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August 3, 2000

SVP-00-113

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Quad Cities Nuclear Power Station, Units 1 and 2  
Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

Subject: 10 CFR 50, Appendix R Exemptions

Reference: Letter from J. P. Dimmette (ComEd) to USNRC, "Title 10 CFR 50, Appendix R Exemptions," dated June 2, 2000.

The purpose of this letter is to formally request withdrawal of certain exemptions to 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979." As part of our 10 CFR 50, Appendix R Optimization Project, Commonwealth Edison (ComEd) Company has identified a number of exemptions that are no longer required to support post fire safe shutdown activities at Quad Cities Nuclear Power Station. This reduced reliance on 10 CFR 50, Appendix R exemptions has been accomplished through a combination of plant modifications, technical and Fire Protection evaluations performed in accordance with Generic Letter 86-10, "Implementation of Fire Protection Requirements." A description of each exemption, as well as a summary of our justification is provided in the attachment. A similar submittal was provided in the referenced letter. A total of twelve exemptions have been withdrawn to date. Additional exemptions are being evaluated as part of our ongoing 10 CFR 50, Appendix R Optimization project.

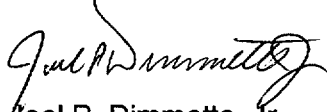
This action is consistent with our License Condition h.3.F which allows changes to the fire protection program provided the changes do not adversely affect our ability to achieve and maintain post-fire safe shutdown.

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Should you have any questions concerning this letter, please contact  
Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,



Joel P. Dimmette, Jr.  
Site Vice President  
Quad Cities Nuclear Power Station

Attachment: Quad Cities Exemptions To 10 CFR 50, Appendix R

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station  
Office of Nuclear Facility Safety – Illinois Department of Nuclear Safety

*Exemptions To 10 CFR 50, Appendix R, Section III.G.2*

**Exemption Title**

Justification For Equivalent Separation Of Redundant RHR Trains In The Reactor Building And The Turbine Building (Unit 1)  
(Quad Cities Fire Protection Report, Volume 4, Section 3.3)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.2, pertains to the fire boundary between the Unit 1 Reactor Building and Turbine Building (southern and central zone groups and equivalent fire areas 14-1 and 13-1). Portions of this boundary separate redundant divisions of the Residual Heat Removal (RHR) system. In general, a 3-hour fire barrier separates the Reactor and Turbine Buildings; however, certain sections do not have a complete 3-hour rating.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. Section 4.0 of Enclosure 1, "Fire Area Boundaries," states that "fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries." GL 86-10 identifies that a fire area boundary must be able to withstand the hazards to which it could be exposed to during a fire. The fire area boundary separating the Reactor Building and Turbine Building was analyzed in accordance with the guidance in GL 86-10. These evaluations document that the barrier and its penetrations can withstand the hazards in the area and, therefore, provide adequate protection for safe shutdown equipment. The technical evaluation demonstrates that the existing configuration of the barrier separating these two buildings is adequate, considering the hazards in the area, to prevent the spread of a fire. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.

**Exemption Title**

Justification For Equivalent Separation Of Redundant RHR Trains In The Reactor Building And The Turbine Building (Unit 2)  
(Quad Cities Fire Protection Report, Volume 4, Section 4.3)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.2, pertains to the fire boundary between the Unit 2 Reactor Building and Turbine Building (northern and central zone groups and equivalent fire areas 24-1 and 23-1). Portions of this boundary separate redundant divisions of the Residual Heat Removal (RHR) system. In general, a 3-hour fire barrier separates the Reactor and Turbine Buildings; however, certain sections do not have a complete 3-hour rating.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. Section 4.0 of Enclosure 1, "Fire Area Boundaries," states that "fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries." GL 86-10 identifies that a fire area boundary must be able to withstand the hazards to which it could be exposed to during a fire. The fire area boundary separating the Reactor Building and Turbine Building was analyzed in accordance with the guidance in GL 86-10. These evaluations document that the barrier and its penetrations can withstand the hazards in the area and, therefore, provide adequate protection for safe shutdown equipment. The technical evaluation demonstrates that the existing configuration of the barrier separating these two buildings is adequate, considering the hazards in the area, to prevent the spread of a fire. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.

**Exemption Title**

Justification For Lack of a Complete 3-hour Barrier Between Equivalent Fire Area 23-1 (8.2.8.D) and the Northern and Central Zone Groups  
(Quad Cities Fire Protection Report, Volume 4, Section 5.10)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.2, pertains to the fire boundary between equivalent fire area 8.2.8.D (Bus 23-1) and the Northern and Central Zone Groups. This exemption was required because equivalent fire area 23-1 (8.2.8.D) and the Northern and Central Zone Groups rely on redundant divisions of RHR. The floor between the areas is not a complete 3-hour rated fire barrier.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. Section 4.0 of Enclosure 1, "Fire Area Boundaries," states that "fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries." GL 86-10 identifies that a fire area boundary must be able to withstand the hazards to which it could be exposed to during a fire.

The technical evaluation evaluated the fire area boundary separating the Fire Area 23-1 (Fire Zone 8.2.8.D) from Fire Areas TB-I (Fire Zones 8.2.7.D and 8.2.7.E) and TB-II (Fire Zone 8.2.7.C). The barrier is 4-foot thick concrete floor supported by exposed structural steel. The electrical penetrations through the floor are sealed with non-combustible materials that are not fire rated. A 4kV bus duct (Switchgear 23-1 feed from the swing diesel generator) penetrates the floor between Fire Area 23-1 (Fire Zone 8.2.8.D) and Fire Area TB-I (Fire Zone 8.2.7.D). The technical evaluation demonstrated that the existing configuration of the barrier separating these fire areas is adequate to prevent the spread of a fire, considering the hazards in the area. This would demonstrate that upgrading the barrier to a fully 3-hour fire rated configuration would not significantly enhance the level of fire safety at Quad Cities. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.

**Exemption Title**

Justification for Appendix R Exemption Request For 4-kV Bus Duct Penetrations  
(Quad Cities Fire Protection Report, Volume 4, Section 7.1)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.2, pertains to certain 4-kV bus ducts that penetrate fire barriers. These buses run from the emergency diesel generators to associated switchgear. The bus duct fire stops at the penetrations are substantial, but are not 3-hour rated.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. Section 4.0 of Enclosure 1, "Fire Area Boundaries," states that "fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries." GL 86-10 identifies that a fire area boundary must be able to withstand the hazards to which it could be exposed to during a fire. A brief description is provided below. The barrier between Fire Area 23-1 (Fire Zone 8.2.8.D) from Fire Areas TB-I (Fire Zones 8.2.7.D and 8.2.7.E) and TB-II (Fire Zone 8.2.7.C) is 4-foot thick concrete floor. The electrical penetrations through the floor are sealed with non-combustible materials that are not fire rated. A 4kV bus duct (Switchgear 23-1 feed from the swing diesel generator) penetrates the floor between Fire Area 23-1 (Fire Zone 8.2.8.D) and Fire Area TB-I (Fire Zone 8.2.7.D). The boundary between Fire Zones 1.1.2.3 and 8.2.7.D is a 4-foot thick concrete wall. The wall is 3-hour fire rated except for a 4 kV bus duct that penetrates the wall and does not contain an internal fire seal. A technical evaluation has been completed in accordance with GL 86-10 which demonstrates that the existing configuration of the barrier separating these fire areas is adequate to prevent the spread of a fire, considering the hazards in the area. This would demonstrate that upgrading the barrier to a fully 3-hour fire rated configuration would not significantly enhance the level of fire safety at Quad Cities. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.

**Exemption Title**

Appendix R Exemption Request for Standby Gas Treatment and Reactor Building Vent System Piping Penetrations  
(Quad Cities Fire Protection Report, Volume 4, Section 7.2)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.2, pertains to certain Standby Gas Treatment (SBGT) and Reactor Building ventilation ducts that penetrate fire barriers. These ventilation ducts do not contain rated dampers.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. Section 4.0 of Enclosure 1, "Fire Area Boundaries," states that "fire area boundaries need not be completely sealed floor-to-ceiling, wall-to-wall boundaries." GL 86-10 identifies that a fire area boundary must be able to withstand the hazards to which it could be exposed to during a fire. The Unit 1 and Unit 2 reactor buildings share a boundary, Fire Area RB-1N and RB-2N, respectively. This boundary is generally a 3-hour rated barrier but includes penetrations for the Standby Gas Treatment System (SBGTS) and Reactor Building Ventilation. The Unit 1 and Unit 2 reactor buildings also share a boundary with the turbine building. This boundary is generally a 3-hour rated fire barrier; however, certain penetrations are not 3-hour rated including penetrations for the SBGTS and the Reactor Building Ventilation system. A technical evaluation has been completed in accordance with GL 86-10, which demonstrates that the existing configuration of the barrier separating these fire areas is adequate to prevent the spread of a fire, considering the hazards in the area. This would demonstrate that upgrading the barrier to a fully 3-hour fire rated configuration would not significantly enhance the level of fire safety. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.



*Exemptions To 10 CFR 50, Appendix R, Section III.G.3*

**Exemption Title**

Justification for Lack of Complete Detection and Suppression Throughout the Reactor Building [Unit 1]  
(Quad Cities Fire Protection Report, Volume 4, Section 3.4)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.3, to the extent that it requires the installation of automatic fire detection systems and fixed fire suppression in an area room or zone for which alternate shutdown capability is provided.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. A GL 86-10 technical evaluation can be performed to assess the adequacy of partial suppression and detection to protect against the hazards. Specifically, Enclosure 1, Section 5, states: "Where full area suppression and detection is not installed, licensees must perform an evaluation to assess the adequacy of partial suppression and detection to protect against the hazards in the area." While fire detection and/or fixed suppression is provided in many of the fire zones, full area coverage is not provided throughout the Unit 1 reactor building. A technical evaluation has been completed that demonstrates that the existing Unit 1 fire protection systems provide an adequate level of protection in Unit 1 reactor building. The evaluation concludes that the installation of additional fire detection and/or suppression systems would not significantly enhance fire safety in this fire area. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.

**Exemption Title**

Justification for Lack of Complete Detection and Suppression Throughout the Reactor Building [Unit 2]  
(Quad Cities Fire Protection Report, Volume 4, Section 4.4)

**Key References**

ComEd Submittal Date: June 25, 1986  
NRC SE Date: July 21, 1988

**Statement of Exemption Granted**

This exemption to 10 CFR 50, Appendix R, Section III.G.3, to the extent that it requires the installation of automatic fire detection systems and fixed fire suppression in an area room or zone for which alternate shutdown capability is provided.

**Basis for Exemption Withdrawal**

Generic Letter (GL) 86-10, "Implementation of Fire Protection Requirements," provides guidance for implementing Appendix R requirements. A GL 86-10 technical evaluation can be performed to assess the adequacy of partial suppression and detection to protect against the hazards. Specifically, Enclosure 1, Section 5, states: "Where full area suppression and detection is not installed, licensees must perform an evaluation to assess the adequacy of partial suppression and detection to protect against the hazards in the area." While fire detection and/or fixed suppression is provided in many of the fire zones, full area coverage is not provided throughout the Unit 2 reactor building. A technical evaluation has been completed that demonstrates that the existing Unit 2 fire protection systems provide an adequate level of protection in Unit 2 reactor building. The evaluation concludes that the installation of additional fire detection and/or suppression systems would not significantly enhance fire safety in this fire area. For these reasons, we are in compliance with the requirements of 10 CFR 50, Appendix R and associated implementing guidance. Therefore, the subject exemption is no longer required.