123 M Street
White Plains, New York 10601
914 681 6846

NewYork Power Authority

Ralph E. Beedle
Executive Vice President
Nuclear Generation

September 17, 1992
JPN-92-050

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: **James A. FitzPatrick Nuclear Power Plant**
Docket No. 50-333
Response to Request for Additional Information Regarding
Proposed Technical Specification Change for Power Uprate

REFERENCES:
1. NRC letter, B. C. McCabe to R. E. Beedle dated July 13, 1992, "Request for Additional Information - Power Uprate Submittal for the James A. FitzPatrick Nuclear Power Plant (TAC No. M83182)."
2. GE Nuclear Energy document number NEDC-32016P, dated December 1991, "Power Uprate Safety Analysis for the James A. FitzPatrick Nuclear Power Plant."
3. NYPA letter, R. E. Beedle to NRC dated June 12, 1992, "Proposed Changes to the Technical Specifications Regarding Power Uprate (JPTS-91-025)."

Dear Sir:

The Authority's response to the four questions included Reference 1 can be found in Attachment I. The questions concern the Authority's proposed FitzPatrick Technical Specification change to increase the authorized maximum power level to 2536 megawatts thermal (MW_t) from the current limit of 2436 MW_t.

Attachment II contains proposed changes to Reference 2, FitzPatrick Plant Power Uprate Safety Analysis, and supplements the Authority's response to question 3A. The changes clarify the FitzPatrick uprate power/flow map by incorporating a higher flow control line to achieve the uprate condition. The Authority will revise and resubmit Reference 3 to incorporate the changes in Attachment II.

A001

If you have any questions, please contact J. A. Gray, Jr.

Very truly yours,

Ralph E. Beedle
Executive Vice President
Nuclear Generation

Enclosures (3)

cc: Regional Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Office of the Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, NY 13093

Mr. Brian C. McCabe
Project Directorate I-1
Division of Reactor Projects - I/II
U.S. Nuclear Regulatory Commission
Mail Stop 14 B2
Washington, DC 20555

ATTACHMENT I TO JPN-92-050

REQUEST FOR ADDITIONAL INFORMATION
FITZPATRICK POWER UPRATE

This attachment responds to the NRC's request for additional information (NRC letter B. C. McCabe to R. E. Beedle, dated July 13, 1992, TAC No. M83182) concerning the Authority's application for an amendment to the James A. FitzPatrick Technical Specifications. This application proposes to increase the authorized maximum power level to 2536 megawatts thermal (MW_t) from the current limit of 2436 MW_t. The NRC questions are followed by the Authority's reply.

NRC Question No. 1

The NRC staff is concerned that the use of Reactor Power vice the true measured variable (Turbine First Stage Pressure) in the technical specifications challenges the requirements of Section 4.8, "Derivation of System Inputs" of IEEE-Std-279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations." Therefore, provide a copy of calculation JAF 91-002, Revision 1, "Turbine First Stage Pressure Scram Bypass Setpoint (Uprated Condition)," so that the staff may complete our evaluation of the feasibility and practicality of using reactor power in the technical specifications for Turbine Trip Bypass.

NYPA Response Question No. 1

The Authority has enclosed a copy of calculations JAF-CALC-RPS-00233, "05PT-14A, B, C, D Turbine 1st Stage Low Pressure RPS" and JAF-91-002, "Turbine 1st Stage Pressure Scram Bypass Setpoint."

NRC Question No. 2

Describe the extent to which NEDC-31336, "Instrument Setpoint Methodology," was used to select and/or verify setpoints for the proposed power uprate.

NYPA Response Question No. 2

Paragraph 5.8 of Reference A, "Generic Guidelines for General Electric Boiling Water Reactor Uprate," states the following:

> A detailed review of the control and instrumentation signal ranges and setpoints is made to evaluate and make modifications, if necessary, for changes in various parameters such as indicated power, system pressure, neutron flux, and steam and feedwater flow signals. The GE generic setpoint methodology or an equivalent plant unique alternative is still applicable for uprate.

The Authority generally does not use the GE generic setpoint methodology for instrument loop and setpoint calculations. Rather, calculations are performed using the methods and techniques endorsed by the Instrument Society of America (ISA) practice ISA-RP 67.04, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation," and outlined in the Authority's Engineering Standards Manual procedure IES-3, "Instrument Loop Accuracy and Setpoint Calculations." Enclosed for your review is copy of NYPA's Engineering Standards Manual procedure IES-3.

ATTACHMENT I TO JPN-92-050

REQUEST FOR ADDITIONAL INFORMATION
FITZPATRICK POWER UPRATE

NRC Question No. 3

The NRC staff is in the process of reviewing three different BWR power uprate requests. In each case, higher power is to be achieved by extending the power/flow map and increasing core flow along existing flow control lines. Given the same method for increasing power, the staff does not understand why your approach to changing setpoints is directly opposed to the approach taken by the other two plants with regard to the Neutron Monitoring System and Main Steam High Flow Isolation. Therefore:

A. Since the uprated absolute power level for any rod line remains the same for the same flow, justify not changing the power offset for the flow-biased APRM rod block and simulated thermal power setpoints to maintain the same spacing above the rescaled maximum flow control rod line.

B. Provide the calculations used to determine that the existing Main Steam Line High Flow Isolation trip setpoint would have adequate margin to the new 100% steam flow operating point.

NYPA Response Question 3A

No request for a change to the APRM flow biased scram and rod block setpoints was made in Reference B, "Power Uprate Safety Analysis for the James A. FitzPatrick Nuclear Power Plant," because analysis demonstrates that operation on a higher flow control line is acceptable. This analysis will be incorporated at FitzPatrick instead of increasing core flow along existing flow control lines to extend the power/flow map. Section F.4.2(a) of Reference A, Licensing Topical Report, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," states the APRM trip and alarm setpoints will remain unchanged for reactors incorporating a higher flow control line to achieve the uprated condition.

Figure C-1 of Reference A provides two power/flow map examples for uprate to 105%; (1) Plants having an Extended Load Line Limit (ELLL) Analysis, and (2) Plants with Maximum Extended Operating Domain (MEOD) analysis. Example 1, representing an ELLL plant is the closest example to the FitzPatrick power/flow map. For an ELLL plant, it is acceptable to raise the allowable power/flow curve for power uprate which eliminates the need to change APRM flow biased scram and rod block setpoints.

The power/flow map used for the FitzPatrick power uprate report, Figure 2-1 of Reference B, had not been revised to reflect the higher flow control line incorporated in the generic ELLL plant power/flow map analysis. Consequently, the operating region bounded by points E and F as discussed in Figure C-1 of Reference A was omitted. This was due to the fact that the analyses performed for JAF power uprate started prior to the development of Reference A.

Attachment II contains the proposed amendment to Power Uprate Safety Analysis for the James A. FitzPatrick Nuclear Power Plant revising the power/flow map and associated text be consistent with the ELLL plant analyses contained Reference A.

REQUEST FOR ADDITIONAL INFORMATION
FITZPATRICK POWER UPRATE

NYPA Response Question 3B

The Authority has enclosed is a copy of NYPA calculation JAF-CALC-NBS-00224, "Setpoint Calculations to Extend Operating Cycle, System 002/ Nuclear Boiler (ADS), Main Steam Hi Flow PCIS," Rev. 0.

References

A. GE Nuclear Energy document number NEDC-31897P-1, dated June 1991, "Generic Guidelines for General Electric Boiling Water Reactor Uprate."

B. GE Nuclear Energy document number NEDC-32016P, dated December 1991, "Power Uprate Safety Analysis for the James A. FitzPatrick Nuclear Power Plant."

ATTACHMENT II TO JPN-92-050

REQUEST FOR ADDITIONAL INFORMATION
FITZPATRICK POWER UPRATE

PROPOSED CHANGES FOR NEDC-32016P

POWER UPRATE SAFETY ANALYSIS

FOR THE JAMES A. FITZPATRICK NUCLEAR POWER PLANT

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333