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November 13, 1978
JNRC-78-56

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr Thomas A. Ippolito
Operating Reactors Branch No. 3
Division of Operating Reactors

Subject: James A. FitzPatrick Nuclear Power Plant
Additional Information For Proposed
Technical Specification Change
Docket No. 50-333

Dear Sir:

Transmitted herewith are our responses to your letter dated September 13, 1978 which requested additional information concerning proposed changes to the Technical Specifications, deletion of APRM trip (at ≤ 15%) in REFUEL mode.

Very truly yours,

Paul J. Early
Assistant Chief Engineer-
Projects

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ADDITIONAL INFORMATION

CONCERNING PROPOSED CHANGES TO TECHNICAL SPECIFICATION FOR THE JAMES A. FITZPATRICK NUCLEAR POWER PLANT

Question 1

When in the refueling mode with the fixed 15% rated thermal power trip setpoint of the APRM's removed, provide assurance that SRM detectors and the IRM trip are operable, or no reactivity changes will be made to the core.

Response

SRM detectors and the IRM trip are operable at all times when the reactor is in REFUEL mode. Paragraph 5.4.8 and 5.4.9 of the JAFNPP REFUELING PROCEDURE NO. 7.1.3 state:

5.4.8 Prior to rod withdrawals performed during fuel moves, the procedure requires verification by a second licensed operator or a member of the reactor analyst group that the correct rod has been selected and that the required SRM's are operable.

5.4.9 Verify that IRM's are operable in accordance with Technical Specifications and that their range switches are on the Range 1 position.

Question 2

Clarify if this modification pertains to the refueling mode only or is the shutdown mode also part of the proposed change.

Response

The proposed Technical Specification change, deletion of APRM trip (at $\leq$15% power), applies to the refueling mode only.

Question 3

Clarify if the bypass of the APRM trip will be hard wired into the mode selector switch when in the refueling position or will it be procedural change. Provide a detailed description of this modification which assures that the trip function will be available for startup operations.

Response

Bypass of the APRM will strictly be a procedural change and no hardware changes will be made to the APRM trip system. Prior to the startup of the reactor, the APRM's are to be calibrated to assure that the trip function will be available for startup operations.

As indicated in the response to Question 1 above, two independent checks are made for rod withdrawals performed during fuel moves to assure that the correct rod is selected. In addition, when the mode switch is in REFUEL, only one control rod can be withdrawn. Selection of a second rod initiates refueling interlocks (rod block) thereby preventing the withdrawal of more than one rod at a time. Therefore, the refueling interlocks prevents any condition which could lead to inadvertent criticality due to a control rod withdrawal error during refueling. Further, IRM rod block and scram systems are also available in the REFUEL mode.

Chapter 14 of the FSAR for James A. FitzPatrick Plant discusses Control Rod Drop Accident which is more severe accident than an inadvertent rod withdrawal accident in the REFUEL mode. Control Rod Drop Accident analysis assumes that reactor is critical initially and the velocity at which the control rod falls out of the core is assumed to be 5 ft. per second. On the other hand, for the inadvertent rod withdrawal accident in the REFUEL mode, the reactor is subcritical initially and the velocity at which the control rod is withdrawn, is assumed to be about 0.24 ft. per second.

Conclusion made in the FSAR for the Control Rod Drop Accident shows that, even using conservative meteorological assumptions, the radiological doses resulting from this accident are well below 10 CFR 100 limits.