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Docket Nos. 50-280  
and 50-281

Mr. W. L. Stewart  
 Vice President - Nuclear Operations  
 Virginia Electric and Power Company  
 Post Office Box 26666  
 Richmond, Virginia 23261

Dear Mr. Stewart:

By letter dated July 23, 1982, you requested an exemption from the requirement of Section III.G of Appendix R to 10 CFR 50 to provide a fixed fire protection system in the control room and emergency switchgear rooms of Surry Power Station, Unit Nos. 1 and 2.

We granted an exemption for the control room on November 24, 1982. However, for the reasons stated in the enclosed Safety Evaluation Report, we deny your request for an exemption for the emergency switchgear rooms.

Sincerely,

ORIGINAL SIGNED

Darrell G. Eisenhut, Director  
 Division of Licensing

Enclosure:  
 Safety Evaluation Report

cc w/enclosure:  
 See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION REPORT  
SUPPORTING DENIAL OF EXEMPTION REQUEST  
FOR SURRY POWER STATION, UNIT NOS. 1 AND 2

Introduction

By letter dated July 23, 1978, Virginia Electric and Power Company (the licensee) requested an exemption to the requirement of Section III.G of Appendix R to 10 CFR 50 to provide a fixed fire protection system in the emergency switchgear rooms.

It should be noted that the licensee does not agree that an exemption is required in that the licensee considers standpipes and hose racks to be "fixed fire suppression systems." However, the licensee requested the exemption because of the staff's interpretation that the requirement exists for an automatic fixed fire suppression system (sprinklers).

Discussion

Separate areas located below the control room and the machine shop are provided for each unit's emergency switchgear and control relays. There are two emergency switchgear rooms in each area, one for each division, and a single relay room. Each room has approximately 1500 square feet of floor space. The rooms within each area adjoin each other in an "L" shaped configuration with open passageways between them. There is also an open passageway with a three-hour fire-rated sliding door between the Unit 1 and Unit 2 areas. The sliding fire door is maintained closed.

The emergency switchgear and relay room areas for each unit are bounded on all sides by concrete which provides a three-hour fire barrier. The individual rooms within each area are also separated by three-hour rated concrete walls. As noted above, these walls are penetrated by open passageways.

The emergency switchgear and relay rooms contain safety-related switchgear and control relays, including redundant equipment required for safe shutdown, and the remote shutdown control panels for each unit. Large quantities of safety-related power and control cables are routed above the switchgear cubicles and relay boards throughout the area and in the open passageways between rooms. The emergency 125-volt dc batteries are also located in the area in separate rooms within their associated division switchgear rooms. An alternate safe shutdown system is available for each unit's emergency switchgear room.

The combustible materials in the area consist of a large amount of electrical cable insulation and parts of electrical components in the switchgear cubicles and relay boards. There is also a potential for a small amount of transient lubricating oil to be transported via the Unit 2 switchgear rooms to mechanical equipment room No. 3.

The cable insulation comprises a fuel load of  $2.66 \times 10^5$  BTU/sq. ft. which if totally consumed would correspond to a fire severity of about two hours on the ASTM E-119 standard time temperature curve. Fire protection in each emergency switchgear room consists of smoke detectors, standpipe hose stations and portable fire extinguishers.

The licensee justifies the exemption on the basis of (1) standpipe hose stations have been provided and (2) the installation of an automatic suppression system in the area would not enhance fire protection safety.

#### Evaluation

In areas where alternative shutdown capability is required, Section III.G.3 also requires the installation of a fixed suppression system if the area contains a large concentration of cables or other combustibles. The emergency switchgear rooms have alternative shutdown capability, but do not have a fixed suppression system.

The licensee has not provided a technical basis sufficient to justify the exclusion of a fixed suppression system in the area with the large amount of insitu combustibles and to support his conclusion that a fixed suppression system would not enhance fire protection safety. The proposed alternative has not been shown to be equivalent to the technical requirements of Section III.G of Appendix R.

#### Conclusion

We conclude that the licensee has not provided justification that the level of protection afforded by the existing fire protection measures in the emergency switchgear rooms are equivalent to the technical requirements of Appendix R. Therefore, the licensee's request for exemption should be denied.