



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 206 TO FACILITY OPERATING LICENSE NO. DPR-59

POWER AUTHORITY OF THE STATE OF NEW YORK

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated December 22, 1993, the Power Authority of the State of New York (the licensee) submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant Technical Specifications (TS). The amendment adds Limiting Conditions for Operation and Surveillance Requirements to Tables 3.12.1, "Water Spray/Sprinkler Protected Areas," and 4.12.1, "Water Spray/Sprinkler System Tests," and clarifies the associated Bases to reflect the installation of a new full-area fire suppression system in the east and west cable tunnels. This new full-area fire suppression system was installed because the previous sprinkler system did not provide coverage to some cable trays and the sprinkler head orientation did not provide full coverage of the cable trays where it was installed. The amendment also corrects other portions of Tables 3.12.1 and 4.12.1 to ensure consistency with changes made to reflect the east and west cable tunnel modification.

2.0 EVALUATION

The Code of Federal Regulations, 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," requires that each nuclear power plant establish a fire protection program that extends the concept of defense-in-depth to fire protection in fire areas important to safety, with the following objectives:

1. To prevent fires from starting;
2. To detect rapidly, control, and extinguish promptly those fires that do occur;
3. To provide protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by the fire suppression activities will not prevent the safe shutdown of the plant.

Fire detection and suppression are key components of the FitzPatrick fire protection program.

On January 15, 1992, the fire suppression systems in the east and west cable tunnels were declared inoperable. This action was taken by the licensee following a review of the hydraulic design calculations which indicated that the sprinkler systems did not provide coverage to some cable trays and the sprinkler head orientation did not provide full coverage of the cable trays where it was installed. The licensee subsequently performed a modification which replaced the existing cable tunnel suppression systems with one automatic wet pipe system per tunnel. The new system increases the suppression capability for the cable trays by the addition of directional frangible element nozzles. The new system does not rely on any valves that must receive an actuation signal to operate to provide flow. The system is automatically actuated when local heat levels reach a predetermined level. Fusible link sprinklers and frangible element nozzles provide a sectionalized fire suppression capability and reduce the potential for flooding in the tunnels. Three zones of smoke detection per tunnel will remain. Fire will be indicated by alarms from the smoke detectors. The new systems use a flow alarm check valve to indicate system actuation. Design characteristics of the new fire suppression system include:

1. Seismic failure of the new fire suppression system which could affect safety related equipment is prevented by design.
2. Adequate drainage is provided by existing drain lines to accommodate worst case flow in either the east or west cable tunnel. Cable immersion poses no safety concern.
3. Water damage due to events such as inadvertent actuation, seismically induced pipe cracks, or moderate energy pipe cracks will not affect the ability of the plant to achieve and maintain safe shutdown from the control room.
4. The system will provide suppression spray coverage for the plant to meet design requirements of NFPA 13-1991 and 15-1990. The fire detection system is designed, installed, and tested in accordance with NFPA 72-1990.

The licensee proposes to add LCOs and Surveillance Requirements to TS Tables 3.12.1 and 4.12.1 and clarify the associated Bases to reflect the installation of the new full area fire suppression system in the east and west cable tunnels. The licensee also proposes to correct other portions of Tables 3.12.1 and 4.12.1 to ensure consistency with changes made to reflect the east and west cable tunnel modification. Specifically, Table 3.12.1 will be revised to indicate that the east and west cable tunnels have ionization device fire detection capability and are protected by fusible link sprinklers with frangible element nozzles that initiate automatically. Ionization

devices, but not flow alarms will be added to the fire detection column of Table 3.12.1. NFPA 13-1991 and NFPA 72 E-1990 do not require flow alarms to be used for fire detection. For consistency, the sprinkler flow alarms in Table 3.12.1 under fire detection for the west diesel fire pump room and the battery room corridor are being removed. Deleting flow alarms does not reduce the ability of the plant to detect fires since detection is accomplished by ionization devices in the east and west cable tunnels, the west diesel fire pump room, and the battery room corridor. Also, ionization devices are being added to Table 3.12.1 to reflect the presence of fire detectors in the west diesel fire pump room as required by NFPA 72 E-1990. These fire detectors were not added to the TSs when they were installed.

TS Table 4.12.1 specifies testing required for water spray/sprinkler systems. This table will be revised to reflect the new fire suppression system design in the east and west cable tunnels. Specifically, requirements for spray nozzle inspections and air flow tests have been removed since the open head sprays have been removed. The new suppression system is a wet pipe system with closed sprinklers. Also, the valves subject to cycling as required by Table 4.12.1 have been redefined to include flow alarm check valves. This change will be consistently reflected in the testing requirements for the east and west cable tunnels and the battery room corridor.

The NRC staff has reviewed the licensee's request for an amendment to the FitzPatrick TSs and the associated safety evaluation. The staff concludes that the new east and west cable tunnel suppression systems, if properly designed, installed, and maintained, improve the ability of the FitzPatrick fire protection system to suppress fires because the suppression coverage for the cable trays is increased. The fire detection and suppression capabilities now provided in the east and west cable tunnels should ensure that defense-in-depth, as outlined in 10 CFR Part 50, Appendix R, is achieved. Furthermore, the testing requirements established for the suppression systems are adequate to verify header integrity and ensure valve operability. Other changes incorporated into TS Tables 3.12.1 and 4.12.1 ensure consistency in the fire detection and protection descriptions and the system testing required. Finally, the NRC staff concludes that the changes do not alter the conclusions of the FitzPatrick accident analyses as documented in the Final Safety Analysis Report or the Safety Evaluation Report.

For the above reasons, the NRC staff finds that the proposed amendment is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 2634). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor:
B. McCabe

Date: February 28, 1994

February 28, 1994

Mr. William A. Josiger, Acting Executive
Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Josiger:

SUBJECT: ISSUANCE OF AMENDMENT FOR JAMES A. FITZPATRICK NUCLEAR POWER PLANT
(TAC NO. M88459)

The Commission has issued the enclosed Amendment No. 206 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated December 22, 1993.

The amendment adds Limiting Conditions for Operation and Surveillance Requirements to Tables 3.12.1, "Water Spray/Sprinkler Protected Areas," and 4.12.1, "Water Spray/Sprinkler System Tests," and clarifies the associated Bases to reflect the installation of a new full-area fire suppression system in the east and west cable tunnels. This new full-area fire suppression system was installed because the previous sprinkler system did not provide coverage to some cable trays and the sprinkler head orientation did not provide full coverage of the cable trays where it was installed. The amendment also corrects other portions of Tables 3.12.1 and 4.12.1 to ensure consistency with changes made to reflect the east and west cable tunnel modification.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:
Brian C. McCabe, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 206 to DPR-59
- 2. Safety Evaluation

cc w/enclosures:

See next page

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