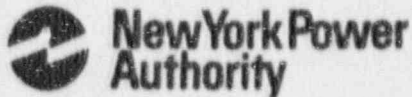


James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093
315 342-3840



William Fernandez II
Resident Manager

April 23, 1991
JAFP-91-0245, Revision 1

Mr. Thomas T. Martin
Regional Administrator, Region 1
United States Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

SUBJECT: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Request for Waiver of Compliance Regarding APRM
Instrument Functional Test Frequency

Dear Sir:

The Authority requests a Waiver of Compliance for the Average Power Range Monitor (APRM) instrument functional test frequency contained in Table 4.1-1 of the James A. FitzPatrick Technical Specifications. If this waiver is not granted, then the Authority would have to shutdown the plant unnecessarily.

As described in Attachment I, this request satisfies the criteria for a regional Waiver of Compliance as described in a February 22, 1990 letter from T. E. Murley to the NRC's regional administrators. For the reasons detailed in the attachment, this situation could not have been foreseen or avoided.

This letter requests a Waiver from Compliance with APRM instrument functional test requirements. The Technical Specifications require that certain functional tests be completed on a weekly basis. The tests are due to be completed by 9:30 P.M. today. These tests cannot be completed as required without causing a plant scram.

On April 20th, a routine operability check revealed that the "A" main steam line monitor was reading high and oscillating. The monitor was declared inoperable on Saturday, April 20th, and replacement of the detector began. The replacement of the detector was determined to not resolve the problem at 3:00 P.M. on April 22th. Troubleshooting will resume this evening.

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TO: MR. THOMAS T. MARTIN
FROM: MR. WILLIAM FERNANDEZ
SUBJECT: REQUEST FOR WAIVER OF COMPLIANCE
REGARDING APRM INSTRUMENT FUNCTIONAL
TEST FREQUENCY

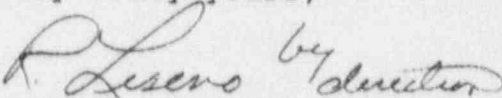
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Because the Main Steam Line Radiation Monitors (MSLRM) provide inputs to the reactor protection system (RPS), the inoperable "A" MSLRM requires the "A" RPS trip system to be placed in the tripped condition in accordance with Technical Specification Table 3.1-1, Note 1. With the "A" side half-scam in place, it becomes impractical to perform the RPS instrument functional tests required by Technical Specification Table 4.1-1. The instrument functional tests generate RPS trip signals and corresponding half-scrams which will either be masked by the existing "A" half-scam or will complete the RPS logic, resulting in a reactor scram.

Prompt action is required because the Technical Specification Table 4.1-1 surveillance interval for the APRM instrument functional test has already expired and the TS 4.0.B.1 +25% surveillance interval extension allowance will expire this evening (April 22nd) at 9:30 P.M.

Should you have any questions regarding the proposed changes, please contact Mr. R. T. Liseno.

Very truly yours,


WILLIAM FERNANDEZ

WF:lar

Attachment

cc: ✓ USNRC Document Control Desk
USNRC Resident Inspector
R. Capra, USNRC
B. McCabe, USNRC

ATTACHMENT I

PROPOSED WAIVER OF COMPLIANCE REGARDING
APRM INSTRUMENT FUNCTIONAL TEST FREQUENCY

PORC Chairman R. Liseno

Date 4/23/91

PORC Meeting 91-46

Date 4/22/91

New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
DPR-59

Attachment 1
New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Request for Waiver of Compliance

1. A Discussion of the Requirements for Which a Waiver is Requested

The Authority requests a one-time Waiver of Compliance for the Average Power Range Monitor (APRM) instrument functional test frequency contained in Technical Specification Table 4.1-1. Three APRM scram functions: high flux, inoperative, and downscale require an instrument functional test frequency of once/week. These tests were last performed on April 14th at 3:30 A.M., making the next test due on April 22nd. The proposed waiver would grant a one-time extension of this surveillance interval, allowing the next test to be performed by April 28th, at 3:30 A.M. The proposed extension period exceeds the TS 4.0.B.1 $\pm 25\%$ allowable variation of the surveillance interval by an additional 75% for a total interval of 14 days.

2. A Discussion of Circumstances Surrounding the Situation Including the Need for Prompt Action

On Saturday, April 20th, while the FitzPatrick plant was at full power operations, plant operators discovered that the "A" Main Steam Line Radiation Monitor (MSLRM) reading was oscillating between 1700 and 2000 mR/hr. The other three monitors were reading normally at a steady 1600 mR/hr. Troubleshooting activities began on the "A" MSLRM and continued through Sunday. On Saturday April 20th, the monitor was declared inoperable. On Sunday it was removed from the main steam line tunnel and the detector was replaced. At 3:00 P.M. today a preliminary source check of the "A" MSLRM indicated that the oscillation problem remained. Further troubleshooting is commencing this evening.

Because the MSRMs provide inputs to the Reactor Protection System (RPS), the inoperable "A" MSLRM requires the "A" RPS trip system to be placed in the tripped condition in accordance with TS Table 3.1-1, Note 1. This places the FitzPatrick plant in a "half-scram" condition. In this condition, any other scram signal on the "A" RPS logic is masked and any scram signal on the "B" RPS logic will cause a reactor scram.

With the "A" side half-scram in place, it becomes impractical to perform the RPS instrument functional tests required by Technical Specification Table 4.1-1. The instrument functional tests generate RPS trip signals and corresponding half-scrams. As discussed in Section 1 above, the APRM instrument functional tests are currently due. The RPS "A" logic APRMs cannot be tested because their half-scram signals are masked by the MSLRM half-scram. The RPS

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New York Power Authority
James A. FitzPatrick Nuclear Power Plant
Request for Waiver of Compliance

"B" logic APRM cannot be tested, because to do so would complete the logic for a full scram, resulting in rapid control rod insertion and plant shutdown.

Prompt action is required because the TS Table 4.1-1 surveillance interval for the APRM instrument functional test has already expired and the TS 4.0.B.1 +25% surveillance interval extension allowance will expire this evening (April 22nd) at 9:30 P.M. If the Waiver of Compliance is not granted by this time, the three APRM functions must be declared inoperable. In accordance with TS Table 3.1-1, Note 1, the FitzPatrick plant either must be shutdown with all control rods inserted within four hours, or be in the start-up mode with power level reduced to the IRM range (<15% power) within eight hours.

3. A Discussion of Compensatory Actions

During the period of the proposed extension of the APRM instrument functional tests, there will be no unnecessary control rod movements or changes in reactor power level. In addition, the operation of the APRMs will continue to be checked once per shift.

The APRM instrument functional test verifies the operability for the following functions when the mode switch is in the run mode:

- o APRM Upscale High Alarm and Rod Block
- o APRM Upscale Neutron Trip and RPS Scram
- o APRM Downscale Alarm and Rod Block
- o APRM Inoperative Alarm and RPS Scram - due to APRM mode switch out of operate position or less than minimum required inputs.

Each of these alarm and trip functions are clearly indicated to the control room operator by annunciator alarm, computer alarm, and APRM front panel alarm lights. Setpoints for the upscale high, upscale neutron trip, and downscale alarm are consistently found to be accurate during surveillance testing. No instances were discovered of these setpoints being out of tolerance since January 1, 1990. Setpoint for the inoperative trip on minimum number of LPRM inputs has a history of minor drift. To compensate for this, once each shift the input LPRM readings will be printed out from the

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process computer and reviewed to determine that the LPRM inputs are indeed sufficient to constitute an operable APRM channel. This will provide adequate assurance that this monitoring parameter does not adversely affect the operability of the APRMs.

4. A Preliminary Evaluation of the Safety Significance and Potential Consequences of the Proposed Request

The one-time extension of the RPS APRM high flux, inoperative, and downscale surveillance tests does not have a significant affect on plant safety. The inability to perform these surveillance tests on schedule does not disable the trip functions. The one-time extension of the surveillance interval to a total of 14 days will not result in a significant reduction in the reliability of the trip systems.

In the highly unlikely event of the failure of any of these RPS trip signals during the duration of the waiver, the consequences would be acceptable as discussed below.

APRM High Flux - This trip signal responds to a neutron flux spike which occurs too rapidly for the APRM flow referenced neutron flux function. Events which produce a neutron spike at power would also involve changes in other plant parameters for which there are independent and redundant scram signals. For example, high reactor pressure or turbine stop valve closure.

APRM Inoperative - Once-per-shift operability checks of the APRMs will assure that the APRMs remain operable. Should an APRM become inoperative, indication is available to the control room operators.

APRM Downscale - This function ensures proper overlap of the APRMs and IRMs during the transition from the start-up mode (IRM) to run mode (APRM). Since there will be no attempt to reduce power to the start-up mode during the waiver period, there is no safety significance to having this function out of service.

The operating history of the APRMs has been briefly reviewed from January 1, 1990 to present. During this timeframe one failure occurred that could have been detected by the APRM instrument functional test alone.

01/11/90 F APRM did not generate an inoperative trip at the required minimum number of LPRM inputs.

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The following are the significant other deficiencies associated with APRMs that would not have been detected by the instrument functional test.

- 03/09/90 C APRM rod block relay began chattering and required replacement
- 06/30/90 A APRM generated a spurious upscale trip during a plant start-up
- 07/10/90 A APRM generated a spurious upscale trip during plant start-up
- 09/05/90 E APRM mode switch was replaced due to erratic operation in the test mode
- 09/25/90 F APRM generated an upscale trip due to a spiking LPRM
- 01/17/91 F APRM declared inoperative due to too few LPRM inputs

Thus, the probability of a failure occurring during this extended surveillance period that could only be found from performance of this surveillance is small.

In addition, since the "A" RPS logic is in the tripped condition for the duration of the waiver, only one out of three "B" side APRMs needs to function to initiate a reactor scram.

5. A Discussion Which Justifies the Duration of the Request

The duration of the Waiver of Compliance until 3:30 A.M. on April 28th provides sufficient time to complete the repair of the failed main steam line radiation monitor, perform all surveillance tests necessary to return the MSLRM to service, and perform the deferred APRM RPS surveillances.

6. The Basis for the Conclusion that the Request Does Not Involve a Significant Hazards Consideration

Operation of the FitzPatrick plant in accordance with the proposed waiver would not involve a significant hazards consideration as stated in 10CFR50.92, since it would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated

The APRM system monitors the reactor and provides scram signals in response to increases in the neutron flux.

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The proposed waiver provide. a one-time extension of the surveillance interval associated with this system. This increased surveillance interval does not prevent the APRM from performing its intended function. This system does not initiate any accidents or transients and its function, to detect and initiate a reactor scram, are unaffected. Therefore the probability or consequences of an accident previously evaluated remain unchanged.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated

The APRM system provides a reactor core monitoring and scram initiation function only. The proposed waiver does not involve any change to plant hardware to operating procedures. The one-time extension of an APRM surveillance interval cannot initiate a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety

Although all of the APRM scram functions remain available, increasing the APRM RPS surveillance interval reduces the reliability of the RPS. This slight reduction in reliability is a result of a "lack of knowledge" which accompanies any increase in surveillance interval. That is, there is a probability that the instrument could fail during the surveillance interval and remain undetected for a slightly longer period of time. Other surveillances and the compensatory actions discussed above reduce the likelihood that a failed APRM would remain undetected. This slight reduction in reliability does not result in a significant reduction in a margin of safety.

7. The Basis for the Conclusion that the Request Does Not Involve Irreversible Environmental Effects

The proposed Waiver of Compliance does not effect the type or quantity of radioactive or other materials released from the FitzPatrick plant. No change is made to the design or operation of the effluent treatment or monitoring systems. During the period of the proposed waiver, routine full power operation of the FitzPatrick plant will continue with no additional environmental effects.