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November 20, 1980  
JPN-80-53

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Director of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. Thomas A. Ippolito  
Operating Reactors Branch No. 2  
Division of Licensing

Subject: James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
NRC Review of Fire Protection Program  
Safety Evaluation Supplementary Items

Dear Sir:

This letter is in response to your October 3, 1980 letter which requested final disposition of those unacceptable (3.2.1 and 3.2.8) and incomplete (3.1.9, 3.1.15 and 3.1.20) items identified.

a) Item 3.1.20 - Electrical Cable Penetration Qualification

Electrical cable penetrations are being protected by two basic materials; 1) a RTV Silicone Foam and 2) a RTV Silicone Elastomer. The fire stop supplier in both cases is TECH-SIL, Inc. of Elk Grove Village, Illinois. Enclosure 1 provides a copy of: a) the NEL-PIA fire stop acceptance form for the RTV silicone foam, b) Test Report TS-TP-0043 of 20 penetration seal configurations and the acceptance of this report by ANI, and c) copies of the TECH-SIL installation instructions from which the Authority has prepared maintenance procedures.

These documents, upon your review, should resolve this item.

b) Item 3.2.8 - Fire Pump Capacity

The Authority's letter dated September 5, 1979 (JPN-79-55) presented three (3) areas where a single fire pump was not

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capable of meeting the combined demand for the fixed water suppression systems and 1000 gpm for manual hose streams.

The three areas of concern were a) system 76.5.2.2 - Turbine Building Elevation 272, Zone 2R, b) system 76.5.2.4 - Turbine Building Elevation 272, Zone 1B, and c) system 76.5.2.7 - Turbine Building Elevation, Zone 1. Since the three areas are under the turbine operating floor, they are generally considered extra hazard occupancy. The design as installed had received review and approval by the applicable jurisdictional organization at that time; i.e., NEL-PIA.

At present, per NFPA 13 - section 2-2.1.3, "Water demand for hydraulically designed systems for protecting extra hazard occupancies or extra hazard portions of other occupancies shall be determined by the authority having jurisdiction", which in this case is the American Nuclear Insurers (ANI). ANI requires two design points for sprinkler systems under the turbine operating floor: (1) 0.3 gpm/sq. ft. over the most remote 3000 sq. ft., and (2) 0.2 gpm/sq. ft. over the entire area protected by a system, not to exceed 10,000 sq. ft. ANI also recommends a 1000 gpm hose stream allowance. The three sprinkler zones referenced above are all central fed, wet pipe sprinkler systems, generally using extra hazard pipe schedule. Per a telephone conversation on November 7, 1980 with Mr. Robert Sawyer, ANI, it was indicated that for this type of sprinkler system, an average density design basis is adequate per ANI standards. This means that the water supply should be capable of providing the average density over the design area, not necessarily maintaining this density at the most remote head. For example, the flow required to maintain a density of 0.3 gpm/sq. ft. over the most remote 3000 sq. ft. is 900 gpm ( $.3 \times 3000$ ).

New calculations based on the ANI average density design basis method and, after allowing 1000 gpm for hose streams, show that the three sprinkler systems can provide more than the densities required by ANI. The resultant densities are:

Zone	Required Spray Density (gpm/sq. ft.)	Available Avg. Spray Density (gpm/sq. ft.) @ area (sq. ft.) after 1000 gpm hose stream allowance
2R (76.5.2.2)	.3	.39 @ 3000
2R (76.5.2.2)	.2	.32 @ 4256 (entire area)


ZONE	Required Spray Density (gpm/sq. ft.)	Available Avg. Spray Density (gpm/sq. ft.) @ area (sq. ft.) after 1000 gpm hose stream allowance
1 (76.5.2.7)	.3	.31 @ 3000
1 (76.5.2.7)	.2	.22 @ 7938 (entire area)
1B (76.5.2.4)	.3	.37 @ 3000
1B (76.5.2.4)	.2	.29 @ 5563 (entire area)

Enclosure 2 shows the resultant pump curve versus various design bases and sprinkler zones. Together with the justification provided in our September 5, 1979 letter, the Authority considers that a single fire pump has the capacity to supply any fixed fire water suppression system plus an adequate reserve for fire hose streams.

- c) Items 3.2.1 - Fire Hazard Analysis  
3.1.9 - Alternate Shutdown Capability - Relay Room  
3.1.15 - Alternate Shutdown Capability - Cable Spreading Room

Enclosure 3 is the James A. FitzPatrick Nuclear Power Plant Safe Shutdown Analysis dated September, 1979 and revised as of October, 1980 to reflect the actual modifications being installed in the facility. This document of approximately 120 pages should provide the necessary information requested by your October 3, 1980 letter with regard to the above three items. This analysis and the resultant modifications utilize the guidelines of Appendix A to BTP-APCSB 9.5-1 which was and still is the licensing basis for the above items. Approximately 75% of the modifications necessitated by the above mentioned analysis for these items have already been completed.

Very truly yours,

  
J. P. Bayne  
Senior Vice President  
Nuclear Generation

ENCLOSURE 1

ITEM 3.1.20 - ELECTRICAL CABLE PENETRATION QUALIFICATION