

November 12, 1982

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T.F. B7.1.2

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. George W. Knighton, Chief
Licensing Branch 3
Division of Licensing

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket
Nos. 50-443 and 50-444
(b) PSNH Letter, dated April 1, 1982, "Seabrook Station Fire
Protection Program," J. DeVincentis to F. J. Miraglia
(c) PSNH Letter, dated September 20, 1982, "Fire Protection
System," J. DeVincentis to J. B. Kerrigan

Subject: Fire Protection System

Dear Sir:

Based upon discussions with the NRC Staff, we wish to make the following clarifications regarding the information submitted in Reference (b) above.

1. There was some question as to the ability of the fire water supply to handle the expected maximum flow rate for the required two-hour period. The flow rate calculation is to be based upon 500 gpm for manual hose stream plus the largest design demand of any sprinkler or deluge system as determined in accordance with NFPA 13 or NFPA 15. The largest design demand of any sprinkler or deluge system at Seabrook Station is for the sprinkler system in the Turbine Building. The design demand is to supply 0.2 gpm per square foot over any 10,000 sq. ft. area. This equates to 300,000 gallons in two hours, which can be supplied by our 300,000 gallon Fire Water Tanks.
2. The question here deals with the need for fire detection in the safety-related logic cabinets in the Control Room. It is our position that it is not necessary. Full area smoke detection will be installed in the Control Room. The room itself is manned full time. Each safety-related logic cabinet has its redundant counterparts. Under these conditions, a fire in a logic cabinet will be detected before it can damage any cabinet other than the one where it originated.

Boo!

3. The Standard Review Plan guidelines call for fire detection, suppression, and a one-hour fire wall for peripheral rooms in the Control Room. It is our position that there is no need for suppression in these rooms. The fire load in the rooms is small. The Control Room is manned full time. The detection in the room will alarm in sufficient time to allow extinguishment of any fire before it is of a size that could threaten a one-hour fire barrier.
4. The staff consultant appears to feel that there is a problem with the structural integrity of the Turbine Building in that a complete collapse of the building in a fire could cause a fire problem to the Control Building. We have considered the consultant's concern, and have developed the following information:

The Control Building wall is a seismically designed, two-foot thick, reinforced concrete wall. There is no connection from the Turbine Building support steel to the Control Building wall. Even considering the remote chance that the Turbine Building might collapse, if it collapsed inward, it would not pull the Control Building wall down. If it collapsed outward, it would not damage the Control Building wall because of the wall's design. There is, therefore, no problem.

5. Diesel Generator Room Fire Protection

Appendix R, Section III.G, states that fire protection features shall be provided for structures, system, and components important to safe shutdown; and that these features shall be capable of limiting fire damage so that one train of systems necessary to achieve and maintain hot shutdown is free of fire damage. It further states that one of three methods shall be provided.

- a. Separation by a three-hour fire barrier;
- b. Separation by a horizontal distance of 20 feet plus detection and suppression; or
- c. Enclosure within a one-hour barrier with detection and suppression.

BTP CMEB 9.5-1, Section C5.b.(1) says the same thing.

PSNH maintains that, to require anything else at Seabrook Station is unnecessary, and does not consider the overall safety of the plant. The basis for our position follows here:

- a. Seabrook Station has provided the required three-hour fire barrier between the two redundant diesel generators, day tanks, and fuel oil storage tanks. Therefore, although not required to, it meets Appendix R. It also meets Section C.5.b(1) of BTP CMEB 9.5-1.

- b. The provision of fire suppression in the Engine Room is a question of property protection, not safe shutdown or public safety. If there is a fire in the Diesel Generator Room, then that diesel must be considered out of service, not available for use. The provision of a redundant diesel generator provides for safe shutdown and public safety; the provision of fire suppression does not. It only provides for property protection in that it will control the fire until the Fire Brigade gets there, limiting fire damage at the expense of some potential water damage. However, once that suppression system goes off, then there is no hope of using the diesel generator; so it is neither an aid to safe shutdown nor an aid to public safety.
- c. We feel that the installation of any more suppression than already exists in the Diesel Generator Room is contrary to the overall safety of the plant. It is theoretically possible to design a diesel, a generator, and switchgear that would continue to operate with the accidental actuation of a fire suppression system, be it gas or water. However, the Seabrook Station systems have not been designed for such operation. Additionally, in view of the emphasis that is put on the starting and continued operation of the diesel and generator and the reliability figure that would have to be placed on the probability of the total system working as it was designed to, it would seem imprudent to install such a system. The chance that a false operation of a full room suppression system could occur and knock the diesel and generator, or their associated switchgear, off line when it is most needed is too great. Seabrook Station does not intend to jeopardize the reliability of its emergency power supply by installation of any further suppression in the diesel generator area.

6. Fire Detection

Reference (c) above contains information on the installation of fire detection in areas classified as safety-related. This submittal will add to or amend the information and commitments submitted in Reference (c).

a. Zone C-F-3-Z, Containment Operating Floor

As previously submitted, the Containment Operating Floor has very little equipment and cables that are safety-related. Detection has been installed in other areas of the containment where there are concentrations of combustibles. Additionally, the Containment Operating Floor is a huge volume. Air movement throughout the volume, the size of the volume, and the height of the Containment would prevent the effective placement of detection, even if it were to be proven necessary. Because of the placement of detection in areas containing concentrations of combustibles, we feel there is no need for further detection.

- b. Zones MS-F-1A-Z, 1B-Z, 2A-Z, 2B-Z, 3A-Z, 3B-Z, 5A-Z, Main steam and Feedwater Pipe Enclosures

We wish to re-state the fact that there is a very low level of combustibles in these zones. While they are not separated from each other by full three-hour barriers, they are separated by space and by reinforced concrete walls. Because of the space, construction, and low level of combustibles, if a fire were to start in these areas, it would self-extinguish rather than expand to other areas. We feel there is no need for detection in these areas because of the very low probability of a fire.

- c. Control Building, Areas CB-F-2B-A, 2C-A, 3B-A

We will install detection in these areas.

- d. Diesel Generator Building Areas DG-F-3EA, 3F-A

These are plenum areas, supplying ventilation air to various rooms. The amount of combustibles is low. The air movement in the room is high. The rooms being supplied from these plenum areas have detection installed. A fire, if started, would self-extinguish because of the lack of combustibles. We feel there is no need for detection in these areas.

- e. Primary Auxiliary Building

PAB-F-2A-Z, 2B-Z

As previously stated, these are tank areas. There are virtually no combustibles and no chance for a fire to occur. No detection is necessary.

PAB-F-3A-Z, 1J-Z

Again, these are areas containing pipes, valves, tanks, and heat exchangers, with virtually no combustibles. No detection is necessary.

PAB-F-4-Z

As previously noted, the only equipment in this zone classified as safety-related is the Vent Stack Radiation Monitor. A fire in this area would not affect the safe operation or shutdown of the plant. No detection is necessary.

PAB-F-1K-Z

We reiterate, this is the RCA walkway and Non-Radioactive Pipe Tunnel. There are no combustibles in the area, only piping and valves. No detection is necessary.

f. Fuel Storage Building, FSB-F-1-A

The Fuel Storage Building is a locked, limited access area. The fire load in the area is very low. A fire in the area would not affect the safe operation of the plant, would not prevent a safe shutdown, nor would it cause a threat to public safety. No detection is necessary.

g. Service Water Cooling Tower, CT-F-3-0

As previously stated, this is the top deck of the Cooling Tower, open to the elements. There are no combustibles except the enclosed fan motors. No detection is necessary.

h. Turbine Building, TB-F-1A-Z, F-2-Z

The automatic sprinklers, through their water alarms, provide all the detection necessary for these areas. There is not need for further detection.

i. Waste Processing Building, W-F-2A-Z, W-F-2B-Z

As previously stated, these areas contain Safety Class 3 equipment associated with the Waste Gas System. All electrical equipment is Non-Class 1E. There are no active safety-related components in the area. A fire in these areas would not prevent the safe shutdown of the plant. No detection is necessary.

7. Decontamination Areas

There are two designated decontamination areas in the plant. One is off the RCA Shop in the Administration and Service Building. There is no safety-related equipment associated with this area. A fire in the area will not affect plant operation or the safe shutdown. Provision of fire suppression in this area is a question of property protection, which is not part of the NRC review.

The second area is in the Waste Storage Building. There is no safety-related equipment located in the Decontamination Area. The room has reinforced concrete walls, with non-rated metal doors. One is a roll-up door, the second is a double door to permit passage of a monorail. Combustible materials are not stored in the area. The materials now in use to decontaminate equipment are generally non-combustible. When the area is in use, it is occupied. A fire in the room would have little or no affect on equipment or systems outside the room. For these reasons, we feel there is no reason to install detection or suppression in the room.

8. Drains in Safety-Related Areas

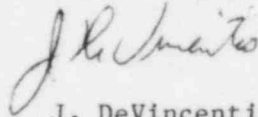
We have investigated worst-case actuation of suppression systems in both the Cable Spreading Room and Diesel Generator Building. These investigations show that the drains can handle, as a minimum, the water resulting from fifteen minutes of deluge system operation in both areas. We feel that this is sufficient for the areas.

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If you have any questions on the information presented in this letter,
please contact us.

Very truly yours,



J. DeVincentis
Project Manager

EAS/fsf