

November 7, 1996

Mr. William J. Cahill, Jr.
Chief Nuclear Officer
Power Authority of the State
of New York
123 Main Street
White Plains, NY 10601

SUBJECT: ISSUANCE OF AMENDMENT FOR JAMES A. FITZPATRICK NUCLEAR POWER PLANT
(TAC NO. M95523)

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 237 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated May 30, 1996.

The proposed change to the anticipated transient without scram recirculation pump trip logic for the James A. Fitzpatrick Power Plant allows for a high pressure trip setpoint which is dependent upon the number of safety/relief valves which are out of service.

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

Sincerely,

/s/

K. R. Cotton, Acting Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures: 1. Amendment No. 237 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

DFOI 1/1

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DATED: November 7, 1996

AMENDMENT NO. 237 TO FACILITY OPERATING LICENSE NO. DPR-59-FITZPATRICK

Docket File

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 7, 1996

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Power Authority of the State
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123 Main Street
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SUBJECT: ISSUANCE OF AMENDMENT FOR JAMES A. FITZPATRICK NUCLEAR POWER PLANT
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A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, reading "Karen Cotton", is positioned above the typed name.

K. R. Cotton, Acting Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures: 1. Amendment No. 237 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

William J. Cahill, Jr.
Power Authority of the State
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Power Plant

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. ²³⁷
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 March 30, 1996, 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. 237, 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



S. Singh Bajwa, Acting 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: November 7, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 237

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages

76a

77

Insert Pages

76a

76b

76c

77

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TABLE 3.2-7

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

Minimum Number of Operable Instrument Channels Per Trip System (Notes 1 & 2)	Trip Function	Trip Level Setting	Applicable Modes
2	Reactor Pressure - High	≤ 1120 psig, or ≤ 1155 psig (Note 3)	Run
2	Reactor Water Level - Low Low	≥ 126.5 in. above TAF	Run

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TABLE 3.2-7 (cont'd)

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-7

1. There shall be two operable or tripped trip systems for each Trip Function, except as provided for below:
 - a. For each Trip Function with one less than the required minimum number of operable instrument channels, place the inoperable instrument channel and/or its associated trip system in the tripped condition* within 72 hours. Otherwise, place the reactor in the start-up/hot standby mode within the next 6 hours.
 - b. For each Trip Function with two or more channels less than the required minimum number of operable instrument channels:
 - 1) Within one hour, verify sufficient instrument channels remain operable or tripped* to maintain trip capability in the Trip Function, and
 - 2) Within 6 hours, place the inoperable instrument channel(s) in one trip system and/or that trip system** in the tripped condition*, and
 - 3) Within 24 hours, restore the inoperable instrument channel in the other trip system to an operable status.If any of these three conditions cannot be satisfied, place the reactor in the start-up/hot standby mode within the next 6 hours.
 - * An inoperable instrument channel or trip system need not be placed in the tripped condition where this would cause the Trip Function to occur. In these cases, if the inoperable instrument channel is not restored to operable status within the required time, place the reactor in the start-up/hot standby mode within the next 6 hours.
 - ** This action applies to that trip system with the greatest number of inoperable instrument channels. If both systems have the same number of inoperable instrument channels, the ACTION can be applied to either trip system.
2. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function maintains ATWS RPT initiation capability.

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TABLE 3.2-7 (cont'd)

ATWS RECIRCULATION PUMP TRIP INSTRUMENTATION REQUIREMENTS

NOTES FOR TABLE 3.2-7 (cont.)

3. The ATWS Reactor Pressure High Recirculation Pump Trip setpoint shall be ≤ 1155 psig when either zero or one SRVs are out of service. The setpoint shall be ≤ 1120 psig when two or more SRVs are out of service.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 237 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

By letter dated March 30, 1996, the Power Authority of the State of New York (the licensee or PASNY) submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant Technical Specifications (TSs). The change allows for a high pressure trip setpoint which is dependent upon the number of safety/relief valves (SRV) which are out of service. Currently, the trip setpoint is 1120 psi which was calculated assuming two SRVs out of service. The proposed setpoint is 1155 psi. At the time of the original analyses, a lower, seemingly conservative, setpoint was chosen. However, a lower setpoint tends to increase the number of unnecessary recirculation pump trips. Tripping of a recirculation pump, under most conditions, has the undesirable effect of causing cold water to stratify in the lower reactor vessel head. This stratification can cause a severe thermal transient (approaching or, in some cases, exceeding the temperature change rate of 100 °F/hr.) on the vessel. Tripping the pump is also a precursor to thermal hydraulic instability. The proposal by PASNY is an attempt to balance the need to trip the recirculation pumps in an anticipated transient without scram (ATWS) and the desire to avoid circumstances leading to undesirable lower plenum thermal stratification and thermal hydraulic instability.

2.0 EVALUATION

The NRC staff evaluation focused on making a determination about whether the ATWS calculations demonstrating that the high pressure setpoint can be increased are valid and acceptable. To this end, the NRC staff issued a request for additional information (RAI) about the supporting analyses performed by General Electric (GE) for PASNY to support the amendment request (Ref. 2).

The analyses were performed using the approved REDY code according to the procedures established in NUREG-0460. The analyses demonstrate that the peak pressure is 100 psi below the limit of 1500 psi with one SRV out of service using the proposed recirculation pump trip pressure setpoint. REDY analyses were also performed to show the effect of the one out of service SRV by

calculating the pressure rise assuming no SRV failures. This effect was confirmed by the staff using the RELAP5¹ code and was calculated to be 70 psi (see Figure 1).

The NRC staff evaluated the proposal to determine if it had any adverse effects on the plant. The RELAP5 audit calculations predict a 100 psi margin to the Reactor Pressure Vessel maximum pressure of 1500 psi and can be thought of as a measure of the conservatism which still remains in the proposed recirculation pump trip setpoint. As part of this effort, the staff also calculated the pressure rise with 2 SRV failures and a trip setpoint of 1120 psi (see Figure 1). These analyses re-confirm the validity of the original analyses and establish a baseline value for comparison. Furthermore, the modification will not effect the peak suppression pool temperature. As a final note, the staff examined the power response to the main steam isolation valve (MSIV) closure ATWS with the different recirculation pump trip setpoint and as one can see from Figure 2, the setpoint change has an insignificant effect on the peak power. The impact of the proposed change is, therefore, minimal because significant margin still remains.

Based upon the results of the NRC staff review, the staff has concluded that the proposal to increase the ATWS recirculation pump trip high pressure setpoint from 1120 psi to 1155 psi, assuming that only one SRV is out of service is acceptable. Specifically, the change to TS Table 3.2-7 incorporating the new setpoint is acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The 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 NRC 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 finding (61 FR 34896). Accordingly, the amendment

¹The code used was RELAP5 Mod 3.2 coupled to the NESTLE transient nodal code. The kinetics input simulated a 1-dimensional model of the core. See NUREG/CR-5535-V2

meets the eligibility criteria for categorical exclusion set forth in 10 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.

5.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Anthony Ulises

Date: November 7, 1996

REFERENCES

1. Letter from H. P. Salmon (PASNY) to USNRC, "Proposed Change to the Technical Specification Regarding ATWS Recirculation Pump Trip," May 30, 1996.
2. Letter from C. H. Stoll (GENE) to R. Penny (PASNY), "ATWS Analysis for Recirculation Pump Trip Setpoint Changes," May 23, 1996.

Figure 1 Demonstrates effect on peak pressure from assuming 1 out of service SRV. The difference in pressure is approximately 70 psi.

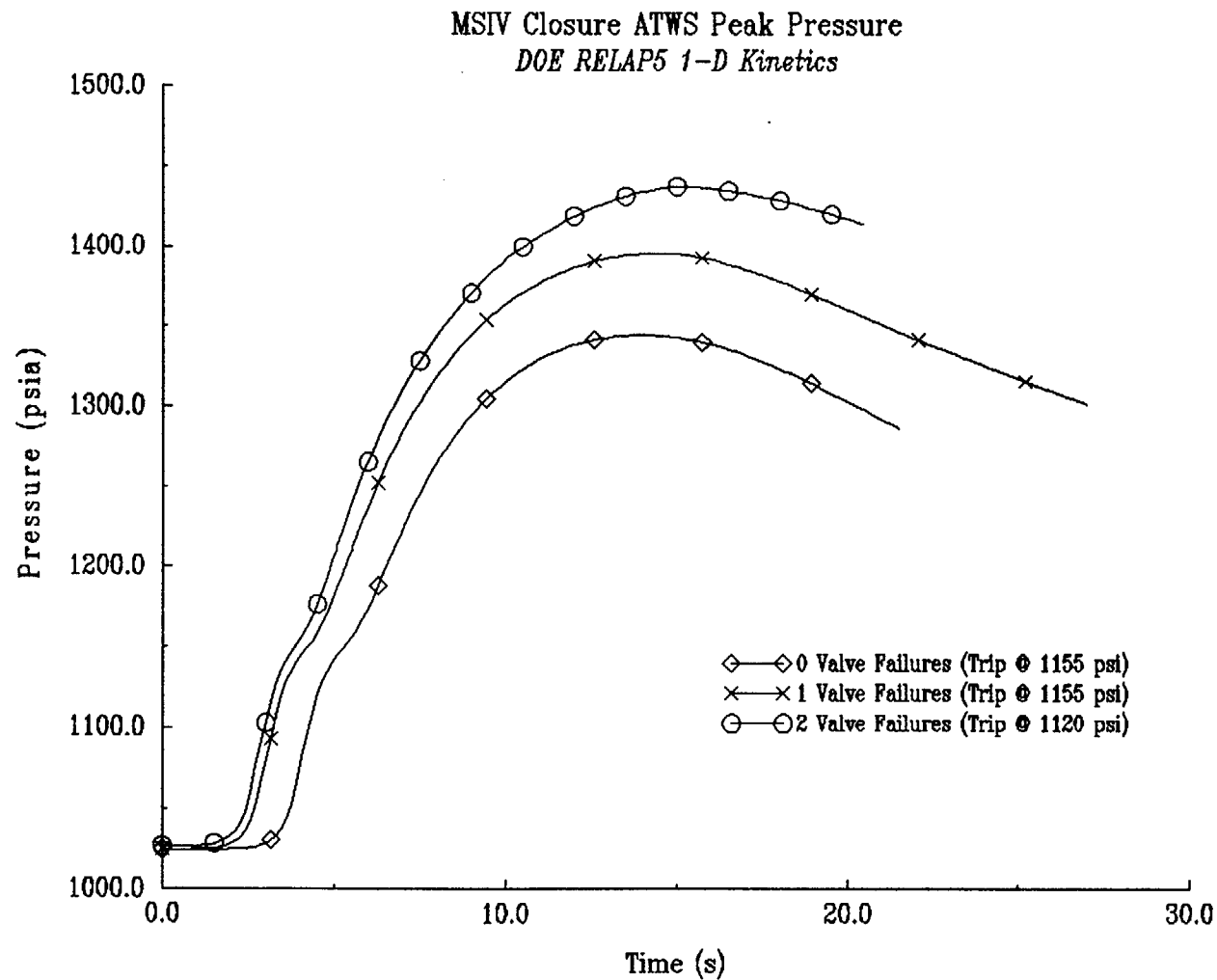


Figure 2 Note that the peak fission power is essentially unaffected by the change in the RCP trip setpoint.

