

OCT 27 1980

Docket No. 50-249
and 50-237

Mr. J. S. Abel
Director of Nuclear Licensing
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Abel:

On May 29, 1980, the Commission published a proposed rule, a new paragraph 50.48 and Appendix R to 10 CFR Part 50, concerning fire protection, which sets forth the minimum acceptable fire protection requirements necessary to resolve contested areas of concern for nuclear power plants operating prior to January 1, 1979.

We have reviewed all the information you have provided to date regarding your fire protection program. Several of the open items indicated in our Safety Evaluation Report issued March 22, 1979 remain unresolved. Enclosure 1 presents our position on modifications that would have to be made at your facility to resolve these open items, in a manner that would meet the requirements of the proposed Appendix R.

Sincerely,

Original Signed by
T. A. Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
As Stated

cc w/enclosure:
See next page

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Mr. J. S. Abel

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October 27, 1980

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SUMMARY OF STAFF REQUIREMENTS
TO RESOLVE OPEN ITEMS

DRESDEN UNIT NOS. 2 AND 3
DOCKET NOS. 50-237 AND 249

3.1.2 Smoke Detection System Tests

In the SER, it was our concern that the smoke detectors might not respond to the products of combustion for the combustibles in the areas where smoke detectors are installed. We were also concerned that ventilation air flow patterns in the area might reduce or prevent detector response and we recommended that the licensee conduct bench testing of smoke detectors and an in-situ test. The licensee has not responded with information regarding this item for our evaluation.

The required methodology for an in-situ smoke detector test is beyond the current state-of-the-art and, therefore, cannot be performed at this time.

To adequately address the concerns of the staff and assure that the detection system will provide timely detection of any fires, the licensee should conduct bench tests of the detectors to verify that they will be responsive to the products of combustion of combustibles, including transient combustibles, in each area where the detectors are installed.

3.1.5 Water Suppression Systems

In the SER, it was our concern that the pre-action sprinkler system which protects the redundant divisions of cables on the mezzanine may not be adequate to preserve safe shutdown capability.

By letter dated December 4, 1979, the licensee provided design information regarding the pre-action system.

Based on our review, we find that the pre-action system does not provide adequate protection to preserve safe shutdown capability. We requested the licensee to:

1. Provide alternate shutdown capability independent of the turbine mezzanine area.
2. Provide line detectors in the cable trays or spot type heat detectors between the horizontal trays for actuation of the pre-action system.
3. Verify that the pressure sensing switch for the turbine mezzanine water system is located on the system side of any regulators or check valves.

The licensee has not demonstrated that adequate protection features have been provided for cables and equipment of redundant systems important to achieving safe shutdown conditions to ensure that at least one means of achieving such conditions survives postulated fires.

To meet our fire protection guidelines, alternate shutdown capability should be provided when safe shutdown cannot be ensured by barriers and detection and suppression systems because of the exposure of redundant safe shutdown equipment, cabling, or components in a single fire area, to an exposure fire, or fire suppression activities, or rupture or inadequate operation of fire suppression systems.

To meet Section III, Paragraph G. of the proposed Appendix R to 10 CFR Part 50, the licensee should provide an alternate shutdown capability independent of this area. The alternate shutdown system should meet the requirements of Section L, Paragraph III of proposed Appendix R to 10 CFR Part 50.

In addition, the licensee should provide a line-type detection system in the cable trays for actuation of the pre-action system. Also, the air pressure sensing switch for the turbine mezzanine water system should be located on the system side of any regulation or check valves.

3.1.6 Gas Suppression Systems - Auxiliary Electrical Equipment Room

In the SER, it was our concern that the fire suppression systems for the auxiliary electrical equipment and computer rooms may be inadequate to suppress a fire.

By letter dated September 28, 1978, the licensee provided design details regarding the automatic Halon fire suppression system and the manual CO₂ fire suppression system.

As a result of our review, we requested the licensee to provide Halon and CO₂ discharge nozzles in the underfloor area of the computer room and the small area of the tunnel.

To meet accepted fire protection engineering practice the licensee should provide Halon and CO₂ discharge nozzles in the underfloor area of the computer room and the small area of the tunnel.

3.1.12 Portable Ventilation Equipment

In the SER, the concern was that installed ventilation systems would not be adequate to remove the smoke and heat from a fire in most areas of the plant.

By letter dated November 30, 1978, the licensee committed to provide the following portable smoke ejector units and accessories:

1. Two electric motor driven smoke ejector fans with air flow capacities of 5,200 cfm each.
2. One hundred fifty feet of 16 inch diameter flexible duct.

We are of the opinion that three portable smoke ejector units with a combined capacity of 17,500 cfm be provided to adequately remove heat and smoke from the fire areas, and therefore the two smoke ejector units proposed by the licensee are not sufficient.

To meet the guidelines of Section D-4 of Appendix A to BTP 9.5-1 and provide adequate smoke removal capability the licensee should provide at least three portable smoke ejectors with a combined capacity of at least 17,500 cfm. The smoke ejectors provided should be capable of being operated in case of loss of offsite power.

3.2.4 Shutdown Capability

In the Fire Protection Safety Evaluation Report, it was our concern that in several areas of the plant, the physical separation of redundant safe shutdown systems is inadequate so that redundant systems could be damaged by a single fire, thus the possibility of affecting safe shutdown. By letters dated June 5, 1978, and January 24, 1980, the licensee provided the results of an evaluation of the capability to achieve and maintain safe shutdown for postulated fires in various plant areas.

The information is not enough for us to make an independent evaluation. The licensee has not demonstrated that adequate protection features have been provided for cables and equipment of redundant systems important to achieving safe shutdown conditions to ensure that at least one means of achieving such conditions survives postulated fires.

To meet our fire protection guidelines, alternate shutdown capability should be provided when safe shutdown cannot be ensured by barriers and detection and suppression systems because of the exposure of redundant safe shutdown equipment, cabling, or components in a single fire area, to an exposure fire, or fire suppression activities, or rupture or inadequate operation of fire suppression systems.

To meet Section III, Paragraph G of the proposed Appendix R to 10 CFR Part 50, the licensee should provide an alternate shutdown capability for the following areas of the plant:

1. Control Room (Fire Area 2.0).
2. Cable spreading area (Fire Zone 6.2) - auxiliary electrical equipment room.
3. Turbine Building, (Fire Zones 8.2.6.A and 8.2.5A) - 4kv switchgear groups 23 and 24. Area at elevation 534 feet bounded by column rows D-E and 31-33 and elevation 517 feet bounded by column rows D-E and 31-36.
4. Turbine Building, (Fire Zone 8.2.6B and 8.2.5B) - 4kv switchgear groups 33 and 34. Area at elevation 517 feet bounded by column rows D-E and 52-56.

5. Reactor Building, (Fire Zone 1.1.2.3A) - 4kv switchgear 23-1 and 24-1. Area at elevation 545 feet bounded by column rows M-N and 39-42.
6. Reactor Building, (Fire Zone 1.1.1.3A) - 4kv switchgear 33-1 and 34-1. Area at elevation 545 feet bounded by column rows M-N and 46-49.
7. Reactor Building, (Fire Zone 1.1.2.4A) - 480V switchgear 28 and 29. Area at elevation 570 feet bounded by column rows M-N and 40-42.
8. Reactor Building, (Fire Zone 1.1.1.4A) - 480V switchgear 38 and 39. Area at elevation 570 feet bounded by column rows M-N and 46-48.
9. Unit 3 cable tunnel, (Fire Zone 8.2.4).

The alternate shutdown system should meet the requirements of Section L, Paragraph III of proposed Appendix R to 10 CFR Part 50.