

APR 27 1983

*Current file*

MEMORANDUM FOR: John A. Olshinski, Director  
 Division of Engineering and Technical Programs

FROM: William V. Johnston, Assistant Director  
 Materials, Chemical & Environmental Technology  
 Division of Engineering

SUBJECT: FIRE PROTECTION MODIFICATIONS, OCONEE NUCLEAR STATION  
 DOCKET NOS. 50-269, 50-270 AND 50-287

By memorandum dated March 9, 1982, you requested guidance for six unresolved fire protection items that were described in a memorandum to E. L. Jordan from C. E. Murphy dated May 16, 1980. These six items are:

1. Smoke Detection Systems
2. Interior Fire Hose Standpipe Systems
3. Fog Type Open Head Spray System
4. Unique Audible Fire Alarm in the Control Room
5. Fire Barriers
6. Oil Collection Systems

Guidance was requested as to what installation standards, criteria or codes these modifications should adhere to.

1. Smoke Detection Systems

Region II indicates that fire detection systems are seriously deficient in that the location and spacing of the smoke detectors do not meet the provisions of NFPA 72E "Automatic Fire Detectors".

In the Fire Hazards Analysis the licensee did not identify deviations from our guidelines regarding smoke detector spacing and location. Therefore, none have been approved. For the purpose of detector locations and spacing our guidelines rely on NFPA 72E as applied by a qualified fire protection engineer.

2. Interior Fire Hose Standpipe Systems

Region II indicates that the standpipe system did not meet the guidelines of Appendix A to BTP ASB 9.5-1 as follows:

- a. Hose connection and supply piping utilize 1-1/2 piping whereas the minimum permitted as 2-1/2 inch pipe. Hydraulic calculation do not appear to have been made to justify the use of the smaller diameter pipe.

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- b. Volume of water available in many areas appears inadequate to produce effective hose streams. A flow of at least 100 gpm at a residual pressure of 65 psi at each hose outlet is required by Section 2-1.10 of NFPA-14, Standpipe and Hose Systems.
- c. Hose stations at the Keowee Plant supplied from the suction piping to the plant fire pump. This arrangement will not deliver an adequate volume of water for the two top floors of the plant but also reduces the reliability of the plant fire pump installation.
- d. Hose outlets in many areas located within normally unoccupied spaces.

In the Fire Hazards Analysis the licensee has not identified deviations from our guidelines on the above items therefore, none have been approved.

3. Fog Type Open Spray System

Region II indicates that the subject system in the cable spreading room, equipment room and cable shaft do not conform to any recognized industry standard and this item is not inspectable.

A dedicated shutdown system is provided independent of these areas. The licensee has provided a fixed suppression system in these areas to be used in the event of a fire that cannot be controlled by the fire brigade. Neither the industry nor the NRC has specific requirements for such systems.

4. Unique Audible Fire Alarm in the Control Room

The fire alarm signal in the control room does not meet NRC guidelines because it is the same as all other alarms. The licensee did not identify such a deviation in his FHA; therefore, this deviation has not been approved by NRC.

5. Fire Barriers

Fire Barriers can not be inspected because the FHA and FSAR do not contain the location of fire walls and penetrations required to be provided and maintained.

The implementation of Appendix R Section III.G did not require the licensee to provide a description of the fire area barriers which define the fire areas. However, to perform the analysis required to backfit Section III.G of Appendix R. The licensee had to define the fire barriers for such an analysis. The fire barriers should be inspected against the fire barriers identified in that analysis.

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6. Oil Collection System for Reactor Coolant Pumps

Region II indicates that the oil collection system is not adequate for its intended purpose. This system should be inspected against the requirements of Section III.0 of Appendix R to 10 CFR Part 50.

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