

ENCLOSURE 1

ADDITIONAL FIRE PROTECTION REVIEW
VERMONT YANKEE NUCLEAR POWER STATION
DOCKET NO. 50-271

Fire Detection Systems, Item 3.1.1

In the Fire Protection SER, the concern was 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 perform an in situ smoke detector test.

By letter dated June 14, 1978, the licensees committed to conduct bench testing to verify that the smoke detectors installed in an area will provide prompt response to the products of combustion for the types of combustibles (including transient combustibles) in the areas where smoke detectors are installed. In addition, the smoke detection systems are designed and installed by qualified personnel and meet the appropriate NFPA codes.

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

We find that with acceptable bench testing of smoke detectors, and considering that the smoke detection systems meet appropriate NFPA codes and are designed by experienced personnel, the existing smoke detector is acceptable.

Water Suppression Systems, Section 3.1.4(a)

In the Fire Protection SER, the concern was that a fire in one of the diesel generator rooms could breach the 3-hour fire wall and penetration shields separating the two diesel generators. We required that a manual dry pipe water sprinkler system be provided in each diesel generator room.

By letters dated August 14, 1978 and January 17, 1980, the licensee committed to install a manual dry pipe sprinkler system in each diesel generator room, and provided the design details.

Based on this commitment, we find that the fire protection provided in each diesel generating room meets our guidelines and is, therefore, acceptable.

Water Suppression Systems, Item 3.1.4(b)

In the Fire Protection SER, the concern was that a fire in the cable penetration area at grade elevation in the reactor building could damage redundant safe shutdown systems. We required that a preaction water sprinkler system be provided in this area.

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By letters dated August 14, 1978 and May 20, 1980, the licensee committed to install a preaction sprinkler system in the cable penetration area. The system will be actuated by a smoke detection system. The backup manual hose stations in the reactor building are fed independently of the preaction sprinkler system.

Based on the licensee's commitments, we find that the proposed preaction sprinkler system, with the existing fire protection features, provides an adequate level of protection for the cable penetration area and is, therefore, acceptable.

Water Suppression Systems, Section 3.1.4(c)

In the Fire Protection SER, the concern was that a fire in the turbine building could result in a loss of the turbine building structure. This structure, if collapsed, could result in a loss of the heating, ventilation and air conditioning system for the control room and threaten the availability of both diesel generator units. We required that, if motor vehicles were to be stored in the turbine building lay-down area, that area should be protected by an automatic sprinkler system.

By letters dated August 14, 1978 and January 17, 1980, the licensee committed to install a deluge system in the turbine building lay-down area.

Based on the licensee's commitments, we find that the turbine building structure is adequately protected from fires.

Water Suppression Systems, Section 3.1.4(d)

In the Fire Protection SER, the concern was that a fire involving the diesel fire pump or its fuel oil could damage the service water pumps and the other fire pump.

By letters dated August 14, 1978 and January 17, 1980, the licensee committed to install an automatic sprinkler system in the diesel fire pump area.

We find that the proposed sprinkler system for the diesel fire pump area will provide an adequate level of protection, and, therefore, we find it acceptable.

Fire Barrier Penetration, Section 3.1.8

In the Fire Protection SER, the concern was that the electrical cable penetration seals provided where the cables penetrate rated fire barriers will not be adequate to prevent a fire in one area from spreading to adjacent areas.

By letter dated February 26, 1980, the licensee committed to provide fire rated silicon foam penetration seals. The penetration seal design will have a 3-hour fire rating. The information on the rating of one penetration, "Typical H", will be provided at a later date.

Based on the licensee's commitments, we find that the proposed penetration seals meet the guidelines of Section D.1 and D.3.(d) of Appendix A to BTP 9.5-1 and are, therefore, acceptable.

Air Breathing Apparatus, Item 3.1.14(a)

In the Fire Protection SER, the concern was that the onsite supply of reserve air for fire brigade breathing units is not sufficient to provide an adequate reserve supply.

By letter dated January 10, 1980, the licensee indicated that acceptable self-contained breathing units are being provided for fire brigade use. The breathing unit that is being provided is a positive pressure, closed circuit oxygen breathing apparatus which has a capacity to supply more than 60 minutes of air from each bottle. Sufficient spare bottles and CO₂ adsorbers will be available to provide an onsite 6-hour supply of reserve air.

Based on this information, we find that the supply of breathing air for the fire brigade meets the guidelines of Section D.4.(h) of Appendix A to BTP 9.5-1 and is, therefore, acceptable.