



**Commonwealth Edison**

One First National Plaza, Chicago, Illinois

Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

April 9, 1986

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Quad Cities Station Units 1 and 2  
Proposed Modification to Recirculation  
Pump M/G Set Fire Suppression System  
NRC Docket Nos. 50-254 and 50-265

- References (a): Letter from T. A. Ippolito to Cordell Reed  
dated July 27, 1979.
- (b): Letter from R. F. Janecek to T. A. Ippolito  
dated November 5, 1979.
- (c): Letter from T. A. Ippolito to J. S. Abel  
dated February 12, 1981.

Dear Mr. Denton:

Commonwealth Edison requests your approval to replace our foam water spray system which presently protects four (4) Motor Generator (MG) sets, with a standard water spray system. The subject MG sets are associated with Quad Cities Units 1 and 2 recirculation pumps. The foam system was originally installed as a redundant suppression system to the wet pipe system sprinklers at ceiling level above the MG sets. The reason for this request is the overall maintenance problems associated with foam spray systems, such as shelf life of the foam. Additional concerns are the cleanup associated with inadvertant actuation. The foam spray system design was accepted by your staff in their supplement to the Quad Cities Fire Protection SER dated 2/21/81 (reference (c)). Since this approval was given, fixed water spray systems have been accepted by the NRC for protection of similar hazards in other nuclear plants. We therefore request your approval to modify this commitment. Attachment A is a technical justification for this conversion, prepared by Professional Loss Control Inc.

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April 9, 1986

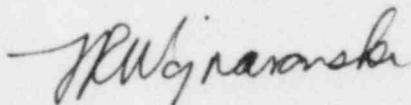
The existing detection system would still be used to activate the new suppression system. This detection system consists of eight (8) rate compensation type thermostats. Please note that the original Fire Protection SER for Quad Cities dated July 27, 1979 (reference (a)) identified actuation of the foam system by flame or infrared detectors. By our letter dated November 5, 1979 (reference (b)), system design details were submitted for staff review, which indicated that actuation would be by thermostats. Subsequent NRC correspondence did not explicitly address our proposed detection system. We therefore request your concurrence that continued use of the thermostat detection system is acceptable. In a telecon with J. Stang of your staff on March 14, 1986, he indicated the thermostat detectors were acceptable pending receipt of additional information. Attachment B provides additional justification prepared by Professional Loss Control Inc. regarding the adequacy of the thermostat detection system.

In conclusion, we request your concurrence with the above-described replacement of the MG set foam suppression system and with the continued use of our thermostat detection system.

One signed original and fifteen (15) copies of this letter and its attachments are provided for your use.

If there are any questions regarding this matter, please contact this office.

Very truly yours,



J. R. Wojnarowski  
Nuclear Licensing Administrator

lm

cc: R. Bevan - NRR  
Quad Cities Resident Inspector

1529K

Attachment A

PROFESSIONAL LOSS CONTROL, INC. P. O. Box 446 • Oak Ridge, Tennessee 37831 • (615) 482-3541

December 16, 1985

Mr. Ron Roebert  
SNED  
Commonwealth Edison Company  
35th Floor West  
1 First National Plaza  
Chicago, IL 60690

Re: Deletion of foam for protection of Quad Cities MG sets

Dear Ron:

Enclosed is a brief technical justification for conversion of the foam-water spray system for the MG sets at Quad Cities to a standard water spray system.

NFPA 15-1985, Standard for Water Spray Fixed Systems for Fire Protection, states the following with respect to the hazards for which fixed system water spray protection is acceptable:

- 1-4.2 Hazards.** Water spray protection is acceptable for the protection of hazards involving:
- (a) Gaseous and liquid flammable materials.
  - (b) Electrical hazards such as transformers, oil switches, motors, cable trays and cable runs.
  - (c) Ordinary combustibles such as paper, wood, and textiles.
  - (d) Certain hazardous solids.

Each MG set contains approximately 800 gallons of lubricating oil at any one time, with an additional 400 gallons within the system piping. This oil is considered a combustible liquid and has a flash point of approximately 400°F. Electrical equipment is also located within each MG set.

According to Section 1-4.2 of NFPA 15-1985, fixed system water spray protection would be acceptable for the MG Sets. An added factor of safety is introduced by the presence of high flash point combustible liquid materials.

All other major oil hazards at Quad Cities are protected by automatic sprinklers and/or fixed water spray systems without the support of foam. These hazards include:

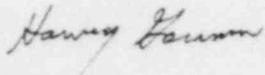
- HPCI Pumps
- Turbine Lube Oil Tanks
- Hydrogen Seal Oil Units
- Turbine Bearing Lift Pumps (closed head systems)
- Turbine Bearings
- Diesel Fire Pumps
- Transformers
- Diesel Day Tanks (some closed heads)

Page Two  
Mr. Roebert  
December 16, 1985

As "qualified" fire protection engineers, we believe that the use of foam for this hazard is unnecessary. Water protection alone is most appropriate for high flash point oil hazards. Also, at Dresden the MG sets are protected by ceiling sprinklers without any fixed water spray system considered necessary at the MG sets. At Quad Cities, redundant protection exists in that both water spray and ceiling sprinklers are installed.

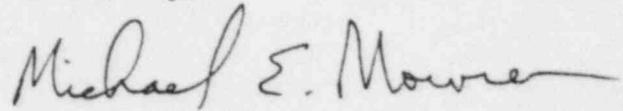
Finally, fixed water spray systems have been accepted by the NRC for protection of similar hazards in nuclear power plants throughout the United States. Deletion of foam-water protection will not result in a degradation of fire protection at Quad Cities.

Sincerely,



Harvey E. Goranson, P.E.  
Senior Fire Protection Engineer

Reviewed by,



Michael E. Mowrer, P.E.  
Vice President

HEG/js

Enclosures

c: QA  
Nick Kalivianakis  
Jay Jablonski  
J. Reed  
T. Pettit  
G. Jurkin  
B. Barth  
W. Dingler  
B. Rybak  
J. McDonald  
T. Hausheer

File Ref: CE-16-010-57



January 14, 1986

Mr. Ron Roebert  
SNED Staff Assistant  
Commonwealth Edison Company  
P.O. Box 767  
Chicago, Illinois 60690

RE: Fire Detection For MG Set Area At Quad Cities

Dear Mr. Roebert:

We have reviewed the fire detection system used to activate the foam deluge system used to protect the MG sets at Quad Cities Station and would like to offer the following comments:

Thermal detectors are typically used for this type of suppression system actuation since the expected heat release from the most likely fire is high (MG set lube oil). The thermostats are an adequate detection device and well justified to meet the system design objective.

The ceiling above the MG sets is constructed of concrete supported by deep structural steel beams. The ceiling height is about 20 ft. with the fan floor located above this area. The ventilation air flow in this area is low. Fire resistive walls have been constructed to separate MG sets from column line G to H at columns 11 and 15. The detection system is installed to actuate a fixed foam water deluge system. This system was installed as a redundant suppression system to the wet pipe sprinklers at ceiling level above the MG sets. Eight 190°F rate-compensation type thermostats are installed around the perimeter of each MG set curbed area. The thermostats are located about 10 ft. above the floor, underneath heat collector canopies. Each detector is spaced on an average 144 ft<sup>2</sup> spacing (12' x 12'). This detection system is most appropriate for actuation of the foam water suppression system considering the fire hazards protected.

Yours very truly,

Michael E. Mowrer, P.E.  
Vice President

File Ref: QC-03-002-61

cc: QA File  
Jay Jablonski  
J. Reed  
D. Doliber