



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

April 25, 1994

Docket No. 50-333

Mr. William J. Cahill, Jr., Executive
Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Cahill:

SUBJECT: ISSUANCE OF AMENDMENT FOR JAMES A. FITZPATRICK NUCLEAR POWER PLANT
(TAC NO. M88677)

The Commission has issued the enclosed Amendment No. 211 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 January 31, 1994.

The amendment revises Appendix B of the TSs, the Radiological Effluent TSs. Specifically, the amendment revises Appendix B TS 3.5, and the associated Bases, to establish a threshold level below which there will be no requirement to perform grab samples and isotopic analyses of steam jet-air ejector (SJAE) effluent, and revises Appendix B TS Table 3.10-1 to change the actions required when entering a SJAE limiting condition for operation. Additionally, the amendment revises the TSs to clarify instructions and make editorial corrections which are administrative in nature.

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,

Brian C. McCabe, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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P PDR

Enclosures:

1. Amendment No. 211 to DPR-59
2. Safety Evaluation

cc w/enclosures:
See next page

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DFOI

Mr. William J. Cahill, Jr.
Power Authority of the State of New York

James A. FitzPatrick Nuclear
Power Plant

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DATED: April 25, 1994

AMENDMENT NO. 211 TO FACILITY OPERATING LICENSE NO. DPR-59-FITZPATRICK

Docket File

NRC & Local PDRs

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cc: Plant Service list



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. 211
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 31, 1994, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 211, 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: April 25, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 211

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix B as follows:

Remove Pages

28
37
40
41
42

Insert Pages

28
37
40
41
42

JAFNPP

LIMITING CONDITIONS FOR OPERATION

3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)

Applicability

Applies to main condenser offgas discharge rate for noble gases when the reactor is in the run, startup/hot standby or hot shutdown mode of operation and the SJAE is in service.

Objective

To ensure that the SJAE release rates are maintained at a level compatible for further treatment and release.

Specifications

- a. The gross radioactivity (beta and/or gamma) rate of noble gases measured at the SJAE is given on Table 3.10-1.

SURVEILLANCE REQUIREMENTS

3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)

Applicability

Applies to the point of discharge at the SJAE when the reactor is in the run, startup/hot standby or hot shutdown mode of operation and the SJAE is in service.

Objective

To ensure that the SJAE release rates are properly monitored.

Specifications

- a. The gross radioactivity (beta and/or gamma) rate of noble gases from the SJAE shall be determined to be within the limits of Specification 3.5.a by performing an isotopic analysis of a representative sample of gases taken at the discharge (prior to dilution and/or discharge) of the SJAE, or at the recombiner discharge (prior to delay of the offgas to reduce the total radioactivity) as follows:
 1. At least monthly.
 2. With the SJAE Monitor reading at 5,000 $\mu\text{Ci/sec}$ or greater, within 4 hours following an increase of greater than 50% (after factoring out increases due to changes in thermal power level) in the nominal steady state fission gas release from the primary coolant.

JAFNPP

TABLE 3.10-1
RADIATION MONITORING SYSTEMS THAT INITIATE AND/OR ISOLATE SYSTEMS

Minimum No. of Operable Instrument Channels	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design	Action
1(a)	Refuel Area Exhaust Monitor	(b)	2	(c) or (d)
1(a)	Reactor Building Area Exhaust Monitors	(b)	2	(d)
1(a)	SJAE Radiation Monitors	$\leq 500,000 \mu\text{Ci/sec}$	2	(e)
1(a)	Turbine Building Exhaust Monitors	(b)	2	(f)
1(a)	Radwaste Building Exhaust Monitors	(b)	2	(f)
1(a)	Main Control Room Ventilation	$\leq 4 \times 10^3 \text{ cpm}^{(i)}$	1	(g)
(h)	Mechanical Vacuum Pump Isolation	$\leq 3 \times \text{Normal Full Power Background}$	4	(h)

NOTES FOR TABLE 3.10-1

- (a) Whenever the systems are required to be operable, there shall be one operable or tripped instrument channel per system. From and after the time it is found that this cannot be met, the indicated action shall be taken.
- (b) Trip level setting is in accordance with the methods and procedures of the ODCM.
- (c) Cease operation of the refueling equipment.
- (d) Isolate secondary containment and start the SBGTS.
- (e) Bring the SJAE release rate below the trip level within 72 hours or isolate either the SJAE or all main steam lines within the next 12 hours.
- (f) Refer to Appendix B LCO 3.1.d.
- (g) Control room isolation is manually initiated.
- (h) Uses same sensors as primary containment isolation on high main steam line radiation. Refer to Appendix A Table 3.2-1 for minimum number of operable instrument channels and action required.
- (i) Conversion factor is $8.15 \times 10^7 \text{ cpm} - 1 \mu\text{Ci/cc}$.

BASES

3.0 GASEOUS EFFLUENTS

3.1 GASEOUS EFFLUENT MONITORS

The radioactive gaseous effluent instrumentation is provided to monitor and control the releases of radioactive materials in gaseous effluents during planned or unplanned releases. The alarm/trip set points for these instruments shall be calculated in accordance with methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR 20.

The operability and use of this instrumentation is consistent with the requirements of 10 CFR 50, Appendix A, General Design Criteria 60, 63 and 64.

3.2 GASEOUS DOSE RATES

This specification is provided to ensure that the dose at or beyond the site boundary from gaseous effluents will be within the annual dose limits of 10 CFR 20. The annual dose limits are the doses associated with the concentrations of 10 CFR 20, Appendix B, Table II, Column 1. These limits provide reasonable assurance that radioactive material discharges in gaseous effluents will not result in the exposure of a member of the public to annual average concentrations exceeding the limits specified in 10 CFR 20, Appendix B, Table II (10 CFR 20.106(b)). The specified limits restrict, at all times, corresponding gamma and beta dose rates above background to an individual at or beyond the exclusion area boundary to ≤ 500 mrem/year to the total body or to ≤ 3000 mrem/year to the skin. These limits also restrict the corresponding thyroid dose rate above background to a child via the inhalation pathway to ≤ 1500 mrem/year.

3.3 AIR DOSE, NOBLE GASES

This specification is provided to assure that the requirements of 10 CFR 50, Appendix I, Section II.B, III.A and IV.A are met. The Limiting Conditions for Operation are the guides set forth in Appendix I, Section II.B. The specification provides the required operating flexibility and, at the same time, implements the guides set forth in Appendix I, Section IV.A, to assure that the releases of radioactive material in gaseous effluents will be kept "as low as is reasonably achievable."

3.4 DOSE DUE TO IODINE-131, IODINE-133, TRITIUM AND RADIONUCLIDES IN PARTICULATE FORM

This specification is provided to assure that the requirements of 10 CFR 50, Appendix I, Section II.C, III.A and IV.A are met. The Limiting Conditions for Operation are the guides set forth in Appendix I, Section II.C. The specifications provide the required operating flexibility and, at the same time, implement the guides set forth in Appendix I, Section IV.A, to assure that the releases of radioactive materials in gaseous effluents will be kept "as low as is reasonably achievable."

BASES

3.5 MAIN CONDENSER STEAM JET AIR EJECTOR (SJAE)

This specification is provided to assure that remedial action is taken to limit the noble gas release rate at the SJAE. The requirement provides reasonable assurance that the amount of noble gas that must be treated and/or released is controlled to a level that prevents exceeding the limits specified in 10 CFR 20, Appendix B, Table II.

Two air ejector offgas monitors are provided and when their trip point is reached, cause an isolation of the air ejector offgas line. Isolation is initiated when both instruments reach their high trip point or one has an upscale trip and the other a downscale trip. There is a 15 minute delay before the air ejector offgas isolation valve is closed. This delay is accounted for by the 30 minute holdup time of the offgas before it is released to the stack. Both instruments are required for trip but the instruments are so designed that any instrument failure gives a downscale trip.

With the air ejector offgas monitors at 5,000 $\mu\text{Ci}/\text{sec}$ or greater, a measured increase in radioactivity of greater than 50% (after correcting for expected increases due to changes in thermal power) will also require the performance of an isotopic analysis within 4 hours after the increase is noted. This ensures that the increase is not indicative of a sustained increase in the radioactivity rate as a result of fuel failure. This is in addition to the normal 31 day grab sample surveillance requirement for monitoring reactor coolant activity levels for fuel failure. The 31 day frequency is adequate in view of other instrumentation that continuously monitor the offgas, and is acceptable, based on operating experience.

The 5,000 $\mu\text{Ci}/\text{sec}$ threshold level is an administrative control to reduce the number of unnecessary grab samples and analyses. This value is approximately 1 percent of the SJAE monitoring trip level setting of $\leq 500,000 \mu\text{Ci}/\text{sec}$. Calculated site boundary annual radiation exposures at the alarm setpoint remain within the 10 CFR 50, Appendix I guidelines.

3.6 OFFGAS TREATMENT SYSTEM

This specification is provided to ensure that the system will be available for use when required to reduce projected doses due to gaseous releases. This specification assures that the requirements of 10 CFR 50.36a, 10 CFR 50, Appendix A, General Design Criterion 60, and design objective in 10 CFR 50, Appendix I, Section II.D are met. The specified limits governing the use of appropriate portions of the systems are specified as a suitable fraction of the guide values set forth in 10 CFR 50, Appendix I, Sections II.B and II.C, for gaseous effluents.

The requirement for offgas treatment system operability provides assurance that the release of radioactive materials in gaseous waste will be kept "as low as is reasonably achievable." Operability of the system is based upon start-up of the second turbine driven feedwater pump. This is due to the fact that excess air in-leakages in the main condenser as a result of operating only one turbine driven feedwater pump will exceed offgas treatment system limitations and consequently render the system inoperable. Start-up of the second turbine driven feedwater pump will decrease air in-leakages and assure offgas treatment system availability.

BASES

3.7 OFFGAS TREATMENT SYSTEM EXPLOSIVE GAS MIXTURE INSTRUMENTATION

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in portions of the offgas treatment system not designed to withstand a hydrogen explosion is maintained below the lower explosive limit of hydrogen. Operation of the offgas recombiner system ensures that the concentration of hydrogen in the offgas charcoal filters remains below combustible levels.

Thus it provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of 10 CFR 50, Appendix A, General Design Criterion 60. The low steam flow trip point is based on 92% of design steam flow and reroutes the offgas to prevent overheating or ignition of the recombiner catalyst. The high steam flow trip point isolates the recombiner on excess steam flow that may be associated with a pipe break downstream of the recombiner.

3.8 STANDBY GAS TREATMENT SYSTEM (SBGTS)

Four radiation monitors are provided which initiate isolation of the reactor building and operating of the SBGTS. The monitors are located as follows: two in the reactor building ventilation exhaust duct and two in refuel floor ventilation exhaust duct. Each pair is considered a separate system. The trip logic consists of any upscale trip on a single monitor or a downscale trip on both monitors in a pair to cause the desired action.

Trip settings for the monitors in the refueling area ventilation exhaust ducts are based upon initiating normal ventilation isolation and SBGTS operation so that most of the activity released during the refueling accident is processed by the SBGTS.

The radiation monitors in the refueling area ventilation duct which initiate building isolation and standby gas treatment operation are arranged in a one out of two logic system. The bases given in Appendix A Bases 4.2 for the rod blocks apply here also and were used to arrive at the functional testing frequency. The air ejector offgas monitors are connected in a two out of two logic arrangement. Based on experience with instruments of similar design, a testing interval of once every three months has been found adequate.

3.9 MECHANICAL VACUUM PUMP ISOLATION

3.10 MAIN CONTROL ROOM VENTILATION RADIATION MONITOR



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 211 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 January 31, 1994, 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). Specifically, the licensee requested changes to Appendix B of the TSs, the Radiological Effluent TSs. The requested changes would revise Appendix B TS 3.5 and the associated Bases, to establish a threshold level below which there will be no requirement to perform grab samples and isotopic analyses of steam jet-air ejector (SJAE) effluent, and revise Appendix B TS Table 3.10-1 to change the actions required when entering an SJAE limiting condition for operation (LCO). In addition, the requested changes would revise TSs to clarify instructions and make editorial corrections which are administrative in nature.

2.0 EVALUATION

2.1 SJAE Grab Samples and Isotopic Analysis

The licensee has proposed to revise Appendix B TS 3.5 and the associated Bases to establish a threshold level below which there will be no requirement to perform grab samples and isotopic analyses of SJAE effluent. TS 3.5 currently requires a 4-hour action time for performing an offgas sample and analysis when the process radiation monitor indicates an increased release rate of greater than 50 percent after correction for changes in thermal power level.

The purpose of this requirement is to assure that fuel failures are promptly detected, ensuring that the 10 CFR Part 20 limits are not exceeded. However, when release rates are small, the installed detectors are not sufficiently sensitive to effectively monitor the effluent. To monitor the effluent at lower release rates, the licensee performs grab samples three times a week. This task results in additional radiation exposure to workers.

The proposed change would add a threshold detection level of 5,000 $\mu\text{Ci}/\text{sec}$, below which no additional grab samples and isotopic analysis would be required. The change would eliminate the need to perform grab samples three times a week while at lower release rates, thus minimizing radiation exposure to workers.

The threshold level (5000 $\mu\text{ci}/\text{sec}$) is 1 percent of the SJAE monitoring trip level setting and less than 10 percent of the SJAE instrument alarm value. This threshold value is sufficiently low so that significant fuel pin defects would still be identified prior to exceeding the 500,000 $\mu\text{ci}/\text{sec}$ trip setting, and long before the 10 CFR Part 20 limits are exceeded. Therefore, the change would not significantly reduce the margin of safety currently provided by the existing TSs.

Based on the fact that adequate monitoring of SJAE effluent monitoring capability is maintained, there would be no decrease in the margin of safety currently required by the existing technical specifications, and the change would help to minimize worker radiation exposure, the NRC staff finds the proposed change to be acceptable.

2.2 Revision of Main Condenser SJAE LCO

The licensee has proposed to revise Appendix B TS Table 3.10-1 to change the required actions when a SJAE LCO is entered. TS Table 3.10-1 currently requires the release rate to be brought below the trip level (500,000 $\mu\text{ci}/\text{sec}$) within 72 hours, of exceeding the trip level, or be in hot standby within the next 12 hours. The proposed change would remove the requirement to be in hot standby but would require, instead, isolation of all main steam lines or the SJAE.

The proposed change would provide a level of control equivalent to Section 3.7.6 of NUREG-1433, "Standard Technical Specifications (STSs) for General Electric Boiling Water Reactors (BWR/4)." The STSs require the release rate to be brought below the trip level within 72 hours, of exceeding the trip level, or 1) isolate all main steam lines within the next 12 hours, or 2) isolate SJAE within the next 12 hours, or 3) be in hot standby within the next 12 hours and be in shutdown within the next 36 hours. The proposed change is more limiting than the STSs because it does not provide the option of shutting down in lieu of isolating the main steam lines or the SJAE. Bringing the reactor to a shutdown condition does not prevent the release of radioactive gases since the main steam isolation valves, main steam line drains, and the SJAE may still operate allowing the release of gases to the environment.

Based on the fact that the proposed change provides a level of control equivalent to the STSs, the NRC staff finds the change to be acceptable.

2.3 Administrative Changes

The licensee proposed to revise Appendix B TSs to clarify instructions and make editorial corrections which are administrative in nature. The staff has reviewed these proposed changes and determined that they are acceptable since they do not involve any substantive changes to requirements.

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 and changes surveillance requirements. 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 (59 FR 10014). 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.

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: G. Replogle

Date: April 25, 1994

Apr 20, 1994

Docket No. 50-333

Mr. William J. Cahill, Jr., Executive
Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Cahill:

SUBJECT: ISSUANCE OF AMENDMENT FOR JAMES A. FITZPATRICK NUCLEAR POWER PLANT
(TAC NO. M88677)

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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,

Original signed by
Brian C. McCabe, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No.211 to DPR-59
- 2. Safety Evaluation

cc w/enclosures:

See next page

*See previous concurrence

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