ATTACHMENT I

Proposed Technical Specification Changes
Related to Refuel Interlocks and
Control Rod Blocks

New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333

dated

December 6, 1984

TABLE 3. 1-1

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

Minimum No. of Operable Instrument Channels per Trip System (1)	Trip Function	Trip Level Setting	Modes in Which Function Must be Operable: Refuel (6) (16)	Startup	Run	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (1)
1	Mode Switch in Shutdown		X	X	X	1 Mode Switch (4 Sections)	A
1	Manual Scram		X	X		2 Instrument Channels	A
3	IRM High Flux	≤ 120/125 of full scale	X	X		8 Instrument Channels	A
3	IRM Inoperative		X	X		8 Instrument Channels	A
2	APRM Neutron Flux-Startup (15)	≤15% Power	X	X		6 Instrument Channels	A
2	APRM Flow Referenced Neutron Flux (12)(13)(14) (Not to exceed 117%)	$S \leq (0.66W+54\%) \times \left[\frac{FRP}{MFLPD}\right]$	X	X		6 Instrument Channels	A or B
2	APRM Fixed High Neutron Flux (14)	≤120% Power			X	6 Instrument Channels	A or B
2	APRM Inoperative	(10)	X	X	X	6 Instrument Channels	A or B

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			Refuel (6) (16)	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	≥ 12.5 in. indicated level (177 in. above the top of active fuel)	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	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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			Refuel (6) (16)	Startup	Run		
2	Turbine Control Valve Fast Closure	500 P 850 psig Control oil pressure between fast closure solenoid and disc dump valve			X(4)	4 Instrument Channels	A or C

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	Modes in Which Function Must be Operable: Refuel (6) (16)	Modes in Which Function Must be Operable: Startup	Modes in Which Function Must be Operable: Run	Total Number of Instrument Channels Provided by Design for Both Trip Systems	Action (1)
4	Turbine Stop Valve Closure	10 % valve closure			X(4)(5)	8 Instrument Channels	A or C

NOTES OF TABLE 3.1-1

1. There shall be two operable or tripped trip systems for each function, except as specified in 4.1.D. From and after the time that the minimum number of operable instrument channel for a trip system cannot be met, that affected trip system shall be placed in the safe (tripped) condition, or the appropriate actions listed below shall be taken.

   A. Initiate insertion of operable rods and complete insertion of all operable rods within four hours.
   B. Reduce power level to IRM range and place Mode Switch in the Startup Position within eight hours.
   C. Reduce power to less than 30 percent of rated.

2. Permissible to bypass, in Refuel and Shutdown positions of the Reactor Mode Switch.

3. By passed when reactor pressure is 1005 psig.

4. Bypassed when turbine first stage pressure is less than 217 psig or less than 30 percent of rated.

5. The design permits closure of any two lines without a scram being initiated.

6. When the reactor is subcritical and the reactor water temperature is less than 212°F, only the following trip functions need to be operable:
   A. Mode Switch in Shutdown
   B. Manual Scram

TABLE 3. 1-1 (cont'd)

REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENT

NOTES OF TABLE 3.1-1 (cont'd)

14. The APRM flow biased high neutron flux signal is fed through a time constant circuit of approximately 6 seconds. The APRM fixed high neutron flux singal does not incorporate the time constant, but responds directly to instantaneous neutron flux.

15. This Average Power Range Monitor scram function is fixed point and is increased when the reactor mode switch is place in the Run position.

16. When all rods are full-in and electrically disarmed, the reactor protection system need not be operable.

3.10 LIMITING CONDITIONS FOR OPERATION

3.10 CORE ALTERATIONS

Applicability:

Applies to fuel handling and core reactivity limitations.

Objective:

To assure that core reactivity is within the capability of the control rods and to prevent criticality during refueling.

Specification:

A. Refueling Interlocks

1. The Reactor Mode Switch shall be locked in the Refuel position during core alterations and the refueling interlocks shall be operable except as specified in Specifications 3.10.A.2, 3.10.A.8, 3.10.D, and 3.10.E.

2. Fuel shall not be loaded into the reactor core unless all control rods are fully inserted except in accordance with Specification 3.10.A.7.

3. The fuel grapple hoist load switch shall be set at ≤650 lbs.

4.10 SURVEILLANCE REQUIREMENTS

4.10 CORE ALTERATIONS

Applicability:

Applies to the periodic testing of those interlocks and instruments used during refueling and core alterations.

Objective:

To verify the operability of instrumentation and interlocks used during refueling and core alterations.

Specification:

A. Refueling Interlocks

1. Prior to any fuel handling, with the head off the reactor vessel, the refueling interlocks shall be functionally tested. They shall also be tested at weekly intervals thereafter until no longer required and following any repair work associated with the interlocks.

2. Whenever the reactor is in the refuel mode and rod block interlocks are being bypassed for core unloading, one licensed operator and a member of the reactor analyst department shall verify that the fuel from the cell has been removed before the corresponding control rod is withdrawn.

3.10 (cont'd)

control rod after the fuel assemblies in the cell containing (controlled by) that control rod have been removed from the reactor core. All other refueling interlocks shall be operable.

7. In the "refuel" mode, there are interlocks which prevent the refueling bridge (if loaded) from moving toward the core unless all control rods are fully inserted. Those interlocks may be bypassed during spiral loading except for those control cells which contain fuel or that control cell which is being loaded. Interlocks for all cells containing fuel, or for any cell about to be loaded, shall be operable.

8. Refuel interlocks and rod blocks associated with one rod permissive need not be operable, if all rods are fully inserted and electrically disarmed.

B. Core Monitoring

During core alterations two SRM's shall be operable, one in the core quadrant where fuel or control rods are being moved and one in an adjacent quadrant. For an SRM to be considered operable, the following conditions shall be satisfied:

B. Core Monitoring

Prior to making alterations to the core the SRM's shall be functionally tested and checked for neutron response. Thereafter, the SRM's will be checked daily for response, except as specified in Specification 3.10.B.3 and 4.

3.10 (cont'd)

4.10 (cont'd)

1. The SRM shall be inserted to the normal operating level. (Use of special movable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors is permissable as long as the detector is connected into normal SRM circuit).

2. The SRM shall have a minimum of 3 counts/sec with all rods fully inserted in the core except as noted in 3 and 4 below.

3. Prior to spiral unloading, the SRM's shall have an initial count rate of ≥ 3 CPS. During spiral unloading, the count rate of the SRM's may drop below 3 CPS.

4. During Spiral reload, SRM operability will be verified by using a portable external source every 12 hours until enough fuel is loaded to maintain 3 CPS. Alternatively, two fuel assemblies will be loaded in different cells containing control blades around each SRM to obtain the required 3 CPS. Until these two assemblies have been loaded in a given quadrant, it is not necessary for the SRM in that quadrant to indicate the minimum count rate of 3 CPS. The loading of fuel near the SRM's does not violate the intent of the spiral reloading pattern.

ATTACHMENT II

Safety Evaluation
for
Technical Specifications Related to Refuel Interlocks and
Control Rod Blocks
(JPTS-84-21)

New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333

dated

December 6, 1984

I. Description of the Proposed Changes

The proposed changes to the FitzPatrick Technical Specifications relate to refuel interlocks and control rod blocks.

Specifically, the following changes are being proposed:

On pages 41, 41a, 41b and 42 in the column heading under "Refuel," add "(16)."

On page 43a add the following note:

"16. When all rods are full-in and electrically disarmed, the reactor protection system need not be operable."

On page 227, amend the end of Section 3.10.A.1 to read

"3.10.A.2, 3.10.A.8, 3.10.D, and 3.10.E."

On page 230 add Section 3.10.A.8:

"Refuel interlocks and rod blocks associated with one rod permissive need not be operable if all rods are fully inserted and electrically disarmed."

Section 3.10.B.1 is moved from page 230 to a new page 230a.

II. Purpose of the Proposed Changes

The proposed changes are necessary to allow refueling while the Reactor Protection System is inoperable during installation of Analog Trip Transmitter System components.

III. Impact of the Proposed Changes

The Reactor Protection System limits the uncontrolled release of radioactive material from the fuel and the Reactor Coolant Pressure Boundary by terminating excessive temperature and pressure increases through the initiation of an automatic scram. Since the proposed changes apply only when all rods are full-in and electrically disarmed, the safety of the plant will not be affected.

The purpose of the control rod blocks and refueling interlocks, as described in Reference 1, Sections 7.6 and 7.7, is to prevent inadvertent criticality by restricting the movement of control rods. Since all rods will be electrically disarmed, the proposed change will not affect the safety of the plant. In addition, the nuclear characteristics of the core assure that the reactor would remain subcritical even if the highest worth control rod were fully withdrawn.

The Commission has provided guidance concerning the application of the standards for making a "no significant hazard considerations" determination by providing certain examples in the Federal Register (F.R.) Vol. 48, No. 67 dated April 6, 1984, page 14870. The proposed changes match Commission example (vi): "A change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria with respect to the system or component specified in the Standard Review Plan". The proposed change is similar to this example in that it is within all acceptable criteria. However, the probability or consequences of a previously-analyzed accident are not increased, and safety margins are not reduced.

Operation of the FitzPatrick plant in accordance with the proposed amendments, therefore, would not:

(1) involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) involve a significant reduction in a margin of safety.

IV. Implementation of the Changes

Implementation of the changes, as proposed, will not impact the fire protection program at FitzPatrick, nor will the changes impact the environment.

V. Conclusion

The incorporation of these changes involves no significant hazard considerations, as defined in 10 CFR 50.92.

VI. References

1. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report (SER).

2. James A. FitzPatrick Nuclear Power Plant Final Safety Analysis Report (FSAR), Rev. 1, July 1983.