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Docket No. 50-333

NOV 22 1978

Mr. George T. Berry  
General Manager and Chief  
Engineer  
Power Authority of the State  
of New York  
10 Columbus Circle  
New York, New York 10019

Dear Mr. Berry:

The Commission has issued the enclosed Amendment No. 42 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 partial response to your application submitted by letter dated August 10, 1978.

This amendment revises the Technical Specifications to reflect the installation of the Analog Transmitter/Trip Unit System (ATTUS). Prior to your application the staff had reviewed and approved the General Electric Topical Reports NEDO-21617 and NEDO-21617-1, "Analog Transmitter/Trip Unit System." Therefore, our present review covered those site specific design areas as related to the FitzPatrick installation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by

Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors

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Enclosures:

1. Amendment No. 42 to License No. DPR-59
2. Safety Evaluation
3. Notice

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cc w/enclosures. See next page

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

November 22, 1978

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Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

*Thomas A. Ippolito*  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors

Enclosures:

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2. Safety Evaluation
3. Notice

cc w/enclosures: See next page

7812080168

Power Authority of the State  
of New York

- 2 -

November 22, 1978

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Agency  
Region II Office  
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26 Federal Plaza  
New York, New York 10007



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. 42  
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 August 10, 1978, 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- is hereby amended to read as follows:

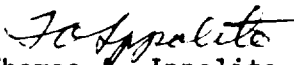
(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 42, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 22, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 42

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 pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove

44  
46

Replace

44  
46

TABLE 9.1

**REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT FUNCTIONAL TESTS**  
**MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENT AND CONTROL CIRCUITS**

	Group (2)	Functional Test	Minimum Frequency (3)
Mode Switch in Shutdown	A	Place Mode Switch in Shutdown.	Lack refueling outage.
Manual Scram	A	Trip Channel and Alarm	Every 3 months.
RPS Channel Test Switch	A	Trip Channel and Alarm	Every refueling outage or after channel maintenance.
IRRI			
High Flux	C	Trip Channel and Alarm (4)	Once per week during refueling or startup and before each startup.
Inoperative	C	Trip Channel and Alarm (4)	Once per week during refueling or startup and before each startup.
APRM			
High Flux	B	Trip Output Relays (4)	Once/week.
Inoperative	B	Trip Output Relays (4)	Once/week.
Downscale	B	Trip Output Relays (4)	Once/week.
Flow Bias	B	Calibrate Flow Bias Signal (4)	Once/month. (1)
High Flux in Startup or Refuel	C	Trip Output Relays (4)	Once per week during refueling or startup and before each startup.
High Reactor Pressure	B	Trip Channel and Alarm (4)	Once/month. (1) (Instrument Check once per day)
High Drywell Pressure	A	Trip Channel and Alarm	Once/month. (1)
Reactor Low Water Level (5)	A	Trip Channel and Alarm	Once/month. (1)
High Water Level in Scram Discharge Tank	A	Trip Channel and Alarm	Every 3 months.
Main Steam Line High Radiation	B	Trip Channel and Alarm (4)	Once/week.
Main Steam Line Isolation Valve Closure	A	Trip Channel and Alarm	Once/month. (1)
Turbine Control Valve EHC Oil Pressure	A	Trip Channel and Alarm	Once/month.
Turbine First Stage Pressure Permissive	A	Trip Channel and Alarm	Every 3 months. (1)
Turbine Stop Valve Closure	A	Trip Channel and Alarm	Once/month. (1)

# REACTOR PROTECTION SYSTEM (RPS) INSTRUMENT CALIBRATION MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

TABLE 1.1-2

DATE

Instrument Channel	Group (1)	Calibration (2)	Minimum Frequency (3)
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ARM High Flux	C	Comparison to ARM on Controlled shutdowns	Maximum frequency once/ week
---------------	---	--	---------------------------------

ARM High Flux  
Output Signal  
Flow when signal

B	Heat balance Internal power and flow Test with standard pressure Source	Daily Every refueling outage
---	--	---------------------------------

B	TR System Traverse	Every 6 weeks
---	--------------------	---------------

B	Standard Pressure Source	Once/Operating cycle
---	--------------------------	----------------------

A	Standard Pressure Source	Every 3 months
---	--------------------------	----------------

A	Pressure Standard	Every 3 months
---	-------------------	----------------

A	Note (5)	Note (5)
---	----------	----------

B	Standard Current Source	Every 3 months
---	-------------------------	----------------

A	Standard Pressure Source	Every 6 months
---	--------------------------	----------------

A	Standard Pressure Source	Once/oper. ing cycle
---	--------------------------	-------------------------

A	Note (5)	Note (5)
---	----------	----------

A	Standard Pressure Source	Every 6 months
---	--------------------------	----------------

ARM High Flux  
Output Signal  
Flow when signal  
APM Signal  
High Reactor Pressure  
High Drywell Pressure  
Reactor Low Water Level  
High Water Level in Scram Discharge  
Volume  
Main Steam Line Isolation Valve  
Closure  
Main Steam Line High Radiation  
Turbine First Stage Pressure  
Permissive  
Turbine Control Valve Fast Closure  
Oil Pressure Trip  
Turbine Stop Valve Closure  
Reactor Pressure Permissive

NOTES FOR TABLE 1.1-2

1. A description of three groups is included in the header of this Specification.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 42 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

By letter dated August 10, 1978, the Power Authority of the State of New York (licensee) proposed changes to the Technical Specifications appended to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The proposed changes make certain modifications to the reactor protection system. These modifications involve installing a new design improvement for safety system instrumentation for General Electric Company boiling water reactors in the reactor protection system. This new design of safety system instrumentation is referred to by the supplier (General Electric Company) as the Analog Transmitter Trip Unit System (ATTUS). This system is being supplied as original equipment in the GE/BWR 6 and has been made available to BWR 4 owners as a backfit. GE developed ATTUS to off-set operating disadvantages of the direct pressure and differential pressure actuated switches of the original safety system instrumentation.

The new analog transmitter/trip unit system is comprised of an analog transmitter and trip unit/calibration system (Model 510DU). GE presented ATTUS to the NRC staff for licensing under topical report NEDO-21617 of April 1977 and NEDO-21617-1 of January 1978. The staff reviewed and found acceptable ATTUS in its letter to GE dated June 27, 1978..

The staff in its approval of ATTUS required from those licensees who are backfitting their nuclear units, certain plant specific information in order to interface the review with the staff's review of the topical report on the subject. The particular information required of the licensees' is the environmental qualification and the divisional separation of the hardware installed for the plant backfit.

EVALUATION

GE identified in its topical report (NEDO-21617) hardware application for reactor vessel pressure that provides inputs to the reactor protection system as the backfit to the FitzPatrick plant. The equipment components to be used at the FitzPatrick plant include four analog transmitters (Rosemount Model 1151) and the trip unit/calibration system (Rosemount Model 510DU). This new equipment is located in the reactor building. The trip unit/calibration system is qualified for maximum environmental abnormal exposure test conditions of 171°F, 99% humidity, 7 in. w.g. atmos. and  $1.9 \times 10^5$  R radiation exposure. The transmitters are qualified to

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test conditions of 303°F, steam humidity, 60 psig pressure and  $5 \times 10^6$ R radiation exposure. The transmitters and trip unit/calibration systems are to be located in the reactor building where temperature is maintained at approximately 75°F by the ventilation system. The radiation level in the area is between 1 to 3 millirem per hour. Typical maximum credible accident conditions for the reactor building of Mark I containment are 130°F, 80-100% humidity and 2 psig. No credit is taken for post accident monitoring for this instrumentation. We find the environmental qualifications for this equipment to be acceptable.

The seismic tests for electrical components were conducted according to IEEE-344-1975 to acceleration levels in excess of the magnitudes expected at the hardware mounting locations. The three axes were tested independently at low g levels for dwell times of 30 to 35 seconds to determine if the hardware had any resonances. Since no resonant frequencies were found, all testing was performed at 33 Hz. Seismic testing of components was reviewed and found acceptable under the topical report NEDO-21617.

The licensee has documented that the new transmitters will replace in the same location the original reactor vessel pressure sensors. The trip unit/calibration systems will be mounted in four separate existing cabinets in the reactor building. The original separation criteria is satisfied. The licensee has documented that divisional separation for all wiring for the four reactor vessel pressure subchannels is in accordance with IEEE Standard 279 (1971). The arrangement of cables and raceways is designed to preserve the independence of redundant reactor protection system. The criteria for all areas of the plant require that a minimum horizontal distance of 3 feet or a minimum vertical distance of 7 feet will be maintained between cable trays, conduits, and armor cables which carry redundant circuits. Redundant cables are run in separate cable trays or conduits which are physically separated and follow different routes to and from power sources to loads and from sensors to protective devices. We find this acceptable.

The proposed equipment modifications required the following minor changes be made to Technical Specifications (T.S.) tables 4.1-1 and 4.1-2.

1. The group identification for high reactor pressure was changed from on-off sensors to analog devices in both tables.
2. Minimum calibration frequency for high reactor pressure was changed from 3 months to once/operating cycle in table 4.1-2.
3. Instrument check once per day was added in parenthesis to functional test frequency for high reactor pressure in table 4.1-1. We find these changes acceptable.

Based on our review of the licensee's submittals, we find the proposed modifications to the reactor protection system satisfy the requirements for environmental/seismic qualification and divisional separation; and are, therefore, acceptable. We also find that changes to T.S. tables 4.1-1 and 4.1-2 are acceptable.

#### ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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: November 22, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-333POWER AUTHORITY OF THE STATE OF NEW YORKNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 42 to Facility Operating License No. DPR-59, issued to Power Authority of the State of New York (the licensee), which revised Technical Specifications for operation of the James A. FitzPatrick Nuclear Power Plant (the facility) located in Oswego County, New York. The amendment is effective as of its date of issuance.

This amendment revises the Technical Specifications to reflect the installation of the Analog Transmitter/Trip Unit System (ATTUS).

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

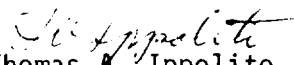
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For further details with respect to this action, see (1) the application for amendment dated August 10, 1978, (2) Amendment No. 42 to License No. DPR-59, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Oswego County Office Building, 46 East Bridge Street, Oswego, New York. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 22nd day of November 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas A. Ippolito, Chief  
Operating Reactors Branch #3  
Division of Operating Reactors