



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 28, 1994

Docket No. 50-333

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,

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

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Enclosures:

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

cc w/enclosures:
See next page

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Mr. William A. Josiger
Power Authority of the State of New York

James A. FitzPatrick Nuclear
Power Plant

cc:

Mr. Gerald C. Goldstein
Assistant General Counsel
Power Authority of the State
of New York
1633 Broadway
New York, New York 10019

Ms. Donna Ross
New York State Energy Office
2 Empire State Plaza
16th Floor
Albany, New York 12223

Resident Inspector's Office
U. S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, New York 13093

Mr. Harry P. Salmon, Jr.
Resident Manager
James A. FitzPatrick Nuclear
Power Plant
P.O. Box 41
Lycoming, New York 13093

Mr. J. A. Gray, Jr.
Director Nuclear Licensing - BWR
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Supervisor
Town of Scriba
Route 8, Box 382
Oswego, New York 13126

Mr. Robert G. Schoenberger, Acting
President
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, New York 10271

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

DATED: February 28, 1994

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

Docket File

NRC & Local PDRs

PDI-1 Reading

S. Varga, 14/E/4

J. Calvo, 14/A/4

R. Capra

C. Vogan

J. Menning

OGC

D. Hagan, 3302 MNBB

G. Hill (2), P1-22

C. Grimes, 11/F/23

ACRS (10)

OPA

OC/LFDCB

PD plant-specific file

C. Cowgill, Region I

C. McCracken, 8/D/1

S. West, 8/D/1

P. Madden, 8/D/1

cc: Plant Service list



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 206
License No. DPR-59

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Power Authority of the State of New York (the licensee) dated December 22, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-59 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 206, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 28, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 206

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages

244h
244i
244j
244q

Insert Pages

244h
244i
244j
244q

3.12 and 4.12 BASES

The Fire Protection System specifications provide pre-established minimum levels of operability to assure adequate fire protection during any operating condition including a design basis accident or safe shutdown earthquake.

- A. The high pressure water fire protection system is supplied by redundant vertical turbine pumps, one diesel driven and one electric motor driven, each design rated 2500 gpm at 125 psig discharge pressure. Both pumps take suction from the plant intake cooling water structures from Lake Ontario. The high pressure water fire protection header is normally maintained at greater than 115 psig by a pressure maintenance subsystem. If pressure decreases, the fire pumps are automatically started by their initiation logic to maintain the fire protection system header pressure. Each pump, together with its manual and automatic initiation logic combined makes up a redundant high pressure water fire pump.

A third fire pump, diesel-driven, has been installed and is set to automatically actuate upon decreasing pressure after the actuation of the first two fire pumps. No credit is taken for this pump in any analyses and the requirements of Technical Specifications 3.12 and 4.12 do not apply.

Pressure Maintenance subsystem checks, valve position checks, system flushes and comprehensive pump and system flow and/or performance tests including logic and starting subsystem tests provide for the early detection and correction of component failures thus ensuring high levels of operability.

- B. Safety related equipment areas protected by water spray or sprinklers are listed in Table 3.12.1. Whenever any of the

protected areas, spray or sprinklers are inoperable continuous fire detection and backup fire protection equipment is available in the area where the water spray and/or sprinkler protection was lost.

Table 4.12.1 specifies tests and inspections to detect nozzle blockage or breakage, to verify header integrity, and to ensure valve operability. Surveillance for flow alarm check valves in wet pipe sprinkler systems is performed by providing sufficient flow through the valve to activate the alarm. Full cycling is not required since the flow alarm check valves are not designed to latch open.

- C. The carbon dioxide systems provide total flood protection for eight different safety related areas of the plant from either a 3 ton or 10 ton storage unit as indicated in Table 3.12.2. Both CO₂ storage units are equipped with mechanical refrigeration units to maintain the storage tank content at 0°F with a resultant pressure of 300 psig. Automatic smoke and heat detectors are provided in the CO₂ protected areas and initiation is automatic and/or manual as indicated in Table 3.12.2. For any area in which the CO₂ protection is made or found to be inoperable, continuous fire detection is available and one or more large wheeled CO₂ fire extinguisher is also available for each area in which protection was lost.

Weekly checks of storage tank pressure and level verify proper operation of the tank refrigeration units and availability of sufficient volume of CO₂ to extinguish a fire in any of the protected areas.

3.12 and 4.12 BASES (continued)

Performance of the periodic tests and inspections listed in Table 4.12.2 are in accordance with NFPA-12, 1973, will verify the integrity of system nozzles and distribution headers as well as detect and remove any accumulation of rust or scale. The use of "puff test" rather than full flow tests will demonstrate proper valve operation without the attendant potential equipment and personnel hazards associated with full flow tests.

- D. Manual hose stations provide backup fire protection throughout the Plant. Those hose stations that are in or near areas with safety related equipment are listed in Table 3.12.3. Hose station location and hose length selection provides the capability of reaching any fire in a safety related area with the hose stream. When any of the hose stations listed in Table 3.12.3 is inoperable, providing additional hose lengths from other operable hose stations assures maintenance of this capability. Periodic inspection and tests are in accordance with NFPA Code guidelines and assures prevention, detection and correction of hose, nozzle, valve and/or gasket damage or deterioration to maintain high levels of operability.
- E. Early fire detection and fire fighting activity is essential to ensuring that any fire will result in minimum damage to safety related equipment. Since each area monitored utilizes a number of smoke and/or heat detectors when more than one detector is inoperable, early fire detection is assured by establishing a patrolling fire watch which check the area where the detectors are inoperable at least hourly. Wet pipe flow alarms are not depended upon for fire detection. Fire detection surveillance testing is therefore not required for wet pipe flow alarms by the Technical Specification.

Testing of smoke and heat detectors and associated circuitry every 6 months, in accordance with manufacturers and NFPA 72E-1974 recommendations ensures a high level of operability.

- F. The functional integrity of the fire barrier penetrations ensure that fire will be confined or adequately retarded from spreading to 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 barrier penetrations, including cable penetration barriers, fire doors and dampers are considered functional when the visually observed condition is the same as the as-designed condition.

During periods of time when the barriers are not functional, either, 1) a continuous fire watch is required to be maintained in the vicinity of the affected barrier, or 2) the fire detectors on at least one side of the affected barrier must be verified operable and a hourly fire watch patrol established until the barrier is restored to functional status.

JAFNPP

TABLE 3.12.1

WATER SPRAY/SPRINKLER PROTECTED AREAS

AREA	FIRE DETECTION	TYPE PROTECTION(3)	TYPE INITIATION
1) West Cable Tunnel	Ionization Device	Fusible Link Sprinklers/ Frangible Element Nozzles	Automatic
2) East Cable Tunnel	Ionization Device	Fusible Link Sprinklers/ Frangible Element Nozzles	Automatic
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	Ionization Device	Fusible Link Sprinklers	Automatic
9) Battery Room Corridor	Ionization Device	Fusible Link Sprinklers	Automatic

Notes for Table 3.12.1

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

JAFNPP

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 ⁽¹⁾	N/A	Once/1.5 Years	N/A
2) East Cable Tunnel	Once/6 Months ⁽¹⁾	N/A	Once/1.5 Years	N/A
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	N/A	Once/1.5 Years	N/A
9) Battery Room Corridor	Once/6 Months ⁽¹⁾	N/A	Once/1.5 Years	N/A

Notes for Table 4.12.1

1. These are wet pipe systems which contain flow alarm check valves. The surveillance for flow alarm check valves is performed by providing sufficient flow through the valve to activate the alarm. Full valve cycling is not required.



UNITED STATES
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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)

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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:

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