWGRs 28 and 29,
8. 480V MCCs 28-1A, 28-1B, 29-1, 29-4, 29-1-1, 29-6 and 28/29-5,
9. 250V MCCs 2A and 2B.

In addition, exemptions were requested from the requirements for three-hour fire barriers in Fire Zone 1.1.1.1 of Unit 1 and Fire Zone 1.1.2.1 of Unit 2.

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Mr. Dennis L. Farrar

- 2 -

We have granted the enclosed Exemption from the requirements of 10 CFR Part 50 Appendix R, Item III.G in response to your request.

This Exemption is being forwarded to the Office of the Federal Register for publication.

Sincerely,  
Original signed by  
D. B. Vassallo

Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing

Enclosure:  
As stated

cc w/enclosure  
See next page

*Changes made per OELD comments were OK'd by telecon w/ Shields on 6/16/83. He said it is not necessary for him to see them. RBZ 6/20/83*

*Subject to comments noted*

DIST:	Docket File	NRC PDR	LPDR	ORB#2 Reading	DEisenhut
ORAB	SNorris	RBevan	OELD	EJordan	TBarnhart-48
ACRS-10	OPA, CMiles	NSIC	SECY	JTaylor	RDiggs
XTRA-5	GRAY			VBenaroya	TWambach RFerguson

	DL:ORB#2	DL:ORB#2	DL:ORB#2	DL:AD:OR	OELD	DEisenhut	
OFFICE	SNORRIS	RBevan: pob	DVassallo	GLaffias	w. Shields	DL: BTR	
SURNAME	6/1/83	6/1/83	6/1/83	6/1/83	6/9/83	6/23/83	TWambach
DATE		6/6/83					6/1/83

Mr. Dennis L. Farrar  
Commonwealth Edison Company  
Quad Cities Nuclear Power Station, Units 1 and 2

cc:

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The Honorable Tom Corcoran  
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UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of

COMMONWEALTH EDISON COMPANY

(Quad Cities Nuclear Power Station,  
Units 1 and 2)

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Docket Nos. 50-254 and 50-265

EXEMPTION

I.

Commonwealth Edison Company (the licensee) is the holder of Facility Operating License Nos. DPR-29 and DPR-30 which authorize operation of the Quad Cities Nuclear Power Station, Units 1 and 2, respectively (Quad Cities or the facilities). These licenses provide, among other things, that the facilities are subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

The facilities are boiling water reactors located at the licensee's site in Rock Island County, Illinois.

II.

Section 50.48 of 10 CFR Part 50 requires that licensed operating reactors be subject to the requirements of Appendix R of 10 CFR Part 50. Appendix R contains the general and specific requirements for fire protection programs at licensed nuclear facilities. On February 17, 1981, the fire protection rule for nuclear power plants, 10 CFR 50.48 and Appendix R, became effective. This rule required all licensees of plants licensed prior to January 1, 1979, to submit by March 19, 1981: (1) plans and schedules for meeting the applicable requirements of Appendix R, (2) a design description of any modifications proposed to provide alternative safe shutdown capability pursuant to Paragraph III.G.3 of Appendix R, and (3) exemption requests for which the tolling provision of Section 50.48(c)(6) was to be invoked.

By a submittal dated July 1, 1982, the licensee requested exemptions from requirement for fixed fire suppression associated with the panels and switchgear (SWGR) and reactor control centers (MCC), as follows:

1. All panels located in the control room,
2. 4KV SWGRs 13 and 14,
3. 480V SWGRs 18 and 19,
4. 480V MCCs 18-1A, 18-1B, 19-1, 19-4, 19-1-1, 19-6 and 18/19-5,
5. 250V MCCs 1A and 1B,
6. 4KV SWGRs 23 and 24,
7. 480V SWGRs 28 and 29,
8. 480V MCCs 28-1A, 28-1B, 29-1, 29-1-1, 29-4, 29-6 and 28/29-5,
9. 250V MCCs 2A and 2B.

Also requested were exemptions from requirements for three-hour fire barriers in the following fire areas:

1. Unit 1 Reactor Building Basement Floor, Elevation 554'-0" (Fire Zone 1.1.1.1 of Unit 1)
2. Unit 2 Reactor Building Basement Floor, Elevation 554'-0" (Fire Zone 1.1.2.1 of Unit 2)

A. Section III.G.3 of Appendix R to 10 CFR 50 requires, among other things, that a fire detection system and a fixed fire suppression system shall be installed in the area, room or zone for which alternative safe shutdown capability has been provided.

For the equipment listed above, Items 1 through 9, the licensee requested exemptions from the fixed fire suppression requirements of Section III.G.3, providing the following bases in support of its request.

All equipment requiring fixed suppression as defined in Section III.G.3 for which an exemption was requested is critical to the power distribution necessary for normal and emergency operation of safety related equipment for Units 1 and 2. The inadvertent actuation of any fixed water suppression system located over this power distribution equipment could result in the fault or failure of that equipment. Installation of any type of fixed suppression system other than water, such as carbox, halon or foam, would be ineffective or inappropriate for the areas in which the equipment listed above is located or for the type of fire likely to occur in the area. All such equipment is in high traffic areas which are currently provided with fire detection and manual suppression systems. Furthermore, the existing fire detection and suppression systems currently installed in the areas containing the equipment listed above have been reviewed and approved by the NRC in the Quad Cities Station, Units 1 and 2 Fire Protection SER. As the probability of inadvertent actuation of a fixed suppression system is of far greater magnitude than the probability of occurrence of a fire severe enough to require the use of the alternate shutdown method independent of the fire area, Commonwealth Edison feels that the installation of such fixed suppression systems would only result in a decrease in plant safety.

We have evaluated the licensee's fire hazards analysis for these areas and have made the following determinations. All of the fire zones for which exemptions have been requested represent a similar configuration, i.e., combustible loading is light, there is alternate shutdown capability, smoke detection, and manual fire suppression equipment is available. There is,

therefore, reasonable assurance that a fire in any of these areas would be promptly detected and extinguished. The low combustible loading in these areas ensures that safety related equipment in adjacent areas will not be threatened. The installation of a fixed fire suppression system will not significantly increase the level of fire protection in these areas.

Based on our evaluation, we find that, since fixed fire suppression equipment in these areas will not significantly increase the level of fire protection, and existing fire protection, in conjunction with alternate shutdown capability in the areas for which an exemption has been requested, provides a level of fire protection equivalent to the technical requirements of Section III.G.3 of Appendix R, the exemptions should be granted.

B. Section III.G.2 of Appendix R to 10 CFR 50 requires, among other things, that three-hour fire barriers separate redundant divisions of safe shutdown equipment.

The licensee requested an exemption from the requirements for three-hour fire barriers in Fire Zones I.I.1.1 and I.I.2.1 located in the basement of the Reactor Building for Units 1 and 2, respectively. The basis for the request is that minimal fire loading in each of these fire areas is not capable of sustaining a fire of sufficient duration or magnitude to justify the need for a three-hour barrier. Cable trays containing essential and associated circuits are above the primary containment suppression pool structure, where redundant divisions are not susceptible to a single exposure fire.

We have evaluated the licensee's fire hazards analysis and related documents and have made the following determinations.

Each of the Fire Zones 1.1.1.1 and 1.1.2.1 is separated from adjoining areas by three-hour fire-rated walls and a concrete ceiling. Redundant cable trays are separated by one-hour fire-rated barriers. Portable extinguishers, manual hose stations and a detection system are provided in each zone. Since combustible loading in this area is negligible, any postulated fire would involve transient combustibles. These areas are not normally used for storage so that little or no transient combustibles would be expected to reside here. Also, no maintenance is performed in these areas that would require significant amounts of combustible materials. Therefore any fire in these areas would likely be of limited severity. The installed early warning detection system, in conjunction with the one-hour fire barriers for protection of redundant divisions, provides reasonable assurance that one train of components needed for safe shutdown will be maintained free of fire damage.

Based on the above evaluation, we conclude that the level of protection in Fire Zones 1.1.1.1 and 1.1.2.1 for Units 1 and 2 is equivalent to the technical requirements of Section III.G.2 of Appendix R, and therefore the exemptions should be granted.

### III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, these exemptions are authorized by law and will not endanger life or property or the common defense and security, are otherwise in the public interest. The Commission hereby approves the requested exemptions from Appendix R of 10 CFR Part 50 as described below:

A. Exemption is granted from the requirements of Section III.G.3 for fixed fire suppression associated with the panels, switchgear (SWGR) and motor control centers (MCC) as follows:

1. All panels located in the control room,
2. 4KV SWGRs 13 and 14,

3. 480V SWGRs 18 and 19,
4. 480V MCCs 18-1A, 18-1B, 19-1, 19-4, 19-1-1, 19-6 and 18/19-5,
5. 250V MCCs 1A and 1B,
6. 4KV SWGRs 23 and 24,
7. 480V SWGRs 28 and 29,
8. 480V MCCs 28-1A, 28-1B, 29-1, 29-1-1, 29-4, 29-6 and 28/29-5,
9. 250V MCCs 2A and 2B.

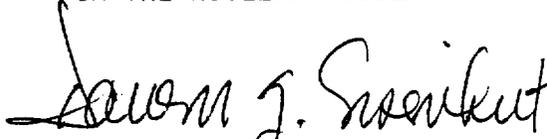
B. Exemption is granted from the requirements of Section III.G.2 for three-hour fire barriers separating redundant divisions of safe shutdown equipment in the following areas:

1. Unit 1 Reactor Building Basement Floor, Elevation 554'-0" (Fire Zone T.1.1.1 of Unit 1) and
2. Unit 2 Reactor Building Basement Floor, Elevation 554'-0" (Fire Zone T.1.2.1 of Unit 2)

We have determined that the granting of this Exemption will not result in any significant environmental impact and that pursuant to 10 CFR 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with this action.

This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland  
this 23rd day of June 1983.