

ATTACHMENT I to JPN-92-057

PROPOSED TECHNICAL SPECIFICATION CHANGES
TO REFLECT A FIRE PROTECTION MODIFICATION

(JPTS-91-020)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

Docket No. 50-333

DPR-59

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TABLE 3.12.1

WATER SPRAY/SPRINKLER PROTECTED AREAS

AREA	FIRE DETECTION	TYPE PROTECTION(3)	TYPE INITIATION
1) West Cable Tunnel	Ionization and Electric Heat Activated Device	Water Spray	Automatic/Manual
2) East Cable Tunnel	Ionization and Electric Heat Activated Device	Water Spray	Automatic/Manual
3) Recirculation MG Room	Electric Heat Activated Device	Fusible Link Sprinklers	Automatic/Manual
4) Emergency Diesels(1)	Electric Heat Activated Device	Fusible Link Sprinklers	Automatic/Manual
5) HPCI	Electric Heat Activated Device	Water Spray	Manual
6) RCIC	Electric Heat Activated Device	Water Spray	Manual
7) Standby Gas Treatment Trains(2)	Electric Heat Activated Device	Water Spray	Manual
8) West Diesel Fire Pump Room	Sprinkler Flow Alarm	Fusible Link Sprinklers	Automatic
9) Battery Room Corridor	Ionization and Sprinkler Flow Alarm	Fusible Link Sprinklers	Automatic

Notes for Table 3.12.1

- Each of two (2) Emergency Diesel Generator Systems is a separate protected area, each system contains two (2) separate rooms.
- Each of two (2) Standby Gas Treatment trains is a separate area.
- All areas are also protected by fire hoses and portable dry chemical and/or CO₂ fire extinguishers.

TABLE 4.12.1

WATER SPRAY/SPRINKLER SYSTEM TESTS

AREA	CYCLING EACH VALVE	SPRAY NOZZLE INSPECTION	HEADER INTEGRITY INSPECTION	NOZZLE AIR FLOW TEST
1) West Cable Tunnel	Once/6 Months	Once/1.5 Years	Once/1.5 Years	Once/3 Years
2) East Cable Tunnel	Once/6 Months	Once/1.5 Years	Once/1.5 Years	Once/3 Years
3) Recirculation MG Room	Once/6 Months	N/A	Once/1.5 Years	N/A
4) Emergency Diesel Rooms	Once/6 Months	N/A	Once/1.5 Years	N/A
5) HPCI	Once/6 Months	Once/1.5 Years	Once/1.5 Years	Once/3 Years
6) RCIC	Once/6 Months	Once/1.5 Years	Once/1.5 Years	Once/3 Years
7) Standby Gas Treatment Trains	Once/6 Months	Once/1.5 Years	Once/1.5 Years	Once/3 Years
8) West Diesel Fire Pump Room	None(1)	N/A	Once/1.5 Years	N/A
9) Battery Room Corridor	None(1)	N/A	Once/1.5 Years	N/A

Notes for Table 4.12.1

1. Wet pipe sprinkler system.

**SAFETY EVALUATION FOR
PROPOSED TECHNICAL SPECIFICATION CHANGES TO
REFLECT A FIRE PROTECTION MODIFICATION (JPTS-91-020)**

I. DESCRIPTION OF THE PROPOSED CHANGES

This application for an amendment to the James A. FitzPatrick Technical Specifications adds operability and surveillance requirements to Tables 3.12.1 and 4.12.1 to reflect a plant modification that will improve fire protection at the Authority's FitzPatrick nuclear power plant. The modification installs an automatic fire suppression system in the battery room corridor. The changes to the Technical Specifications are addressed below.

Minor changes in format, such as type font, margins or hyphenation, are not described in this submittal. The changes are typographical in nature and do not affect the content of the Technical Specifications.

Page 244j, Table 3.12.1

Insert item 9 with the following information:

Area:	Battery Room Corridor
Fire Detection:	Ionization and Sprinkler Flow Alarm
Type Protection:	Fusible Link Sprinklers
Type Initiation:	Automatic

Page 244q, Table 4.12.1

Insert item 9 with the following information:

Area:	Battery Room Corridor
Cycling Each Valve:	None(1)
Spray Nozzle Inspection:	N/A
Header Integrity Inspection:	Once/1.5 Years
Nozzle Air Flow Test:	N/A

II. PURPOSE OF THE PROPOSED CHANGES

The purpose of the proposed changes to the Technical Specifications is to add operability and surveillance requirements to Tables 3.12.1 and 4.12.1 to reflect a plant modification that will improve fire protection at the Authority's FitzPatrick nuclear power plant.

On August 2, 1991 Authority personnel met with the NRC staff to discuss James A. FitzPatrick Nuclear Power Plant fire protection. At this meeting the Authority committed to install a fire suppression system in the Battery Room Corridor prior to restart from the 1992 refueling outage. The Authority subsequently confirmed this commitment in Reference 1.

SAFETY EVALUATION

Page 2 of 6

The NRC staff granted the Authority an exemption from the requirements of 10 CFR 50, Appendix R, Section III.G.3.b which allowed continued plant operation until a fixed fire suppression system is installed in this area (Reference 2). When this suppression system is installed, the battery room corridor (Fire Zone BR-5) will be in compliance with the requirements of 10 CFR 50, Appendix R, Section III.G.3 and the exemption will no longer be required.

A description of Fire Zone BR-5 was included in the attachment to Reference 3. As an interim compensatory measure a continuous fire watch has been posted in this area.

The modification will not change the existing fire detection capability in the battery room corridor which consists of ionization smoke detectors. These detectors will continue to alarm in the control room. In addition, a system pressure switch, installed with the new suppression system, will indicate actuation by alarming in the control room.

The new suppression system is a wet pipe design with fusible link sprinklers that are heat actuated to allow for sectionalized fire suppression capability. The system is automatically initiated when the nearby temperature reaches the melting point of the fusible

III. SAFETY IMPLICATIONS OF THE PROPOSED CHANGES

The proposed changes to the Technical Specifications have no adverse safety implications. The addition of a new suppression system for the Battery Room Corridor improves the ability of the plant fire protection system to suppress fires. The system was designed and analyzed in accordance with James A. FitzPatrick Fire Protection Program requirements (Reference 4). The operability and surveillance requirements added to reflect this modification are consistent with operability and surveillance requirements for similar fire protection systems. These requirements are also consistent with industry practice as contained in the Standard Technical Specifications (Reference 5). The changes do not alter the conclusions of the FitzPatrick accident analyses as documented in the FSAR or the NRC staff's SER.

Design and Analysis

The modified fire suppression system was designed, analyzed, and installed in accordance with the FitzPatrick Fire Protection Program requirements. Specific design and analysis information related to the conclusions in the modification safety evaluation include the following:

1. Seismic interactions between the new fire suppression system and safety related equipment are prevented. The new fire suppression system is a Class M System that will be Seismic Class II supported. Supports are spaced to prevent the creation of missiles and to preclude pipe rupture (except for line cracks associated with moderate energy piping) with attendant flooding (Reference 6).

SAFETY EVALUATION

Page 3 of 6

2. Adequate drainage is provided by five floor drains in the battery room area (i.e., the battery room corridor and the two adjoining battery rooms) to accommodate full system actuation. System operation, full flow through all sprinklers, exceeds the flooding associated with a moderate energy pipe crack (Reference 7). Water on the battery area floor will not damage safety related equipment. The operation of the batteries is not affected since the batteries are raised off the floor.
3. Water damage due to events such as inadvertent actuation or pipe crack from the fire suppression system will not affect the ability of the plant in achieving and maintaining safe shutdown from the control room. Because the effects of the postulated fire in the Battery Room Corridor (i.e., loss of shutdown capability from the control room) are more severe than those from water damage, the addition of sprinklers provides a net safety benefit since the response time to such a fire is reduced with a corresponding reduction in potential fire damage.

Water spray in the battery room corridor will not affect the cables located in the battery room corridor since all such cables are fully insulated and are impervious to the water spray. Operation of the circuits associated with these cables will remain unaffected by the operation of the fire suppression system, including those cables required for RCIC operation. Establishing and maintaining the reactor in a cold shutdown condition can, therefore, be achieved without resorting to remote/alternate shutdown (i.e., using ADS/LPCi) from outside of the control room.

Water damage to the distribution transformers (71PT-71ESSB1 and 71PT-71ACB2) in the battery room corridor may cause the loss of "B" train control room indication. This will not prevent the operators from determining plant status and achieving reactor shutdown from the control room since the "A" train instruments remain available. Water damage to the equipment panels (71ESSB1 and 71ACB2) resulting in the loss of ventilation for the battery rooms and battery room corridor will be mitigated by establishing temporary ventilation as required by Abnormal Operating Procedure AOP-58 (Reference 8).

Limiting Conditions for Operation

The system added to Table 3.12.1 is subject to the same limiting conditions for operation as those which are in Specification 3.12.B. This consistency with established operating restrictions and reporting requirements ensures that the plant modification will provide an equivalent level of protection and margin of safety as that provided by other fire protection systems.

Surveillance Requirements

An entry of "NONE" is proposed for the cycling of valves in the new system. The new suppression system is automatically actuated by local heat levels requiring no detector/actuation circuitry and has only one normally open testable valve. This valve is an outside stem and yoke (OS&Y) valve which is manually operated for maintenance purposes and system shutoff while the surveillance requirement is intended to allow operator determination of system operability. A surveillance

SAFETY EVALUATION

Page 4 of 6

frequency of "NONE" is consistent with existing Technical Specification requirements and current NRC requirements for wet pipe fire protection systems provided in Section 4.7.7.2 of the Standard Technical Specifications.

The surveillance requirements to perform a spray nozzle inspection and a nozzle air flow test are specified as "Not Applicable" in this proposed Technical Specification amendment. NFPA 15 (Reference 9) specifies that "All spray nozzles shall be inspected for proper positioning, external loading, and corrosion, and cleaned if necessary at intervals of not more than twelve months" The new suppression system is a wet pipe system with closed sprinklers. The surveillance requirement of "Not Applicable" is consistent with existing Technical Specification requirements and current NRC requirements for wet pipe fire protection systems provided in Section 4.7.7.2 of the Standard Technical Specifications.

A surveillance requirement to inspect the header integrity once per 1.5 years is proposed for the battery room corridor system. This is consistent with surveillance requirements for other similar fire protection systems in the Technical Specifications. The frequency interval is longer than NFPA 15 which requires annual inspection but is consistent with NRC guidance provided by Section 3/4.7.7.1 of the Standard Technical Specifications.

IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

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

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

The proposed changes revise the Technical Specifications to reflect a plant modification to the Fire Protection System. These changes will increase the ability to suppress fires. The modification to the fire protection system will not adversely affect the ability of plant personnel and fire protection equipment to detect and extinguish a fire. The proposed revision to Tables 3.12.1 and 4.12.1 of the Technical Specifications will provide limiting conditions of operation and surveillance requirements for the modification consistent with the limiting conditions of operation and surveillance requirements of other similar fire protection systems. These changes to the Technical Specifications assure that the new system is operable by periodic surveillance and that required actions are taken if it is not available.

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

The modification does not create the possibility of a new or different kind of accident. The modification to the fire protection system provides additional protection against the possibility of fire in the battery room corridor. The

SAFETY EVALUATION

Page 5 of 6

proposed changes to the Technical Specifications do not alter plant operations or operating procedures. The provision of a wet pipe sprinkler system can result in water sprays but the shutdown requirements due to previously analyzed fire effects bound the effects of water spray. The effects of inadvertent actuation have been evaluated and do not initiate a different kind of accident. Although it may cause the loss of certain equipment, it is less limiting than other analyzed events including a fire in this area.

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

The proposed revision to the Technical Specifications to reflect the installation of a fire suppression system in the battery room corridor will not adversely affect the margin of safety for equipment and personnel in that area. These changes improve the plant's capability to suppress fires and limit fire damage. The potential for flooding or water damage has been evaluated and is bounded by fire effects. This change, therefore, results in a net improvement in plant safety.

V. IMPLEMENTATION OF THE PROPOSED CHANGES

These proposed changes will not affect the ALARA Program at the FitzPatrick plant, nor will they impact the environment. The surveillance requirements will not add inspections to high radiation areas. The construction work to implement the modification will be inside existing structures so there will be no environmental discharges. The construction work will not be in radiation areas. When completed, testing of the modification will be in compliance with current practices and will not impact the environment in a manner different than current practice. These practices do not have unacceptable consequences. The modification supported by these technical specification changes will improve the plant's Fire Protection Program capability in mitigating fires.

VI. CONCLUSION

The changes, as proposed, do not constitute an unreviewed safety question as defined in 10 CFR 50.59. That is, they:

1. will not change the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report;
2. will not increase the possibility of an accident or malfunction of a type different from any previously evaluated in the Safety Analysis Report;
3. will not reduce the margin of safety as defined in the basis for any technical specification; and
4. involve no significant hazards consideration, as defined in 10 CFR 50.92.

SAFETY EVALUATION

Page 6 of 6

VII. REFERENCES

1. NYPA letter, R.E. Beedle to U.S. NRC, dated August 16, 1991, (JPN-91-043), regarding schedule for short term fire protection actions.
2. NRC letter, R.A. Capra to R.E. Beedle, dated September 18, 1991, (JAF-91-294), "Issuance of a Technical Exemption from a Requirement of 10 CFR part 50, Appendix R, for the James A. FitzPatrick Nuclear Power Plant (TAC NO. 81184)."
3. NYPA letter, R.J. Converse to U.S. NRC, dated July 31, 1991, (JAFP-91-0454), "Exemption Request for Area Wide Suppression in the Battery Room Corridor."
4. James A. FitzPatrick Nuclear Power Plant Safety Evaluation for Fire Protection - Battery Room Corridor (BR5) Modification, JAF-SE-91-086, Revision 1, dated August 19, 1992.
5. NUREG-0123, "Standard Technical Specifications for General Electric Boiling Water Reactors (BWR/5)", Revision 3, dated Fall 1980.
6. James A. FitzPatrick Nuclear Power Plant Pipe Stress Calculation, JAF-CALC-FPS-00609, Revision 0, dated July 23, 1992.
7. James A. FitzPatrick Nuclear Power Plant Battery Room Corridor Flooding Analysis, JAF-CALC-FPS-00558, Revision 0, dated June 16, 1992.
8. James A. FitzPatrick Nuclear Power Plant Abnormal Operating Procedure, AOP-58, "Station Battery Room Emergency Ventilation," Revision 1, dated August 15, 1991.
9. National Fire Protection Association Document 15 (NFPA 15), "Water Spray Fixed Systems for Fire Protection," dated 1990.
10. James A. FitzPatrick Nuclear Power Plant Updated Final Safety Analysis Report, Section 3.8 "Fire Protection System," through Revision 5, dated January 1992.
11. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report (SER), dated November 20, 1972 and supplements.

ATTACHMENT III to JPN-92-057

PROPOSED TECHNICAL SPECIFICATION CHANGES
TO REFLECT A FIRE PROTECTION MODIFICATION
MARKUP OF TECHNICAL SPECIFICATION PAGES

(JPTS-91-020)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
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Amendment No. ~~14~~ 14?

Insert
"A"

TABLE 4.12.1
WATER SPRINKLER SYSTEM TESTS

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Notes for Table 4.12.1

1. Wet pipe sprinkler system

Insert
"B"

INSERT "A"

Battery	Ionization and Sprinkler	Fusible Link	Automatic
Room Corridor	Flow Alarm	Sprinklers	

INSERT "B"

Battery	Nono ⁽¹⁾	N/A	Once/1.5 Years	N/A
Room Corridor				