



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 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 19, 1991, 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 requested changes would revise Technical Specification (TS) Sections 3.12.F and 4.12.F, "Fire Barrier Penetration Seals," and the associated Bases to be more consistent with the NRC's Standard Technical Specifications, NUREG-0123, "Standard Technical Specifications for General Electric Boiling Water Reactors," dated fall 1980. Specifically, TSs 3.12.F.1.a and 4.12.F.1.a would be revised to clarify which fire barriers are covered by the associated Limiting Conditions for Operation (LCO) and what actions are required when a fire barrier penetration is found not in the as-designed condition, respectfully. Furthermore, TS 3.12.F.1.b would be revised to allow the use of hourly fire watch patrols supplementing operable fire detectors in lieu of continuous fire watches when a fire barrier penetration is deemed non-functional. Administrative changes were also requested by the licensee.

2.0 STATEMENT OF EXIGENT CIRCUMSTANCES

This proposed amendment was processed on an exigent basis to reduce unnecessary personnel exposure and adhere to accepted ALARA principles. Specifically, on August 2, 1991, during a meeting with the NRC's staff concerning FitzPatrick's fire protection program, the licensee committed to perform a full baseline barrier seal inspection. As a baseline inspection, this inspection uses inspection requirements more detailed than previously employed at FitzPatrick and a new acceptance criteria. On November 8, 1991, the first fire barrier penetration seal was inspected. Engineering evaluations of the seals inspected have resulted in a significantly higher failure rate than anticipated by the licensee. In accordance with TS 3.12.F.1.b, when a fire barrier penetration seal is determined to be non-functional, a continuous fire watch is established on one side of the fire barrier. As a result of the non-functional fire barrier penetration seals found to date during the baseline inspection, approximately 28 continuous fire watches have been established. Furthermore,

as more fire barrier penetration seals are determined to be non-functional during this baseline inspection, additional personnel will be required to stand continuous fire watch. Because many of these penetrations are in radiation and high radiation areas, the posting of continuous fire watches (as opposed to hourly roving fire watches) results in unnecessary personnel exposures and is contradictory to ALARA principles. The use of roving hourly fire watches would provide an estimated reduction in personnel exposure of approximately 20 person-rem during the remainder of the baseline inspection. On December 19, 1991, the NRC granted a Temporary Waiver of Compliance allowing hourly fire watch patrols in areas with operable fire detection capability in lieu of continuous fire watches when a fire barrier penetration is determined to be non-functional. This Temporary Waiver of Compliance remains in effect until the NPC completes its review of this associated application for an exigent technical specification amendment.

3.0 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 barriers are just one feature of the FitzPatrick fire protection program. The functional integrity of these fire barrier penetrations ensures that fire will be confined or adequately retarded from spreading to an adjacent portion of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barrier penetrations are a passive element in the facility fire protection program and are subject to periodic inspections.

The NRC staff has reviewed the licensee's proposed revision to TS 3.12.F.1.b adopting the use of an hourly fire watch in an area with operable fire detection in lieu of a continuous fire watch when a fire barrier penetration seal is determined to be non-functional. The staff concludes that an hourly fire watch in an area with operable fire detection constitutes an equivalent level of protection as a continuous fire watch and is consistent with the

Standard Technical Specifications. These surveillance options also constitute an acceptable alternative to functional fire barrier penetration seals. Furthermore, the use of an hourly fire watch, when permitted, would reduce unnecessary personnel exposure and adhere to accepted ALARA principles.

The staff has also reviewed the current levels of fire protection, detection, and suppression at the FitzPatrick plant to ensure that a fire in the vicinity of a non-functional fire barrier penetration seal will be promptly detected and extinguished. The staff found that the defense-in-depth concept has been incorporated into the FitzPatrick fire protection program via detection, suppression, and protection features which include:

- ° Automatic suppression and/or detection systems are installed in some fire hazard areas including carbon dioxide systems, halon and water sprays.
- ° Manual hose stations are installed throughout the plant.
- ° A trained fire brigade is on site to respond to a fire.
- ° A local fire department is available to respond to a fire.
- ° Portable extinguishers are installed throughout the plant.
- ° Fire protection systems are periodically tested to assure that they are capable of performing their intended function.
- ° Fire barriers separate safety-related components and reduce the potential for the spread of fire between fire areas or zones.
- ° An alternate safe shutdown panel, procedures and operator training will assure that the plant can be safely shutdown and maintained in a shutdown condition.
- ° The physical integrity of structural steel is assured by fire proof coatings.
- ° Emergency lighting and communication systems have been installed.

The staff concludes that, even if a fire barrier penetration seal becomes non-functional, the current levels of detection, suppression, and protection, at FitzPatrick are adequate to ensure maintenance of safe shutdown capability and to provide reasonable assurance of prompt extinguishment of postulated fires.

The NRC staff has also reviewed the proposed changes to TSs 3.12.F.1.a and 4.12.F.1.a and concludes that these changes merely clarify which fire barriers are covered by the associated LCO and what actions are required when a fire barrier penetration is found not in the as-designed condition, respectively. The staff concludes that these changes are consistent with the Standard Technical Specifications and Bases and do not adversely affect the capability of the fire barrier penetration seals to perform their design function.

The NRC staff determines that the remaining proposed changes to the TS are administrative changes and cannot impact the capability of the fire barrier penetration seals to perform their design function.

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

4.0 FINAL NO SIGNIFICANT HAZARD CONSIDERATION

The Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from an accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The following evaluation, by the licensee and with which we agree, demonstrates that the proposed amendment does not involve a significant hazards consideration.

Operation of the FitzPatrick plant in accordance with the proposed Amendment will not involve a significant hazards consideration as defined in 10 CFR 50.92, since it does not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes involve no hardware changes, no changes to the functions of the fire barrier penetration seals or the fire barriers, and does [do] not change the ability of fire protection equipment to perform its intended functions. The compensatory actions [surveillance requirements] implemented by the Authority [licensee] constitute a level of protection equivalent to that required in the existing FitzPatrick Technical Specifications and identical to that previously accepted by the NRC staff.

2. create the possibility of a new or different kind of accident from those previously evaluated.

The proposed changes involve no hardware changes, no changes to the functions of the fire barrier penetration seals or the fire barriers, and do not change the ability of fire protection equipment to perform its intended functions. These changes will not introduce any new fire hazards. A functional fire detection system on one side of the barrier plus an hourly patrol or a continuous fire watch constitutes an equivalent level of protection.

3. involve a significant reduction in the margin of safety.

The proposed changes involve no hardware changes, no changes to the functions of the fire barrier penetration seals or the fire barriers, and does not change the ability of fire protection equipment to perform its intended functions. The probability of a fire will not be increased nor will the ability of the fire detection and suppression systems to detect and extinguish a fire be degraded as a result of these changes.

Based on the foregoing, the Commission has concluded that the standards of 10 CFR 50.92 are satisfied. Therefore, the Commission has made a final determination that the proposed amendment does not involve a significant hazards consideration.

5.0 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.

6.0 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 to the 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 (56 FR 67644). 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.

7.0 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:
Brian C. McCabe

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