March 5, 1990

Docket No. 50-333

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. 71934)

The Commission has issued the enclosed Amendment No. 154 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 17, 1989 and amplified by letter dated October 25, 1989.

The amendment establishes controls for the valves in the Standby Gas Treatment System (SGTS) which are used for inerting and deinerting the primary containment, establishes a surveillance requirement so that the integrity and operability of the SGTS is assured if a design basis loss of coolant accident should occur while inerting or deinerting the primary containment, specifies the actions required when a containment isolation valve becomes inoperable, restricts the maximum opening angle at the vent and purge valves, and addresses new containment isolation valves which have been installed in the Reactor Building Closed Loop Cooling Water System.

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,

ORIGINAL SIGNED BY:

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

Enclosures:
1. Amendment No. 154 to DPR-59
2. Safety Evaluation

cc: w/enclosures
See next page

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w/changes

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[ISSUE AMD TAC NO 71934]

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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. 154
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 17, 1989 and amplified by letter dated October 25, 1989, 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. 154, 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, 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: March 5, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 154

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages	Insert Pages
183	183
-	183a
185	185
186	186
191	191
192	192
197	197

3.7 (cont'd)

2. From and after the date that one circuit of the Standby Gas Treatment System is made or found to be inoperable for any reason, the following would apply:

   a. If in Start-up/Hot Standby, Run or Hot Shutdown mode, reactor operation or irradiated fuel handling is permissible only during the succeeding 7 days unless such circuit is sooner made operable, provided that during such 7 days all active components of the other Standby Gas Treatment Circuit shall be operable.

   b. If in Refuel or Cold Shutdown mode, reactor operation or irradiated fuel handling is permissible only during the succeeding 31 days unless such circuit is sooner made operable, provided that during such 31 days all active components of the other Standby Gas Treatment Circuit shall be operable.

3. If Specifications 3.7.B.1 and 3.7.B.2 are not met, the reactor shall be placed in the cold condition and irradiated fuel handling operations and operations that could reduce the shutdown margin shall be prohibited.

4.7 (cont'd)

   e. At least once per operating cycle, manual operability of the bypass valve for filter cooling shall be demonstrated.

   f. Standby Gas Treatment System Instrumentation Calibration:

differential pressure switches	Once/operating Cycle

2. When one circuit of the Standby Gas Treatment System becomes inoperable, the operable circuit shall be verified to be operable immediately and daily thereafter.

3. Intentionally Blank

3.7 (cont'd)

4. Whenever primary containment integrity is required as specified in Section 3.7.A.2. Valve 27MOV-121 shall be used for inerting or deinerting.

4.7 (cont'd)

4. Valve 27MOV-120 shall be verified closed when containment integrity is established, and then once per month.

3.7 (cont'd)

D. Primary Containment Isolation Valves

1. Whenever primary containment integrity is required per 3.7.A.2, containment isolation valves specified in Table 3.7-1 and all instrument line excess flow check valves shall be operable, except as specified in 3.7.D.2. The closure times for the valves shall be as specified in Table 3.7-1. The containment vent and purge valves shall be limited to opening angles less than or equal to that specified below:

Valve Number	Maximum Opening Angle
27AOV-111	40°
27AOV-112	40°
27AOV-113	40°
27AOV-114	50°
27AOV-115	50°
27AOV-116	50°
27AOV-117	50°
27AOV-118	50°

4.7 (cont'd)

c. Secondary containment capability to maintain a 1/4 in. of water vacuum under calm wind conditions with a filter train flow rate of not more than 6,000 cfm, shall be demonstrated at each refueling outage prior to refueling.

D. Primary Containment Isolation Valves

1. The primary containment isolation valves surveillance shall be performed as follows:

a. At least once per operating cycle, the operable isolation valves that are power operated and automatically initiated shall be tested for simulated automatic initiation and for closure times as specified in Table 3.7-1.

b. At least once per operating cycle, the instrument line excess flow check valves shall be tested for proper operation.

c. At least once per quarter:

(1.) All normally open power-operated isolation valves (except for the main stream line and Reactor Building Closed Loop Cooling Water System (RBCLCWS) power-operated isolation valves) shall be fully closed and reopened.

3.7 (cont'd)

2. With one or more of the isolation valves listed in Table 3.7-1 inoperable, maintain at least one isolation valve operable in each affected penetration that is open and:

   a. Restore the inoperable valve(s) to operable status within 4 hours; or

   b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the closed position. Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control; or

   c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or a blind flange.

3. If Specifications 3.7.D.1 or 3.7.D.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold condition within 24 hrs.

4.7 (cont'd)

   (2.) With the reactor at reduced power level, trip main steam isolation valves and verify closure time.

   d. At least twice per week, the main steam line power-operated isolation valves shall be exercised by partial closure and subsequent reopening.

   e. The RBCLCWS isolation valves shall be fully closed and reopened any time the reactor is in the cold condition exceeding 48 hours, if the valves have not been fully closed and reopened during the preceding 92 days.

2. Whenever an isolation valve listed in Table 3.7-1 is inoperable, the position of at least one other valve in each line having an inoperable valve shall be recorded daily.

3.7 BASES (cont'd)

complete containment system, secondary containment is required at all times that primary containment is required as well as during refueling.

The Standby Gas Treatment System is designed to filter and exhaust the reactor building atmosphere to the main stack during secondary containment isolation conditions with a minimum release of radioactive materials from the reactor building to the environs. Both standby gas treatment fans are designed to automatically start upon containment isolation; however, only one fan is required to maintain the reactor building pressure at approximately a negative 1/4 in. water gage pressure; all leakage should be in-leakage. Each of the two fans has 100 percent capacity. If one Standby Gas Treatment System circuit is inoperable, the other circuit must be tested daily. This substantiates the availability of the operable circuit and results in no added risk; thus, reactor operation or refueling operation can continue. If neither circuit is operable, the Plant is brought to a condition where the system is not required.

While only a small amount of particulates is released form the Pressure Suppression Chamber System as a result of the loss-of-coolant accident, high-efficiency particulate filters are specified to minimize potential particulate release to the environment and to prevent clogging of the iodine filter. The high-efficiency filters have an efficiency greater than 99 percent for particulate matter larger than 0.3 micron. The minimum iodine removal efficiency is 99 percent. Filter banks will be replaced whenever significant changes in filter efficiency occur. Tests (11) of impregnated charcoal identical to that used in the filters indicate that shelf life up to 5 yr leads to only minor decreases in methyl iodine removal efficiency.

The 99 percent efficiency of the charcoal and particulate filters is sufficient to prevent exceeding 10CFR100 guidelines for the accidents analyzed. The analysis of the loss-of-coolant accident assumed a charcoal filter efficiency of 90 percent, a particulate filter efficiency of 90 percent, and TID 14844 fission product source term. Hence, requiring 99 percent efficiency for both the charcoal and particulate filters provides adequate margin. A heater maintains relative humidity below 70 percent in order to assure the efficient removal of methyl iodine on the impregnated charcoal filters.

The operability of the Standby Gas Treatment System (SGTS) must be assured if a design basis loss of coolant accident (LOCA) occurs while the containment is being purged or vented through the SGTS. Flow from containment to the SGTS is via 6 inch Valve Number 27MOV-121. Since the maximum flow through the 6 inch line following a design basis LOCA is within the design capabilities of the SGTS, use of the 6 inch line assures the operability of the SGTS.

D. Primary Containment Isolation Valves

Double isolation valves are provided on lines penetrating the primary containment and open to the free space

3.7 BASES (cont'd)

of the containment. Closure of one of the valves in each line would be sufficient to maintain the integrity of the Pressure Suppression System. Automatic initiation is required to minimize the potential leakage paths from the containment in the event of a loss-of-coolant accident.

The containment isolation valves on the containment vent and purge lines may be open for safety related reasons. Safety related reasons include, but are not limited to, the following: inerting or de-inerting primary containment; maintaining containment oxygen concentration; maintaining drywell and suppression pool atmospheric pressures; and maintaining the differential pressure between the drywell and suppression pool. These valves have been modified to limit the maximum angle of opening as shown in 3.7.D.1.

Nine remote manual isolation valves have been added to the Reactor Building Closed Loop Cooling Water System (RBCLCWS) in order to comply with 10 CFR 50 Appendix A GDC 57; These valves are air operated (with solenoid pilot valves), normally open, and are designed to fail "open"on loss of electrical power or "as is" upon loss of instrument air. Each AOV is provided with a Seismic Class I accumulator tank to allow operation of the valves upon loss of instrument air up to 2 full valve cycles. The fail-open design permits continued operation of the system to supply water to the recirculation pump-motor coolers and drywell coolers during normal operation and as necessary under accident conditions. If there is a postulated accident, and indications of leakage from RBCLCWS appear, the operator will selectively close the AOV's affected to provide containment isolation.

4.7 BASES (cont'd)

operability results in a more reliable system.

The main steam line isolation valves are functionally tested on a more frequent interval to establish a high degree of reliability.

The primary containment is penetrated by several small diameter instrument lines connected to the reactor coolant system. Each instrument line contains a 0.25 in. restricting orifice inside the primary containment and an excess flow check valve outside the primary containment.

The RBCLCWS valves are excluded from the quarterly surveillance requirements because closure of these valves will eliminate the coolant flow to the drywell air and recirculation pump-motor coolers. Without cooling water, the drywell air and equipment temperature will increase and may cause damage to the equipment during normal plant operations. Therefore, testing of these valves would only be conducted in the cold condition.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 154 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 17, 1989, the Power Authority of the State of New York (PASNY or the licensee), submitted an amendment to the Technical Specifications (TS) for the James A. FitzPatrick Nuclear Power Plant. The amendment would: (1) establish controls for the valves in the Standby Gas Treatment System (SGTS) which are used for primary containment inerting and deinerting to ensure the integrity and operability of the SGTS if a design basis loss of coolant accident (LOCA) occurs while inerting or deinerting the primary containment; (2) describe actions to be taken in the event a primary containment isolation valve becomes inoperable and actions which ensure maintenance of containment isolation capability; (3) specify the maximum opening angle for the containment vent and purge valves; and (4) reflect the addition of new containment isolation valves in the Reactor Building Closed Loop Cooling Water System (RBCLCWS) and exclusion of them from quarterly surveillance requirements applied to other primary containment isolation valves. By letter dated October 25, 1989, the licensee supplied information which better explained some of the details of its submittal and identified the penetrations associated with the RBCLCWS proposed change. The information served to clarify the submittal but did not alter the action noticed in the Federal Register on April 5, 1989, or affect the staff's determination that the proposed amendment involves no significant hazard.

EVALUATION

The first purpose of the proposed amendment would be accomplished by specifying that the 6-inch line to the SGTS and Valve No. 27 MOV-121 would be used for inerting or deinerting the primary containment whenever a vent path is needed and primary containment integrity is required. If a LOCA should occur while the valve is open, calculations performed by the licensee show that the maximum flow through the line would be limited such that the pressure drop across the SGTS filter assembly will not exceed the design limits. Thus, the probability of a LOCA adversely affecting the operability or availability of the SGTS is reduced. Restricting vent paths to the use of Valve No. 27 MOV-121 during normal plant operation does not adversely impact the normal primary containment inerting and deinerting activities.

In order to ensure that the only primary containment vent path available to the SGTS is through Valve No. 27 MOV-121, the proposed TS amendment would add a surveillance requirement to ensure that Valve No. 27 MOV-120 is verified closed whenever primary containment integrity is established, and then monthly thereafter. This valve is in the 20-inch primary containment vent line to the SGTS. The potential exists to exceed the allowable differential pressure across the SGTS filter assembly if the valve is open when a LOCA occurs, which could cause a loss of integrity of the SGTS. Maintaining this valve shut whenever primary containment integrity is required, does not adversely affect normal plant operation.

The second purpose of the proposed amendment would be accomplished by specifying that, if an isolation valve listed in Table 3.7-1 becomes inoperable, at least one isolation valve in the penetration which is open must be operable and (1) restore the inoperable valves to operable status within four hours, or (2) isolate the penetration within four hours using at least one deactivated automatic valve secured in the closed position (the amendment would allow a valve closed for this purpose to be reopened intermittently under administrative control and the containment vent and purge valves to be opened for safety related reasons), or (3) isolate the penetration within four hours using at least one closed manual valve or a blind flange. If this condition cannot be met, an orderly shutdown must be started and the reactor must be in a cold condition within 24 hours.

The result of this proposed change, therefore, is to strengthen and specify controls related to the primary containment isolation valves listed in Table 3.7-1 over the present TS requirements. The present TS do not specify a time limit for restoration of an inoperable valve, for isolation of the affected penetration, or provide allowance for operation of valves which are closed to provide isolation of the affected penetration with an inoperable valve. Additionally, the present TS do not require that, if an isolation valve is inoperable, its companion isolation valve must be operable when the penetration is open. Since double isolation valves are provided on piping listed in Table 3.7-1, the result of this proposed TS change is to more clearly specify the required status of the operable isolation valves when one valve is inoperable. Administrative controls (tagging or procedures) will be used to address the conditions under which the operable isolation valve will be opened on an intermittent basis. For example, this condition could exist if one of the drywell sump valves became inoperable. Since this would require that its companion valve be shut and deactivated, the controls would be designed to allow the operable valve to be open periodically so that the sump could be pumped out.

The proposed change would also allow use of a closed manual valve or a blind flange as an alternative to either repairing an inoperable primary containment valve or use of a deactivated automatic valve secured in the the closed position. This is satisfactory since the contingency is explicitly stated in the Standard Technical Specifications.

The third purpose of the proposed amendment, containment vent and purge maximum opening angle, is designed to ensure operability of the designated valves during a design basis LOCA. By limiting the valves to the angles specified, calculations performed by the licensee have shown that the valves will close under the loads imposed during a design basis LOCA. Thus, integrity of the primary containment is enhanced.

The final purpose of the proposed amendment, RBCLCWS isolation valves, would be accomplished by listing the subject valves and specifying that they be cycled whenever the reactor is in the cold condition for a period exceeding 48 hours, unless they have been cycled within the preceding 92 days. These valves were added to the RBCLCWS in order to comply with Appendix A to 10 CFR 50, General Design Criteria 57. They are air operated, normally open and are designed to fail open on loss of electrical power and "as is" on loss of instrument air. A Seismic Class 1 accumulator tank for each valve allows operation of the valve upon loss of instrument air for at least 2 full valve cycles. The valves are designed to permit continued cooling water supply to the Recirculation System pump motor coolers and the drywell coolers during normal plant operation and accident conditions. Should the need arise, the valves can be shut by the operator from the control room. The testing frequency ensures that the valves are tested at least once each operating cycle and more frequently if dictated by plant conditions (cold shutdown lasting longer than 48 hours). The valves are specifically exempted from the quarterly surveillance tests required for other normally open, power-operated isolation valves by the proposed amendment since operation of the valves during power operation might cause equipment damage. Thus, the testing requirements ensure that the valves are operable.

SUMMARY

All of the proposed TS changes contained in the amendment serve to better ensure maintenance of containment integrity and component operability. They are consistent with the Standard Technical Specifications where applicable, and establish improved controls relating to the primary containment. Therefore, it is concluded that the proposed change will not adversely affect the conclusions reached in either the Final Safety Analysis Report or the FitzPatrick Safety Evaluation Report accident analysis. The proposed TS changes are, therefore, acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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, and changes to the surveillance requirements. 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 pubic 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

Based on the considerations discussed above, the staff concludes 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: March 5, 1990

PRINCIPAL CONTRIBUTOR:

D. LaBarge