

October 10, 2000

Mr. James Knubel
Chief Nuclear Officer
Power Authority of the State of New York
123 Main Street
White Plains, NY 10601

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - AMENDMENT RE:
TECHNICAL SPECIFICATION TO CHANGE THE MAIN STEAM ISOLATION
VALVE (MSIV) CLOSURE SCRAM SET POINT (TAC NO. MA7860)

Dear Mr. Knubel:

The Commission has issued the enclosed Amendment No. 265 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 December 20, 1999, as supplemented February 4, 2000.

The amendment changes the Main Steam Isolation Valve closure scram trip level setting from ≤ 10 percent to ≤ 15 percent valve closure.

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,

/RA/

Guy S. Vissing, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures: 1. Amendment No. 265 to DPR-59
2. Safety Evaluation

cc w/encls: See next page

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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. 265
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 December 20, 2000, as supplemented February 4, 2000, 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. 265 , 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 and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 10, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 265

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

11
19
41

Insert Pages

11
19
41

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 265 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 December 20, 1999, as supplemented February 4, 2000, the Power Authority of the State of New York (the licensee) submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant Technical Specifications (TSs). The requested changes would change the main steam isolation valve (MSIV) closure scram trip level setting from ≤ 10 percent to ≤ 15 percent valve closure. The February 4, 2000, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination and did not expand the amendment beyond the scope of the original notice.

The FitzPatrick plant has experienced difficulties in coordinating the MSIV full open indication limit switches and the MSIV position scram limit switches due to setpoint requirements and associated drift tolerances. Changing the MSIV valve closure scram setpoint from ≤ 10 percent to ≤ 15 percent of valve closure from full open will allow the limit switches to be positioned such that both scram and indication limit switches can be coordinated and accurately reflect valve position indication.

2.0 BACKGROUND

MSIV closure results in loss of the main turbine and the condenser as a heat sink for the nuclear steam supply system and indicates a need to shut down the reactor to reduce heat generation. Thus, a reactor scram is initiated on an MSIV closure signal before the MSIVs are completely closed in anticipation of the complete loss of the normal heat sink and subsequent overpressurization transient.

The MSIV closure allowable value is specified to ensure that a scram occurs prior to a significant reduction in steam flow, thus reducing the severity of the subsequent pressure transient. This function is only required in MODE 1 since, with the MSIVs open and the heat generation rate high, a pressurization transient can occur if the MSIVs close.

As indicated previously, the FitzPatrick Nuclear Power Plant has experienced difficulties in coordinating the MSIV full open indication limit switches and the MSIV position scram limit switches. This difficulty is due to setpoint requirements and associated drift tolerances.

3.0 DISCUSSION AND EVALUATION

The licensee proposes the following specific changes to the TS:

Current TS location and TS statement:

Page 11, TS Section 2.1, item 5 "Main Steam Line Isolation Valve Closure Scram Trip Setting"
The following is to be changed:

"...valve closure scram shall be \leq 10 percent valve closure ..."

Proposed TS location and TS Statement:

Page 11, TS Section 2.1, item 5 "Main Steam Line Isolation Valve Closure Scram Trip Setting"
The proposed change is:

"...valve closure scram shall be \leq 15 percent valve closure..."

Current TS location and TS statement:

Page 19, TS Section 2.1 Bases, item 5, "Main Steam Line Isolation Valve Closure Scram Trip Setting"

The following is to be changed:

"... the scrams set at \leq 10 percent valve closure ..."

Proposed TS location and TS statement:

Page 19, TS Section 2.1 Bases, item 5, "Main Steam Line Isolation Valve Closure Scram Trip Setting"

The proposed change is:

"... The scrams set at \leq 15 percent valve closure ..."

Current TS location and TS statement:

Page 41, Table 3.1-1 titled "Reactor Protection System (SCRAM) Instrumentation Requirements"

column heading titled "Trip Level Setting"

The following is to be changed:

" \leq 10% valve closure"

Proposed TS location and TS statement:

Page 41, Table 3.1-1 titled "Reactor Protection System (SCRAM) Instrumentation Requirements"

column heading titled "Trip Level Setting"

The proposed change is:

" \leq 15% valve closure"

3.1 Evaluation with Respect to the Radiological Consequence Assessment

The potential impact on the radiological consequences due to the proposed change to the MSIV closure setpoint, from 90 to 85 percent open, is limited to only the main steam line break (MSLB) accident outside containment. The consequences are directly proportional to the mass released from the main steam lines and the primary coolant activity at the time of the accident. The licensee stated that considering the assumed MSIV closure time of 10 seconds, the proposed change to the MSIV position scram setpoint will result in a scram delay of 0.5 second for the MSLB accident and that this delay in scram time will not result in an increase in the mass release. The licensee further stated that the primary coolant activity will not change with the delayed scram.

The staff agrees to the licensee's statements and finds that the current radiological consequence assessment for the MSLB accident in the FitzPatrick Updated Safety Analysis Report Sections 14.6.1.5 and 14.8.2 are not affected by this proposed change. Therefore, the staff concludes the proposed radiological consequences to be acceptable.

3.2 Evaluation with Respect to Operation and Accident Considerations

The FitzPatrick plant design includes four main steam lines, each equipped with two redundant MSIVs. The function of the MSIVs is to limit the loss of reactor coolant from the reactor vessel and to limit the release of radioactive materials. Closure of the MSIVs, with the reactor critical, can result in an overpressure condition. Because of this, the MSIVs are equipped with limit switches which provide a signal to the reactor protection system. When three or more MSIVs in different steam lines are closed more than 10 percent of the valve stroke, the reactor protection system scrams the reactor.

The MSIVs are also equipped with a full open limit switch and a full closed limit switch. The licensee has experienced difficulties associated with coordinating the full open limit switch and the 90 percent open (≤ 10 percent closed) scram limit switch. When the scram limit switches were originally set at a nominally 90 percent open position, the licensee did not experience problems with the scram limit switches. However, the limit switch adjustment became complicated when the licensee recognized that the scram limit switch has a ± 3 percent drift which requires the 90 percent limit switch to be set at 93 percent, with a range of switch operation of 90 percent to 96 percent open. The full open limit switch has to be set so it is at a neutral position when the scram limit switch is tripped and is switched when the valve is fully open. The full open limit switch travel is limited to 97 percent open to 100 percent open. This results in a gap of only 1 percent of valve stroke to allow the scram limit switch lever arm to reset. Resetting the scram level arm is necessary to avoid dual position signal from the fully open limit switch and the scram limit switch. If the limit switches are not set correctly, the reactor protection system may not get a "valve partially closed" half scram signal. Additionally, the control room may get either both a "valve partially closed" and a "valve indicating full open" signal simultaneously, or not get a "valve full open" signal when the valve is actually fully open.

The FitzPatrick plant has experienced frequent problems with dual MSIV position signals or not getting a signal in the control room of the valve being fully open. The licensee stated that setting the scram limit switches and the valve fully open limit switches has become a difficult and time consuming task resulting in unnecessary dose to plant personnel. To alleviate this problem, the licensee has proposed to change the MSIV closure scram setpoint from ≤ 10 percent to ≤ 15 percent of valve closure from full open. Changing the MSIV valve position scram setpoint from \leq

10 percent to \leq 15 percent will allow the scram limit switch to be positioned such that both scram and indicating limit switches can be coordinated and accurately reflect valve position.

The MSIVs are required to close in 3 to 5 seconds. Changing the scram setpoint from \leq 10 percent to \leq 15 percent would result in a slight delay (up to 0.25 seconds) of initiation of the reactor scram. In support of the proposed change, the licensee provided an assessment performed by General Electric (Reference 2) of the impact of the scram delay on all of the abnormal operational occurrences and accidents discussed in the FitzPatrick updated final safety analysis report (UFSAR). While many of the FitzPatrick UFSAR events resulted in MSIV closure, the only event that relied on MSIV closure to initiate scram was the MSIV closure, direct scram event. All other events that resulted in MSIV closure, assumed that the reactor was scrammed prior to MSIV closure or that the MSIV closure scram is inoperable.

The slight scram delay due to the proposed setpoint change results in an increase in the energy generated during the MSIV closure, direct scram event. However, there is no impact on any operating limits because this event is not limiting. The limiting event for reactor vessel overpressure in the FitzPatrick UFSAR is the MSIV closure terminated by a high neutron flux scram event, which does not credit the MSIV closure valve position scram.

The impact of the setpoint change on the peak clad temperature (PCT) consequences of the MSLB - outside containment were also evaluated. The assumed MSIV closure time for the MSLB is 10 seconds. Changing the scram setpoint from \leq 10 percent to \leq 15 percent would result in a 0.5 second scram delay. The PCT for the MSLB - outside containment is not sensitive to the delay in scram. With regards to PCT, the MSLB - outside containment is not a limiting break. The FitzPatrick results for MSLB - outside containment show that there is no core uncover and no cladding heatup.

With regard to the instrumentation and controls aspect associated with operations and accident considerations, the licensee submittals were reviewed by the staff and were found acceptable.

The staff has reviewed the licensee's submittal and supporting analyses. The analyses were performed using approved methods, and the licensee has demonstrated that the proposed setpoint does not impact any operating limits. Therefore, the staff finds the proposed change acceptable.

3.3 Conclusions with Respect to the Proposed Technical Specifications

The staff reviewed the licensee's TS amendment request which proposed changes to the MSIV closure scram trip level setting from a setting of \leq 10 percent, to a setting \leq 15 percent valve closure. Specifically, the proposed changes were to TS 2.1.5 and Table 3.1-1 and the associated TS Bases related to the MSIV closure scram setpoint. Based on its review, the staff finds the proposed TS changes acceptable.

4.0 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.

5.0 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 (65 FR 6410) . Accordingly, the amendment 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.

6.0 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.

7.0 REFERENCES

1. Letter from Harry P. Salmon, Jr., New York Power Authority, to U.S. NRC, "Proposed Technical Specification Amendment to Change the Main Steam Isolation Valve Closure Scram Setpoint (JPTS-99-011)," dated December 20, 1999.
2. GE-NE A 1300458-00-01, "FitzPatrick MSIV Position Scram Setpoint Change Assessment," dated September 1999.

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Date: October 10, 2000

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