November 10, 1988

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:

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated May 27, 1988 (TAC 68320).

The amendment changes the reactor vessel water level setpoint reference point in various TS pages from the bottom of the steam separator skirt to the top of the active fuel and changes the RCIC turbine trip to a steam line isolation on high reactor water level.

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

Enclosures:
1. Amendment No. 119 to DPR-59
2. Safety Evaluation

cc: w/enclosures
See next page

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PDR ADOCK 05000333
P PDC

Mr. John C. Brons
Power Authority of the State of New York
James A. FitzPatrick Nuclear
Power Plant

cc:

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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. 119
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 May 27, 1988, 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:

8811170127 881110
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P PDC

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 119, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects, I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 10, 1988

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

ATTACHMENT TO LICENSE AMENDMENT NO. 119

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages	Insert Pages
11	11
18	18
41a	41a
55	55
64	64
66	66
67	67
76	76
76a	76a
76d	76d
77	77

2.1 (cont'd)

2. Reactor Water Low Level Scram Trip Setting

Reactor low water level scram setting shall be $\geq$177 in. above the top of the active fuel (TAF) at normal operating conditions.

3. Turbine Stop Valve Closure Scram Trip Setting

Turbine stop valve scram shall be $\leq$10 percent valve closure from full open when above 217 psig turbine first stage pressure.

4. Turbine Control Valve Fast Closure Scram Trip Setting

Turbine control valve fast closure scram control oil pressure shall be set at $500 < P < 850$ psig.

5. Main Steam Line Isolation Valve Closure Scram Trip Setting

Main steam line isolation valve closure scram shall be $\leq$10 percent valve closure from full open.

6. Main Steam Line Isolation Valve Closure on Low Pressure

When in the run mode main steam line low pressure initiation of main steam line isolation valve closure shall be $\geq$825 psig.

2.1 BASES (Cont'd)

c. APRM Flux Scram Trip Setting (Run Mode) (cont'd)

rated power. This reduced flow referenced trip setpoint will result in an earlier scram during slow thermal transients, such as the loss of 80°F feedwater heating event, than would result with the 120% fixed high neutron flux scram trip. The lower flow referenced scram setpoint therefore decreases the severity (Δ CPR) of a slow thermal transient and allows lower Operating Limits if such a transient is the limiting abnormal operational transient during a certain exposure interval in the cycle.

The APRM fixed high neutron flux signal does not incorporate the time constant, but responds directly to instantaneous neutron flux. This scram setpoint scrams the reactor during fast power increase transients if credit is not taken for a direct (position) scram, and also serves to scram the reactor if credit is not taken for the flow referenced scram.

The scram trip setting must be adjusted to ensure that the LHGR transient peak is not increased for any combination of maximum fraction of limiting power density (MFLPD) and reactor core thermal power. The scram setting is adjusted in accordance with the formula in Specification 2.1.A.1.c, when the MFLPD is greater than the fraction of rated power (FRP). This adjustment may be accomplished by either (1) reducing the APRM scram and rod block settings or (2) adjusting the indicated APRM signal to reflect the high peaking condition.

Analyses of the limiting transients show that no scram adjustment is required to assure that the MCPR will be greater than the Safety Limit when the transient is initiated from the MCPR operating limits provided in Specification 3.1.B.

d. APRM Rod Block Trip Setting

Reactor power level may be varied by moving control rods or by varying the recirculation flow rate. The APRM system provides a control rod block to prevent rod withdrawal beyond a given point at constant recirculation flow rate, and thus provides an added level of protection before APRM Scram. This rod block trip setting, which is automatically varied with recirculation loop flow rate, prevents an increase in the reactor power level to excessive values due to control withdrawal. The flow variable trip setting parallels that of the APRM Scram and provides margin to scram, assuming a steady-state operation at the trip setting, over the entire recirculation flow range. The actual power distribution in the core is established by specified control rod sequences and is monitored continuously by the in-core LPRM system. As with the APRM scram trip setting, the APRM rod block trip setting is adjusted downward if the maximum fraction of limiting power density exceeds the fraction of rated power, thus preserving the APRM rod block margin. As with the scram setting, this may be accomplished by adjusting the APRM gain.

2. Reactor Water Low Level Scram Trip Setting

The reactor low water level scram is set at a point which will assure that the water level used in the Bases for the Safety Limit is maintained. The scram setpoint is based on normal operating temperature and pressure conditions because the level instrumentation is density compensated.

TABLE 3.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Minimum No. of Operable Instrument Channels per Trip System (1)	Trip Function	Trip Level Setting[1]	Modes in Which Function Must be Operable			Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (1)
			Refuel (6)	Startup	Run		
2	APRM Downscale	≥2.5 indicated on scale (9)			X	6 Instrument Channels	A or B
2	High Reactor Pressure	≤1045 psig	X(8)	X	X	4 Instrument Channels	A
2	High Drywell Pressure	≤2.7 psig	X(7)	X(7)	X	4 Instrument Channels	A
2	Reactor Low Water Level	≥177 in. above TAF	X	X	X	4 Instrument Channels	A
3	High Water Level in Scram Discharge Volume	≤34.5 gallons per Instrument Volume	X(2)	X	X	8 Instrument Channels	A
2	Main Steam line High Radiation	≤3x normal full power background (16)	X	X	X	4 Instrument Channels	A
4	Main Steam Line Isolation Valve Closure	≤10% valve closure	X(3)(5)	X(3)(5)	X(5)	8 Instrument Channels	A

Amendment No. ~~19~~, ~~43~~, ~~67~~, ~~75~~, ~~87~~, ~~90~~, 119

3.2 BASES

In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operator's ability to control, or terminates operator errors before they result in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the Core Cooling Systems, Control Rod Block and Standby Gas Treatment Systems. The objectives of the specifications are to assure the effectiveness of the protective instrumentation when required, even during periods when portions of such systems are out of service for maintenance, and to prescribe the trip settings required to assure adequate performance. When necessary, one channel may be made inoperable for brief intervals to conduct required functional tests and calibrations.

Some of the settings on the instrumentation that initiate or control core and containment cooling have tolerances explicitly stated where the high and low values are both critical and may have a substantial effect on safety. The set points of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are chosen at a level away from the normal operating range to prevent inadvertent actuation of the safety system involved and exposure to abnormal situations.

Actuation of primary containment valves is initiated by protective instrumentation shown in Table 3.2-1 which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement.

The low water level instrumentation, set to trip at 177 in. above the top of the active fuel, closes all isolation valves except those in Group 1. Details of valve grouping and required closing times are given in Specification 3.7. For valves which isolate at this level, this trip setting is adequate to prevent uncovering the core in the case of a break in the largest line assuming a 60 sec. valve closing time. Required closing times are less than this.

The low-low reactor water level instrumentation is set to trip when reactor water level is 126.5 in. above the top of active fuel. This trip

TABLE 3.2-1

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Minimum Number of Operable Instrument Channels per Trip System (1)	Instrument	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (2)
2 (6)	Reactor Low Water Level	≥177 in. above TAF	4 Inst. Channels	A
1	Reactor High Pressure (Shutdown Cooling Isolation)	≤75 psig	2 Inst. Channels	D
2	Reactor Low-Low-Low Water Level	≥18 in. above TAF	4 Inst. Channels	A
2 (6)	High Drywell Pressure	≤2.7 psig	4 Inst. Channels	A
2	High Radiation Main Steam Line Tunnel	≤3 x Normal Rated Full Power Background (9)	4 Inst. Channels	B
2	Low Pressure Main Steam Line	≥825 psig (7)	4 Inst. Channels	B
2	High Flow Main Steam Line	≤140% of Rated Steam Flow	4 Inst. Channels	B
2	Main Steam Line Leak Detection High Temperature	≤40°F above max ambient	4 Inst. Channels	B
3	Reactor Cleanup System Equipment Area High Temperature	≤40°F above max ambient	6 Inst. Channels	C
2	Low Condenser Vacuum Closes MSIV's	≥8" Hg. Vac (8)	4 Inst. Channels	B

TABLE 3.2-2

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
1	2	Reactor Low-Low Water Level	≥126.5 in. above TAF	4 HPCI & RCIC Inst. Channels	Initiates HPCI, RCIC & SGTS.
2	2	Reactor Low-Low-Low Water Level	≥18 in. above TAF	4 Core Spray & RHR Instrument Channels	Initiates Core Spray, LPCI, and Emergency Diesel Generators.
				4 ADS Instrument Channels	Initiates ADS in conjunction with confirmatory low level, 120 second time delay and LPCI or Core Spray pump discharge pressure interlock if not inhibited by ADS override switches.
3	2	Reactor High Water Level	≤222.5 in. above TAF	2 Inst. Channels	Trips HPCI Turbine and closes RCIC steam line isolation valve.
4	1	Reactor Low Level (inside shroud)	≥0 in. above TAF	2 Inst. Channels	Prevents inadvertent operation of containment spray during accident condition.

Amendment No. ~~19~~, ~~48~~, ~~67~~, ~~84~~, 119

TABLE 3.2-2 (cont'd)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
5	2	Containment High Pressure	$1 < p < 2.7$ psig	4 Inst. Channels	Prevents inadvertent operation of containment spray during accident condition.
6	1	Confirmatory Low Level	$\geq$177 in. above TAF	2 Inst. Channels	ADS Permissive in conjunction with Reactor Low-Low-Low Water Level.
7	2	High Drywell Pressure	$\leq$2.7 psig	HPCI Inst. Channels	Initiates Core Spray LPCI, HPCI and SGTS.
8	2	Reactor Low Pressure	$\geq$450 psig	4 Inst. Channels	Permissive for opening Core Spray and LPCI Admission valves.

TABI 3.2-6

SURVEILLANCE INSTRUMENTATION

Minimum No. of Operable Instrument Channels	Instrument	Type Indication and Range	No. of Channels Provided by Design	Action
2	Narrow Range Reactor Level (Note 3)	Indicator 164.5 to 224.5 in. above TAF	3	(13) (2)
	Narrow Range Reactor Level (Note 4)	Recorder 164.5 to 224.5 in. above TAF		
1	Wide Range Reactor Level (Note 14)	Indicator 14.5 to 224.5 in. above TAF	2	(2)
	Wide Range Reactor Level (Note 15)	Indicator-Recorder 14.5 to 224.5 in. above TAF		
1	Fuel Zone Reactor Level (Note 16)	Indicator 150 in. below to 200 in. above TAF	2	(2)
	Fuel Zone Reactor Level (Note 17)	Indicator-Recorder 150 in. below to 200 in. above TAF		
2	Reactor Pressure (Note 5)	Indicator 0-1200 psig	5	(1) (2)
	Reactor Pressure (Note 6)	Recorder 0-1200 psig		

Amendment No. ~~38~~, ~~48~~, ~~51~~, ~~61~~, ~~69~~, 119

TABLE 3.2-6 (Cont'd)
SURVEILLANCE INSTRUMENTATION

Minimum No. of Operable Instrument Channels	Instrument	Type Indication and Range	No. of Channels Provided by Design	Action
1	Drywell Pressure (Narrow Range)	(Narrow Range) Indicator Recorder 10 - 19 psia	2	(2)
	Drywell Pressure	(Wide Range) Indicator Recorder 0 - 100 psia		
2	Drywell Temperature	Indicator 50 - 250°F	4	(1) (2)
	Drywell Temperature	Recorder 50 - 350°F		
2	Suppression Chamber Temperature	Indicator 50 - 250°F	4	(1) (2)
	Suppression Chamber Temperature	Recorder 50 - 350°F		

Amendment No. ~~57~~, ~~67~~, ~~69~~, 119

NOTES FOR TABLE 3.2-6 (CONTINUED)

14. One (1) indicator from reactor wide range level instrument channel A.

15. One (1) indicator-recorder from reactor wide range level instrument channel B.

16. One (1) indicator from reactor fuel zone level instrument channel A.

17. One (1) indicator-recorder from reactor fuel zone level instrument channel B.

TABLE 3.2-7

INSTRUMENTATION THAT INITIATES RECIRCULATION PUMP TRIP

Minimum Number of Operable Instrument Channels per trip System (1)	Instrument	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Channels	Action
1	Reactor High Pressure	$\leq$1120 psig	4	(2)
1	Reactor Low-Low Water Level	$\geq$126.5 in. above TAF	4	(2)

Notes for Table 3.2-7

1. Whenever the reactor is in the run mode, there shall be one operable trip system for each parameter for each operating recirculation pump. From and after the time it is found that this cannot be met, the indicated action shall be taken.

2. Reduce power and place the Mode Selector Switch in a Mode other than the Run Mode within 24 hours.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 119 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 May 27, 1988 (Reference 1), the Power Authority of the State of New York (PASNY) requested changes to the Technical Specifications for James A. Fitzpatrick Nuclear Power Plant. The changes update the Technical Specification for the reactor water level instrumentation modifications that were proposed to comply with the requirements of NUREG-0737 and Regulatory Guide 1.97. The proposed modifications were found acceptable in our letters to PASNY dated February 26, 1982 (Reference 2), December 19, 1986 (Reference 3), March 16, 1983 (Reference 4), and March 14, 1988 (Reference 5). References 2 and 3 included changes to the Technical Specifications (Amendment Nos. 67 and 103, respectively, to the facility operating license) incorporating modifications to reactor water level instruments setpoints. The proposed changes to the Technical Specifications consist of rewording on five tables (Tables 3.1-1, 3.2-1, 3.2-2, 3.2-6, 3.2-7) and three pages (11, 18, 55) for the consistency of nomenclature and updating Tables 3.2-2 and 3.2-6 to incorporate modifications that were found acceptable in References 4 and 5.

2.0 EVALUATION

The proposed changes involving rewording for consistency of nomenclature are only administrative. The technical adequacy of these changes were found acceptable in References 2 and 3. The proposed changes to incorporate modifications approved in References 4 and 5 are as follows:

(1) Item II.K.3.13 of NUREG-0737 required modifications to RCIC initiation logic to permit automatic RCIC restart on reactor low water level following its trip on reactor high water level. The existing logic closes RCIC turbine trip valve on reactor high water level. The licensee's studies determined that compliance to the NUREG requirement can be achieved by modifying the logic to close the RCIC steam line isolation valve in lieu of RCIC turbine trip valve on reactor high water level. The staff evaluation in Reference 4 found this modification acceptable. The proposed change in Table 3.2-2 of the Technical Specification reflects this modification and is, therefore, acceptable.

(2) As part of the modifications to implement Regulatory Guide 1.97 requirements, the licensee proposed to recalibrate the reactor water level fuel zone instrument to cover a wider range that will include full active length of fuel, and to add a water level indicator-recorder to one of the two channels of the reactor water level wide range instrument. The staff evaluation in Reference 5 found these modifications acceptable. The proposed changes in Table 3.2-6 reflect these modifications and are, therefore, acceptable.

Based on the above evaluation, the staff concludes that the proposed changes to the technical specifications represent the modifications that were previously approved by the staff, do not involve an unreviewed safety question and, therefore, are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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.

4.0 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.

5.0 REFERENCES

1. PASNY Letter (John C. Brons) to NRC, dated 5/27/88.
2. NRC Letter (Phil J. Polk) to PASNY (Leroy W. Sinclair) dated 2/26/82.
3. NRC Letter (Harvey Abelson) to PASNY (John C. Brons) dated 12/19/86.
4. NRC Letter (Dominic B. Vassallo) to PASNY (Leroy W. Sinclair) dated 3/16/83.
5. NRC Letter (Harvey Abelson) to PASNY (John C. Brons) dated 3/14/88.

Dated: November 10, 1988

PRINCIPAL CONTRIBUTOR:

I. Ahmed

November 10, 1988

Docket No. 50-333

DISTRIBUTION

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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:

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated May 27, 1988 (TAC 68320).

The amendment changes the reactor vessel water level setpoint reference point in various TS pages from the bottom of the steam separator skirt to the top of the active fuel and changes the RCIC turbine trip to a steam line isolation on high reactor water level.

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

Enclosures:
1. Amendment No. 119 to DPR-59
2. Safety Evaluation

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Mr. John C. Brons
Power Authority of the State of New York
James A. FitzPatrick Nuclear
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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. 119
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 May 27, 1988, 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. 119, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects, I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 10, 1988

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

ATTACHMENT TO LICENSE AMENDMENT NO. 119

FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Revise Appendix A as follows:

Remove Pages	Insert Pages
11	11
18	18
41a	41a
55	55
64	64
66	66
67	67
76	76
76a	76a
76d	76d
77	77

2.1 (cont'd)

2. Reactor Water Low Level Scram Trip Setting

Reactor low water level scram setting shall be $\geq$177 in. above the top of the active fuel (TAF) at normal operating conditions.

3. Turbine Stop Valve Closure Scram Trip Setting

Turbine stop valve scram shall be $\leq$10 percent valve closure from full open when above 217 psig turbine first stage pressure.

4. Turbine Control Valve Fast Closure Scram Trip Setting

Turbine control valve fast closure scram control oil pressure shall be set at 500 $<$ P $<$ 850 psig.

5. Main Steam Line Isolation Valve Closure Scram Trip Setting

Main steam line isolation valve closure scram shall be $\leq$10 percent valve closure from full open.

6. Main Steam Line Isolation Valve Closure on Low Pressure

When in the run mode main steam line low pressure initiation of main steam line isolation valve closure shall be $\geq$825 psig.

2.1 BASES (Cont'd)

c. APRM Flux Scram Trip Setting (Run Mode) (cont'd)

rated power. This reduced flow referenced trip setpoint will result in an earlier scram during slow thermal transients, such as the loss of 80°F feedwater heating event, than would result with the 120% fixed high neutron flux scram trip. The lower flow referenced scram setpoint therefore decreases the severity (Δ CPR) of a slow thermal transient and allows lower Operating Limits if such a transient is the limiting abnormal operational transient during a certain exposure interval in the cycle.

The APRM fixed high neutron flux signal does not incorporate the time constant, but responds directly to instantaneous neutron flux. This scram setpoint scrams the reactor during fast power increase transients if credit is not taken for a direct (position) scram, and also serves to scram the reactor if credit is not taken for the flow referenced scram.

The scram trip setting must be adjusted to ensure that the LHGR transient peak is not increased for any combination of maximum fraction of limiting power density (MFLPD) and reactor core thermal power. The scram setting is adjusted in accordance with the formula in Specification 2.1.A.1.c, when the MFLPD is greater than the fraction of rated power (FRP). This adjustment may be accomplished by either (1) reducing the APRM scram and rod block settings or (2) adjusting the indicated APRM signal to reflect the high peaking condition.

Analyses of the limiting transients show that no scram adjustment is required to assure that the MCPR will be greater than the Safety Limit when the transient is initiated from the MCPR operating limits provided in Specification 3.1.B.

d. APRM Rod Block Trip Setting

Reactor power level may be varied by moving control rods or by varying the recirculation flow rate. The APRM system provides a control rod block to prevent rod withdrawal beyond a given point at constant recirculation flow rate, and thus provides an added level of protection before APRM Scram. This rod block trip setting, which is automatically varied with recirculation loop flow rate, prevents an increase in the reactor power level to excessive values due to control withdrawal. The flow variable trip setting parallels that of the APRM Scram and provides margin to scram, assuming a steady-state operation at the trip setting, over the entire recirculation flow range. The actual power distribution in the core is established by specified control rod sequences and is monitored continuously by the in-core LPRM system. As with the APRM scram trip setting, the APRM rod block trip setting is adjusted downward if the maximum fraction of limiting power density exceeds the fraction of rated power, thus preserving the APRM rod block margin. As with the scram setting, this may be accomplished by adjusting the APRM gain.

2. Reactor Water Low Level Scram Trip Setting

The reactor low water level scram is set at a point which will assure that the water level used in the Bases for the Safety Limit is maintained. The scram setpoint is based on normal operating temperature and pressure conditions because the level instrumentation is density compensated.

TABLE 3.1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Minimum No. of Operable Instrument Channels per Trip System (1)	Trip Function	Trip Level Setting[1]	Modes in Which Function Must be Operable			Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (1)
			Refuel (6)	Startup	Run		
2	APRM Downscale	≥2.5 indicated on scale (9)			X	6 Instrument Channels	A or B
2	High Reactor Pressure	≤1045 psig	X(8)	X	X	4 Instrument Channels	A
2	High Drywell Pressure	≤2.7 psig	X(7)	X(7)	X	4 Instrument Channels	A
2	Reactor Low Water Level	≥177 in. above TAF	X	X	X	4 Instrument Channels	A
3	High Water Level in Scram Discharge Volume	≤34.5 gallons per Instrument Volume	X(2)	X	X	8 Instrument Channels	A
2	Main Steam line High Radiation	≤3x normal full power background (16)	X	X	X	4 Instrument Channels	A
4	Main Steam Line Isolation Valve Closure	≤10% valve closure	X(3)(5)	X(3)(5)	X(5)	8 Instrument Channels	A

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3.2 BASES

In addition to reactor protection instrumentation which initiates a reactor .. .m, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operator's ability to control, or terminates operator errors before they result in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the Core Cooling Systems, Control Rod Block and Standby Gas Treatment Systems. The objectives of the specifications are to assure the effectiveness of the protective instrumentation when required, even during periods when portions of such systems are out of service for maintenance, and to prescribe the trip settings required to assure adequate performance. When necessary, one channel may be made inoperable for brief intervals to conduct required functional tests and calibrations.

Some of the settings on the instrumentation that initiate or control core and containment cooling have tolerances explicitly stated where the high and low values are both critical and may have a substantial effect on safety. The set points of other instrumentation, where only the high or low end of the setting has a direct bearing on safety, are chosen at a level away from the normal operating range to prevent inadvertent actuation of the safety system involved and exposure to abnormal situations.

Actuation of primary containment valves is initiated by protective instrumentation shown in Table 3.2-1 which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement.

The low water level instrumentation, set to trip at 177 in. above the top of the active fuel, closes all isolation valves except those in Group 1. Details of valve grouping and required closing times are given in Specification 3.7. For valves which isolate at this level, this trip setting is adequate to prevent uncovering the core in the case of a break in the largest line assuming a 60 sec. valve closing time. Required closing times are less than this.

The low-low reactor water level instrumentation is set to trip when reactor water level is 126.5 in. above the top of active fuel. This trip

TABLE 3.2-1

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION

Minimum Number of Operable Instrument Channels per Trip System (1)	Instrument	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (2)
2 (6)	Reactor Low Water Level	≥177 in. above TAF	4 Inst. Channels	A
1	Reactor High Pressure (Shutdown Cooling Isolation)	≤75 psig	2 Inst. Channels	D
2	Reactor Low-Low-Low Water Level	≥18 in. above TAF	4 Inst. Channels	A
2 (6)	High Drywell Pressure	≤2.7 psig	4 Inst. Channels	A
2	High Radiation Main Steam Line Tunnel	≤3 x Normal Rated Full Power Background (9)	4 Inst. Channels	B
2	Low Pressure Main Steam Line	≥825 psig (7)	4 Inst. Channels	B
2	High Flow Main Steam Line	≤140% of Rated Steam Flow	4 Inst. Channels	B
2	Main Steam Line Leak Detection High Temperature	≤40°F above max ambient	4 Inst. Channels	B
3	Reactor Cleanup System Equipment Area High Temperature	≤40°F above max ambient	6 Inst. Channels	C
2	Low Condenser Vacuum Closes MSIV's	≥8" Hg. Vac (8)	4 Inst. Channels	B

TABLE 3.2-2

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
1	2	Reactor Low-Low Water Level	≥126.5 in. above TAF	4 HPCI & RCIC Inst. Channels	Initiates HPCI, RCIC & SGTS.
2	2	Reactor Low-Low-Low Water Level	≥18 in. above TAF	4 Core Spray & RHR Instrument Channels	Initiates Core Spray, LPCI, and Emergency Diesel Generators.
				4 ADS Instrument Channels	Initiates ADS in conjunction with confirmatory low level, 120 second time delay and LPCI or Core Spray pump discharge pressure interlock if not inhibited by ADS override switches.
3	2	Reactor High Water Level	≤222.5 in. above TAF	2 Inst. Channels	Trips HPCI Turbine and closes RCIC steam line isolation valve.
4	1	Reactor Low Level (inside shroud)	≥0 in. above TAF	2 Inst. Channels	Prevents inadvertent operation of containment spray during accident condition.

TABLE 3.2-2 (cont'd)

INSTRUMENTATION THAT INITIATES OR CONTROLS THE CORE AND CONTAINMENT COOLING SYSTEMS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (1)	Trip Function	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Remarks
5	2	Containment High Pressure	$1 < p < 2.7$ psig	4 Inst. Channels	Prevents inadvertent operation of containment spray during accident condition.
6	1	Confirmatory Low Level	$\geq$177 in. above TAF	2 Inst. Channels	ADS Permissive in conjunction with Reactor Low-Low-Low Water Level.
7	2	High Drywell Pressure	$\leq$2.7 psig	HPCI Inst. Channels	Initiates Core Spray LPCI, HPCI and SGTS.
8	2	Reactor Low Pressure	$\geq$450 psig	4 Inst. Channels	Permissive for opening Core Spray and LPCI Admission valves.

TABLE 3.2-6
SURVEILLANCE INSTRUMENTATION

Minimum No. of Operable Instrument Channels	Instrument	Type Indication and Range	No. of Channels Provided by Design	Action
2	Narrow Range Reactor Level (Note 3)	Indicator 164.5 to 224.5 in. above TAF	3	(13) (2)
	Narrow Range Reactor Level (Note 4)	Recorder 164.5 to 224.5 in. above TAF		
1	Wide Range Reactor Level (Note 14)	Indicator 14.5 to 224.5 in. above TAF	2	(2)
	Wide Range Reactor Level (Note 15)	Indicator-Recorder 14.5 to 224.5 in. above TAF		
1	Fuel Zone Reactor Level (Note 16)	Indicator 150 in. below to 200 in. above TAF	2	(2)
	Fuel Zone Reactor Level (Note 17)	Indicator-Recorder 150 in. below to 200 in. above TAF		
2	Reactor Pressure (Note 5)	Indicator 0-1200 psig	5	(1) (2)
	Reactor Pressure (Note 6)	Recorder 0-1200 psig		

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TABLE 3.2-6 (Cont'd)
SURVEILLANCE INSTRUMENTATION

Minimum No. of Operable Instrument Channels	Instrument	Type Indication and Range	No. of Channels Provided by Design	Action
	Drywell Pressure (Narrow Range)	(Narrow Range) Indicator Recorder 10 - 19 psia		
1	Drywell Pressure	(Wide Range) Indicator Recorder 0 - 100 psia	2	(2)
2	Drywell Temperature	Indicator 50 - 250°F	4	(1) (2)
	Drywell Temperature	Recorder 50 - 350°F		
2	Suppression Chamber Temperature	Indicator 50 - 250°F	4	(1) (2)
	Suppression Chamber Temperature	Recorder 50 - 350°F		

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NOTES FOR TABLE 3.2-6 (CONTINUED)

14. One (1) indicator from reactor wide range level instrument channel A.

15. One (1) indicator-recorder from reactor wide range level instrument channel B.

16. One (1) indicator from reactor fuel zone level instrument channel A.

17. One (1) indicator-recorder from reactor fuel zone level instrument channel B.

TABLE 3.2-7

INSTRUMENTATION THAT INITIATES RECIRCULATION PUMP TRIP

Minimum Number of Operable Instrument Channels per trip System (1)	Instrument	Trip Level Setting	Total Number of Instrument Channels Provided by Design for Both Channels	Action
1	Reactor High Pressure	$\leq$1120 psig	4	(2)
1	Reactor Low-Low Water Level	$\geq$126.5 in. above TAF	4	(2)

Notes for Table 3.2-7

1. Whenever the reactor is in the run mode, there shall be one operable trip system for each parameter for each operating recirculation pump. From and after the time it is found that this cannot be met, the indicated action shall be taken.

2. Reduce power and place the Mode Selector Switch in a Mode other than the Run Mode within 24 hours.

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 119 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 May 27, 1988 (Reference 1), the Power Authority of the State of New York (PASNY) requested changes to the Technical Specifications for James A. Fitzpatrick Nuclear Power Plant. The changes update the Technical Specification for the reactor water level instrumentation modifications that were proposed to comply with the requirements of NUREG-0737 and Regulatory Guide 1.97. The proposed modifications were found acceptable in our letters to PASNY dated February 26, 1982 (Reference 2), December 19, 1986 (Reference 3), March 16, 1983 (Reference 4), and March 14, 1988 (Reference 5). References 2 and 3 included changes to the Technical Specifications (Amendment Nos. 67 and 103, respectively, to the facility operating license) incorporating modifications to reactor water level instruments setpoints. The proposed changes to the Technical Specifications consist of rewording on five tables (Tables 3.1-1, 3.2-1, 3.2-2, 3.2-6, 3.2-7) and three pages (11, 18, 55) for the consistency of nomenclature and updating Tables 3.2-2 and 3.2-6 to incorporate modifications that were found acceptable in References 4 and 5.

2.0 EVALUATION

The proposed changes involving rewording for consistency of nomenclature are only administrative. The technical adequacy of these changes were found acceptable in References 2 and 3. The proposed changes to incorporate modifications approved in References 4 and 5 are as follows:

(1) Item II.K.3.13 of NUREG-0737 required modifications to RCIC initiation logic to permit automatic RCIC restart on reactor low water level following its trip on reactor high water level. The existing logic closes RCIC turbine trip valve on reactor high water level. The licensee's studies determined that compliance to the NUREG requirement can be achieved by modifying the logic to close the RCIC steam line isolation valve in lieu of RCIC turbine trip valve on reactor high water level. The staff evaluation in Reference 4 found this modification acceptable. The proposed change in Table 3.2-2 of the Technical Specification reflects this modification and is, therefore, acceptable.

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(2) As part of the modifications to implement Regulatory Guide 1.97 requirements, the licensee proposed to recalibrate the reactor water level fuel zone instrument to cover a wider range that will include full active length of fuel, and to add a water level indicator-recorder to one of the two channels of the reactor water level wide range instrument. The staff evaluation in Reference 5 found these modifications acceptable. The proposed changes in Table 3.2-6 reflect these modifications and are, therefore, acceptable.

Based on the above evaluation, the staff concludes that the proposed changes to the technical specifications represent the modifications that were previously approved by the staff, do not involve an unreviewed safety question and, therefore, are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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.

4.0 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.

5.0 REFERENCES

1. PASNY Letter (John C. Brons) to NRC, dated 5/27/88.
2. NRC Letter (Phil J. Polk) to PASNY (Leroy W. Sinclair) dated 2/26/82.
3. NRC Letter (Harvey Abelson) to PASNY (John C. Brons) dated 12/19/86.
4. NRC Letter (Dominic B. Vassallo) to PASNY (Leroy W. Sinclair) dated 3/16/83.
5. NRC Letter (Harvey Abelson) to PASNY (John C. Brons) dated 3/14/88.

Dated: November 10, 1988

PRINCIPAL CONTRIBUTOR:

I. Ahmed