

May 18, 1990

Docket No. 50-333

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

Dear Mr. Brons:

SUBJECT: ISSUANCE OF AMENDMENT FOR FITZPATRICK (TAC NO. 75875)

The Commission has issued the enclosed Amendment No.160 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 transmitted by letter dated January 12, 1990.

The amendment changes the setpoints of the 4KV emergency bus undervoltage relays used for degraded voltage conditions to reflect changes to the reserve station transformer tap settings which are being made during the current refueling outage. The amendment also removes operating restrictions imposed by the NRC in Amendment No. 120, which was issued on November 19, 1988.

As indicated in the supporting Safety Evaluation, the potential design weakness related to conducting reliable manual bus transfers between onsite and offsite power supplies is a longer term issue. This issue is being pursued by the staff independent of this action.

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

Sincerely,

ORIGINAL SIGNED BY:

*for* *Daniel E. McDonald*

David E. LaBarge, Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

**Enclosures:**

1. Amendment No.160 to DPR-59
2. Safety Evaluation

cc: w/enclosures  
See next page

DF01

DFC	:LA:PDI-1	:PM:PDI-1	:OGC	:D:PDI-1		
NAME	:CVogan (1)	:DLaBarge	:5-17-90	:RCapra		1/1
DATE	:5/16/90	:for 5/16/90	:w/changes	:5/18/90		

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Power Plant

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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. 160  
License No. DPR-59

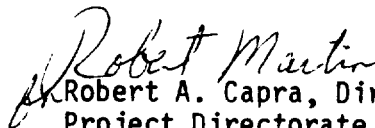
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Power Authority of the State of New York (the licensee) dated January 12, 1990, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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. 160, 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: May 18, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 160

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages

60  
70c  
71  
79

Insert Pages

60  
70c  
71  
79

## 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.

Accident monitoring instrumentation provides additional information which is helpful to the operator in assessing plant conditions following an accident by (1) providing information needed to permit the operators to take preplanned manual actions to accomplish safe plant shutdown; (2) determining whether systems are performing their intended functions; (3) providing information to the operators that will enable them to determine the potential for a breach of the barrier to radioactivity release and if a barrier has been breached; (4) furnishing data for deciding on the need to take unplanned action if an automatic or manually initiated safety system is not functioning properly or the plant is not responding properly to the safety systems in operation; and (5) allowing for early indication of the need to initiate action necessary to protect the public and for an estimate of the magnitude of any problem. This instrumentation has been upgraded to conform with the acceptance criteria of NUREG-0737 and NRC Generic Letter 83-36.

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 degraded voltage protection has two time delays. A short time delay coincident with a loss-of-coolant accident (LOCA) and a longer time delay to allow normal plant evolutions without unnecessarily starting the Emergency Diesel Generators. 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.

**JAFNPP**

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)	110.6 $\pm$ 1.2 secondary volts	2 Inst. Channels	1. Initiates both 4kV Emergency Bus Undervoltage Timers. (Degraded Voltage LOCA and non-LOCA) 2. Notes 4 and 6.
38a	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage LOCA)	9.0 $\pm$ 1.0 sec.	2 Inst. Channels	1. Note 5.
38b	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage non-LOCA)	45 $\pm$ 5.0 sec.	2 Inst. Channels	1. Note 5.
39	(1 per 4kV bus)	4kV Emergency Bus Undervoltage Relay (Loss of Voltage)	85 $\pm$ 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 $\pm$ 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.

**JAFNPP**

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 LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts 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 close 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 110.6 volts corresponds to approximately 93% of 4160 volts on the bus.
7. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.



**JAFNPP**

TABLE 4.2-2

**MINIMUM TEST AND CALIBRATION FREQUENCY FOR CORE AND CONTAINMENT COOLING SYSTEMS**

Instrument Channel (8)		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
14)	4kV Emergency Bus Under-Voltage (Loss-of-Voltage, Degraded Voltage LOCA and non-LOCA) 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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 160 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 Power Authority of the State of New York (PASNY or the licensee) on January 20, 1990, proposed by letter, to change an undervoltage relay setting in Table 3.2-2 of the James A. Fitzpatrick Technical Specification (TS). The item of concern in Table 3.2-2 is item no. 37, which is the 4kv Emergency Bus Undervoltage Relays (Degraded Voltage).

PASNY is proposing to change the setting on the Degraded Voltage undervoltage relays (UVR) on the 4kv Emergency Buses because the reserve station transformer tap settings are being changed during the current refueling outage which results in a need to modify the UVR setpoints. In addition, PASNY requests the removal of the operating restriction imposed by the NRC in Amendment No. 120 which was issued on November 18, 1988.

2.0 EVALUATION:

The licensee proposed to change the present degraded voltage trip setting of  $108 \pm 1.5v$  (item 37) to  $110.6 \pm 1.5V$ . The proposed UVR trip setting change is acceptable to the staff because, as a result, the degraded voltage on the 600V buses: 11500, 11600, 12500, and 12600 will remain well above the minimum  $(0.90 \times 575) = 517$  volts for 575 volt motors, when the Preferred Power Supply (PPS) minimum voltage to Reserve Station Transformers (RSST) T2 and T3 is above  $27.9 \times 35 \times 110.6 = 108kV$  as both the FSAR, section 8.6.6.b, and the licensee's latest proposal indicates it will. The trip setting change is necessary because the change in the RSST taps from 119kV to 116kV will increase the 4160 bus voltage by  $119/116 = 1.03$  pu. In order to restore the 600V bus voltage to the present range, the Load Center Transformer's tap setting of 3950V was changed to 4050V. Thus,  $(119/116)(3950/4050) = 1.00$ , and in order for the UVR to respond to the same voltage on 4160 buses, Nos. 10500 and 10600, the UVR must change in the same ratio:  $(119/116)(108/110.6) = 1.00$ . Therefore, the proposed Degraded Voltage UVR setpoints are appropriate.

The licensee also requested the removal of the operating restrictions imposed by Amendment No. 120 indicating that the technical issues associated with the undervoltage protection system have been resolved. In raising the bus voltage 3% with the transformer tap changes, the licensee has corrected the deficiencies related to the Degraded Grid UVR protection system, therefore; the operating restrictions imposed by Amendment No. 20 are no longer necessary.

However, in the Safety Evaluation supporting Amendment No. 120 to Facility Operating License No. DPR-59 for JAFNPP, the NRC staff indicated it believes that there are potential design weaknesses related to conducting reliable manual bus transfers between onsite and offsite power supplies. This longer term issue is being pursued by the staff and licensee independent of this amendment request.

### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusive set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement of environmental assessment need be prepared in connection with the issuance of this amendment.

### 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: May 18, 1990

### PRINCIPAL CONTRIBUTOR:

C. Morris