April 30, 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 (TAC NO. 75874)

The Commission has issued the enclosed Amendment No. 159 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 allows the main steamline high radiation monitor trip level setpoints to be increased during Operating Cycle 10. This would be necessary to facilitate a testing program to periodically add hydrogen to the reactor coolant to determine the effectiveness of the hydrogen as an inhibitor of intergranular stress corrosion cracking.

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,

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

Enclosures:
1. Amendment No. 159 to DPR-59
2. Safety Evaluation

cc: w/enclosures
See next page

| PDI-1 | PDI-1 | SRXB | EMEB | OGC | PDI-1 |
|---|---|---|---|---|---|
| CVogan | DLaBarge:rsc | RJones | LMarsh | RBachman | RACapra |
| 3/ /90 | 4/ 6 /90 | 4/9/90 | 3/ /90 | 4/12/90 | 4/30/90 |

DOCUMENT NAME: ISSUANCE OF AMENDMENT 75874

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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. 159
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. 159 , 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

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: April 30, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 159

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

| Remove Pages | Insert Pages |
|---|---|
| 43a | 43a |
| 65 | 65 |

TABLE 3.1-1 (cont´d)

## REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

NOTES OF TABLE 3.1-1 (cont´d)

14. The APRM flow biased high neutron flux signal is fed through a time constant circuit of approximately 6 seconds. The APRM fixed high neutron flux signal does not incorporate the time constant, but responds directly to instantaneous neutron flux.

15. This Average Power Range Monitor scram function is fixed point and is increased when the reactor mode switch is place in the Run position.

16. *During the proposed Hydrogen Addition Test, the background radiation level will increase by approximately a factor of 5 for peak hydrogen concentration. Therefore, within 24 hours prior to performance of the test, the Main Steam Line Radiation Monitor Trip Level Setpoint will be raised to $\leq$ three times the anticipated radiation levels. Upon completion of the Hydrogen Addition Test, the setpoint will be readjusted to its prior setting within 24 hours.

17. This APRM Flow Referenced Scram setting is applicable to two loop operation. For one loop operation this setting becomes $S \leq (0.66W+54\%-0.66\Delta W)(FRP/MFLPD)$

    Where:

    $\Delta W$ = Difference between two-loop and single-loop effective drive flow at the same core flow.

* This specification is in effect only during Operating Cycle 10.

TABLE 3.2-1 (Cont'd)

## INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

NOTES FOR TABLE 3.2-1

1. Whenever Primary Containment integrity is required by Section 3.7, there shall be two operable or tripped trip systems for each function.
2. 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 tripped or the appropriate action listed below shall be taken.

   A. Initiate an orderly shutdown and have the reactor in cold shutdown condition in 24 hours.

   B. Initiate an orderly load reduction and have main steam lines isolated within eight hours.

   C. Isolate Reactor Water Cleanup System.

   D. Isolate shutdown cooling.

3. Deleted
4. Deleted
5. Two required for each steam line.
6. These signals also start SBGTS and initiate secondary containment isolation.
7. Only required in run mode (interlocked with Mode Switch).
8. Bypassed when mode switch is not in run mode and turbine stop valves are closed.
9. The trip level setpoint will be maintained at $\leq$ 3 times normal rated full power background. See note 16 to Table 3.1-1 for re-setting trip level setpoint just prior to and following the Hydrogen Addition Test.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 159 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

## INTRODUCTION

By letter dated January 12, 1990, the Power Authority of the State of New York (PASNY or the licensee) submitted a proposed amendment requesting changes to the Technical Specifications (TS) for the James A. FitzPatrick Nuclear Power Plant. The amendment would revise Note 16 to Table 3.1-1, "Reactor Protection System (SCRAM) Instrumentation Requirement," and Note 9 to Table 3.2-1, "Instrumentation That Initiates Primary Containment Isolation." The proposed changes would allow the main steamline high radiation monitor trip level setpoint to be increased during Operating Cycle 10 to accommodate testing of the incore stress corrosion monitoring system. The proposed change would allow the setpoint to be temporarily changed from the present value (corresponding to three times the normal full power background radiation level) to a setpoint corresponding to three times the normal full power background radiation level which is expected to result from the injection of hydrogen for the corrosion monitor tests.

The corrosion monitor tests involve incremental increases of the hydrogen flow rate to the core using the hydrogen water chemistry system while monitoring certain specified parameters. These parameters will provide the basis for establishing the amount of hydrogen needed to suppress crack growth in material susceptible to intergranular stress corrosion cracking (IGSCC), an integral part of the licensee's IGSCC control and monitoring program. The addition of hydrogen reduces the concentration of oxygen in the coolant and increases the nitrogen-16 carryover in the steam. This results in higher background radiation levels detected by the main steamline radiation monitors (MSLRMs).

By letter dated May 16, 1985, the staff issued Amendment No. 90 which approved a similar change to the MSLRMs to allow hydrogen testing during Operating Cycle 7. The amendment was effective for that operating cycle only. This safety evaluation closely replicates the safety evaluation written for Amendment No. 90.

## EVALUATION

The MSLRMs are used to detect gross failure of fuel cladding during normal power operation that may be caused by any number of mechanisms (e.g., pellet-cladding mechanical interaction, manufacturing defects). When high radiation in the main steam lines reaches the setpoint of the radiation monitors, a

reactor trip is automatically initiated to reduce the possibility of additional failure of the fuel cladding and, at the same time, the main steamline isolation valves (MSIVs) automatically close to limit the release of fission products. The setpoints of the MSLRMs are set high enough above normal background radiation levels to prevent spurious trips and low enough to actuate in the event of significant fuel clad failure.

In the calculation of the radiological consequences of a control rod drop accident (CRDA), credit is taken for the MSLRMs to provide a signal to close the MSIVs upon detection of high radiation in the steam lines resulting from the design basis CRDA. The total time required to isolate the main steam lines, together with other assumptions, determines the amount of fission product activity transported to the condenser before the MSIVs are closed. The CRDA analysis, however, does not take credit for a reactor trip from the MSLRM in assuring that the fuel dispersal criteria is met.

For a CRDA occurring at power levels above 20 percent of rated power, there is a significant margin to the fuel cladding failure threshold. The CRDA becomes a concern only at power levels below 10 percent. The licensee has stated that the hydrogen addition test will only be conducted at power levels above 50 percent of rated power and that the MSLRM setpoints will be at their normal value before power level decreases below 20 percent. In addition, if due to a recirculation pump trip or other unanticipated power reduction event, the reactor power decreases to below 20 percent of rated power with the MSLRM setpoints at the test value, control rod withdrawal will be administratively prohibited until the necessary readjustments are made to the monitors to return them to their normal setpoints. Also, the licensee has committed that the setpoint changes will only be in effect during the period extending from 24 hours before the performance of the hydrogen injection test to 24 hours after completion of the test. Therefore, the setpoint changes will be in effect only when necessary and the changes will be closely controlled.

The capability for monitoring for fuel defects and failures will continue to be maintained with the present TS requirement associated with the main steam radiation scram and isolation monitor systems, routine radiation surveys, the performance of primary coolant water analysis, and the continued operability of the Steam Jet Air Ejector Radiation Monitors. Also, the licensee's existing quality assurance program, existing procedures, and special procedures or procedure changes used for the hydrogen testing, will minimize the potential for error associated with readjusting the MSLRM setpoints or excessive operation with the readjusted setpoints in effect.

SUMMARY

The licensee has committed to perform testing only above 50 percent of rated power, to increase the setpoint to its test value only when the plant is operating above 20 percent rated power, and to restore the setpoint to its pre-test value prior to reducing power below 20 percent of rated power. Also, the licensee has committed to implement the setpoint changes only when needed (starting no more than 24 hours before a test and continuing for no more than 24 hours after a test), and to prohibit control rod withdraw in the event of an uncontrolled power reduction below 20 percent of rated power when the

setpoint is at the test value. Based on the analysis, the licensee's continued capability to monitor for fuel defects and clad failures during the test, and the licensee's previous satisfactory experience with the testing program, the staff concludes that the proposed TS changes are acceptable.

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 exclusion set forth in 10 CFR Sec 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 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: April 30, 1990

PRINCIPAL CONTRIBUTOR:
D. LaBarge