March 20, 1987

Docket No. 50-333

Mr. John C. Brons
Senior Vice President -
Nuclear Generation
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Brons:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications in response to your application dated December 31, 1986.

The amendment changes the Technical Specifications to support plant operation with the recently installed second-level undervoltage protection system.

A copy of the Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Original signed by

Harvey I. Abelson, Project Manager
BWR Project Directorate #2
Division of BWR Licensing

Enclosures:
1. Amendment No. to
License No. DPR-59
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. John C. Brons
Power Authority of the State of New York
James A. FitzPatrick Nuclear
Power Plant

cc:
Mr. Charles M. Pratt
Assistant General Counsel
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

Mr. Jay Dunkleberger
Division of Policy Analysis
and Planning
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

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

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Mr. Radford J. Converse
Resident Manager
James A. FitzPatrick Nuclear
Power Plant
Post Office Box 41
Lycoming, New York 13093

Mr. A. Klausman
Vice President - Quality Assurance
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

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

Mr. George Wilverding, Chairman
Safety Review Committee
Power Authority of the State
of New York
123 Main Street
White Plains, New York 10601

Mr. Robert P. Jones, Supervisor
Town of Scriba
R. D. #4
Oswego, New York 13126

Mr. Leroy W. Sinclair
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

Mr. M. C. Cosgrove
Quality Assurance Superintendent
James A. FitzPatrick Nuclear
Power Plant
Post Office Box 41
Lycoming, New York 13093

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

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. 106
License No. DPR-59

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Power Authority of the State of New York (the licensee) dated December 31, 1986, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 106 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 20, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 106

FACILITY OPERATING LICENSE NO DPR-59

DOCKET NO. 50-333

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Pages

54
60
70c
71
79

3.2 (cont'd)

E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.

F. Surveillance Information Readouts

The limiting conditions for the instrumentation that provide(s) surveillance information readouts are given in Table 3.2-6.

G. Recirculation Pump Trip

The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.

H. 4 kv Emergency Bus Undervoltage Trip

The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.

4.2 (cont'd)

E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2-5

F. Surveillance Information Readouts

Instrumentation shall be calibrated and checked as indicated in Table 4.2-6

G. Recirculation Pump Trip

Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7.

System logic shall be functionally tested as indicated in Table 4.2-7.

3.2 BASES (cont'd)

The recirculation pump trip has been added at the suggestion of ACRS as a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events given in General Electric Company Topical Report, NEDO-10349, dated March, 1971.

The Emergency Bus Undervoltage Trip System transfers the 4 kV emergency electrical buses to the Emergency Diesel Generators in the event an undervoltage condition is detected. The system has two levels of protection: (1) degraded voltage protection, and (2) loss-of-voltage protection. Degraded voltage protection prevents a sustained low voltage condition from damaging safety-related equipment. The loss-of-voltage protection prevents a more severe voltage drop from causing a long term interruption of power. Time delays are included in the system to prevent inadvertent transfers due to spurious voltage decreases. Therefore, both the duration and severity of the voltage drop are sensed by the Emergency Bus Undervoltage Trip System.

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TABLE 3.2-2 (cont'd)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
37	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Relay (Degraded Voltage)	108 ± 1.5 secondary volts	2 Inst. Channels	1. Initiates 4kV Emergency Bus Undervoltage Degraded Voltage Timer. 2. Notes 4 and 6.
38	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage)	9.0 ± 1.0 sec.	2 Inst. Channels	1. Note 5.
39	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Relay (Loss of Voltage)	85 ± 4.25 secondary volts	2 Inst. Channels	1. Initiates 4kV Emergency Bus Undervoltage Loss of Voltage Timer. 2. Notes 4 and 7.
40	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Timer (Loss of Voltage)	2.50 ± 0.05 sec.	2 Inst. Channels	1. Note 5.
41	2	Reactor Low Pressure	285 to 335 psig	4 Inst. Channels	Permissive for closing recirculation pump discharge valve.

TABLE 3.2-2 (Cont'd)
INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

NOTES FOR TABLE 3.2-2

1. Whenever any ECCS subsystem is required by specification 3.5 to be operable, there shall be two operable trip systems. From and after the time it is found that the first column cannot be met for one of the trip systems, that trip system shall be placed in the tripped condition or the reactor shall be placed in the cold condition within 24 hours.

2. "Deleted"

3. Refer to Technical Specification 3.5.A for limiting conditions for operation, failure of one (1) instrument channel disables one (1) pump.

4. Tripping of 2 out of 2 sensors is required for an undervoltage trip. With one operable sensor, operation may continue with the inoperable sensor in the tripped condition.

5. The 4kV Emergency Bus Undervoltage Timers (degraded voltage and loss-of-voltage) initiate the following: initiates the start of the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker closes permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

6. A secondary voltage of 108 volts corresponds to approximately 90.8% of 4160 volts on the bus.

7. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

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TABLE 4.2-2

MINIMUM TEST AND CALIBRATION FREQUENCY FOR CORE AND CONTAINMENT COOLING SYSTEMS

	Instrument Channel	Instrument Functional Test	Calibration Frequency	Instrument Check(4)
1)	Reactor Water Level	(1)(5)	(15)	Once/day
2a)	Drywell Pressure (non-ATTS)	(1)	Once/3 months	None
2b)	Drywell Pressure (ATTS)	(1)(5)	(15)	Once/day
3a)	Reactor Pressure (non-ATTS)	(1)	Once/3 months	None
3b)	Reactor Pressure (ATTS)	(1)(5)	(15)	Once/day
4)	Auto Sequencing Timers	None	Once/operating cycle	None
5)	ADS - LPCI or CS Pump Disch.	(1)	Once/3 months	None
6)	Trip System Bus Power Monitors	(1)	None	None
8)	Core Spray Sparger d/p	(1)	Once/3 months	Once/day
9)	Steam Line High Flow (HPCI & RCIC)	(1)(5)	(15)	Once/day
10)	Steam Line/Area High Temp. (HPCI & RCIC)	(1)(5)	(15)	Once/day
12)	HPCI & RCIC Steam Line Low Pressure	(1)(5)	(15)	Once/day
13)	HPCI & RCIC Suction Source Levels	(1)	Once/3 months	None
14a)	4KV Emergency Bus Under-Voltage (Loss-of-Voltage) Relays and Timers	Once/operating cycle	Once/operating cycle	None
14b)	4KV Emergency Bus Under-Voltage (Degraded Voltage) Relays and Timers	Once/operating cycle	Once/operating cycle	None
15)	HPCI & RCIC Exhaust Diaphragm Pressure High	(1)	Once/3 months	None
17)	LPCI/Cross Connect Valve Position	Once/operating cycle	None	None

NOTE: See listing of notes following Table 4.2-6 for the notes referred to herein.

Amendment No. ~~14~~, ~~43~~, ~~53~~, ~~89~~, 106

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 106 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

The staff, by letter dated June 3, 1977, required the Power Authority State of New York (the licensee): (a) to assess the susceptibility of the safety-related electrical system at the James A. FitzPatrick Nuclear Power Plant to sustained voltage degradation of the offsite power sources and (b) to either propose design modifications to meet the requirements of the staff position on adequacy of station electric distribution system voltage (Branch Technical Position PSB-1, Appendix 8-A, NUREG-0800) or to demonstrate that the existing electrical system design is capable of withstanding sustained voltage degradation of the offsite power sources.

The licensee, by letter dated October 17, 1977, proposed design modifications and associated changes to the Technical Specifications (TS) to meet the requirements of the staff position. These modifications comprised installation of a second-level undervoltage protection system for the safety-related equipment.

The staff, by letter dated September 14, 1984 approved the proposed modifications. The staff also requested that the licensee update and resubmit the TS proposed in the October 17, 1977 letter. By letter dated December 31, 1986, the licensee submitted revised TS to support operation with the installed modifications. These TS included setpoints, allowable limits, and test and surveillance requirements.

2.0 EVALUATION

The modifications include the installation of two undervoltage relays and timers for each of the two 4160 volt safety buses. The undervoltage relays have a setpoint of 108 ± 1.5 volts (90.8% of bus voltage) and the timers have a setpoint of 9.0 ± 1.0 seconds. The undervoltage relay with its associated timer is configured in a two-out-of-two coincidence logic per bus. When an undervoltage condition persists below 90.8% of bus voltage for 10 seconds, the diesel-generator is started. When the diesel-generator reaches 75% of rated voltage, the offsite power sources and 4kV motor loads are disconnected. When the diesel generator reaches 90% of rated voltage, it is connected to the bus. If there is an accident signal, the 4kV motor loads will be automatically reconnected, in sequence, to the bus.

We have reviewed the TS submitted in support of the previously approved modifications for second-level undervoltage protection. On the basis of this review, we find that the proposed TS reflect the above, acceptable, system characteristics and meet the requirements of the staff position on adequacy of station electric distribution system voltage. In addition, the proposed TS adequately address testing of undervoltage protection system and meet the guidelines of the GE Standard Technical Specifications (BWR/4) for degraded voltage. We therefore, find the proposed TS to be acceptable.

3.0 ENVIRONMENTAL CONSIDERATIONS

This 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. The 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 findings. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 0 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.

4.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: J. Knox

Dated: March 20, 1987