

ATTACHMENT I TO IPN-92-001

PROPOSED TECHNICAL SPECIFICATION CHANGES  
RELATED TO  
INCORE MOVABLE DETECTOR GUIDE THIMBLES

NEW YORK POWER AUTHORITY  
INDIAN POINT 3 NUCLEAR POWER PLANT  
DOCKET NO. 50-286  
DPR-64

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### 3.11 MOVABLE INCORE INSTRUMENTATION

#### Applicability

Applies to the operability of the movable detector instrumentation system.

#### Objective

To specify functional requirements on the use of the incore instrumentation system, for the recalibration of the excore axial off-set detection system.

#### Specification

- A. A minimum of 2 thimbles per quadrant and sufficient movable incore detectors shall be operable during recalibration of the excore axial off-set detection system.
- B. Power shall be limited to 90% of rated power if recalibration requirements for the excore axial off-set detection system, identified in Table 4.1-1, are not met.
- C. During the incore/excore calibration procedure, all full core flux maps will be made only when 38 of the movable detector guide thimbles are operable.

#### Basis

The Movable Incore Instrumentation System<sup>(1)</sup> has six drives, six detectors, and 58 movable detector guide thimbles in the core. Fifty (50) of these thimbles were provided as part of the original design basis of the plant. The other eight thimbles are supplemental thimbles that were connected during the 8/9 refueling outage. The eight supplemental thimbles are maintained to the same standards as the original 50 thimbles. These eight supplemental thimbles can be used to satisfy the 38 thimble requirement for flux mapping. An appropriate evaluation will be performed prior to the initial use of the supplemental thimbles to satisfy technical specification requirements for flux mapping. The eight supplemental thimbles improve the reliability of the Movable Incore Instrumentation System. Each of the six movable incore detectors can be routed to sixteen or more thimbles. Consequently, the full system has a great deal more capability than would be needed for the calibration of the excore detectors.

To calibrate the excore detectors, it is only necessary that the Movable Incore Instrumentation System be used to determine the gross power distribution in the core as indicated by the power balance between the top and bottom halves of the core.

After the excore system is calibrated initially, recalibration is needed only infrequently to compensate for changes in the core, due for example to fuel depletion, and for changes in the detectors.

If the recalibration is not performed, the mandated power reduction assures safe operation of the reactor as it will compensate for an error of 10% in the excore protection system. Experience at Beznau No. 1 and R.E. Ginna plants has shown that drift due to changes in the core or instrument channels is very slight. Thus the 10% reduction is considered to be very conservative.

Reference

- (1) FSAR - Section 7.6

ATTACHMENT II TO IPN-92-001

SAFETY EVALUATION OF  
TECHNICAL SPECIFICATION CHANGES  
RELATED TO  
INCORE MOVABLE DETECTOR GUIDE THIMBLES

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Section I - Description of Changes

This application for amendment to the Indian Point 3 Technical Specifications seeks to revise section 3.11 of Appendix A of the Operating License. These proposed changes revise the number of available movable detector guide thimbles and correct some administrative and typographical errors.

Section II - Evaluation of Changes

Technical specification 3.11.C currently requires 75% of the movable detector guide thimbles to be operable for full core flux mapping. The 75% requirement currently applies to 50 movable detector guide thimbles. This means that 38 of the movable detector guide thimbles are currently required to be operable for full core flux mapping.

A plant modification was performed to install eight additional movable detector guide thimbles. The eight additional thimbles are located in areas previously occupied by thimbles used with the Fixed Incore Detection System, a system that was originally part of a research and development program. The Fixed Incore Detection System is no longer used or required at IP3.

A plant modification that will make the eight new thimbles available for use with the Movable Incore Instrumentation System is being planned. This modification will provide the drive paths necessary for insertion of the movable incore detectors. Upon completion of this modification, there will be a total of 58 movable detector guide thimbles available for use with the Movable Incore Instrumentation System. Fifty (50) of these thimbles are part of the original design basis of the plant. The other eight thimbles will be used as supplemental thimbles. These eight supplemental thimbles will be maintained to the same standards as the original 50 thimbles. The existence of the supplemental thimbles will improve the reliability of the Movable Incore Instrumentation System.

The proposed changes to technical specification 3.11.C and the associated bases reflect the change in the number of available movable detector guide thimbles. Proposed technical specification 3.11.C states that 38 of the thimbles will be required to be operable during full core flux mapping. This operability requirement is the same operability requirement that currently exists, however, for clarity, the operability requirement is stated in terms of a specific number rather than a percentage. The bases change reflects the fact that a total of 58 thimbles will be available for use with the Movable Incore Instrumentation System, 50 original thimbles and eight supplemental thimbles. If needed, the eight supplemental thimbles will be used to satisfy the 38 thimble technical specification requirement for flux mapping. Therefore, for full core flux mapping, at least 38 of the total number of thimbles will still be required to be operable. An appropriate evaluation will be performed prior to the initial use of the supplemental thimbles to satisfy the 38 thimble technical specification requirement.

Additional changes to technical specification section 3.11 include administrative changes and typographical corrections. The administrative change to page 3.11-2 reflects that FSAR section 7.6 is the correct reference for the Movable Incore Instrumentation System. The administrative change to specification 3.11.B deletes the reference to three loop operation. All references to three loop operation should have been removed by license amendment number 48, dated January 13, 1984. Specification 3.11.B was inadvertently overlooked at that time. All other administrative changes and typographical corrections are minor changes needed for clarification or consistency.

The technical specification changes described above allow supplemental thimbles to be used along with the original thimbles, and correct some administrative and typographical errors. These proposed changes will not change the current operability requirements for the movable detector guide thimbles. The changes will allow for improved reliability of the Movable Incore Instrumentation System. The administrative technical specification changes will provide for clarification and consistency of the text in section 3.11.

### Section III - No Significant Hazards Evaluation

Consistent with the requirements of 10 CFR 50.92, the enclosed application is judged to involve no significant hazards based on the following information:

- (1) Does the proposed license amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response:

The proposed changes do not involve an increase in the probability of a previously analyzed accident because they do not involve a change in the current operability requirements of the movable detector guide thimbles. The technical specification changes allow supplemental thimbles to be used along with the original thimbles and correct some administrative and typographical errors. The changes will allow for improved reliability of the Movable Incore Instrumentation System. The administrative technical specification changes will provide for clarification and consistency of the text in section 3.11.

- (2) Does the proposed license amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response:

The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because they do not affect any current technical specification requirements. The proposed changes allow for an increase in the number of movable detector guide thimbles available for reactor flux monitoring and correct some administrative errors. The operability requirements of the movable detector guide thimbles will not be affected.

- (3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response:

The proposed technical specification changes do not involve a significant reduction in a margin of safety because they do not involve a change in current operability requirements. The changes will allow for improved reliability of the Movable Incore Instrumentation System. The administrative technical specification changes will provide for clarification and consistency of the text in section 3.11.

#### Section IV - Impact of Change

This change will not adversely affect the following:

ALARA Program  
Security and Fire Protection Programs  
Emergency Plan  
FSAR or SER Conclusions  
Overall Plant Operations and the Environment

#### Section V - Conclusions

The incorporation of this change: a) will not increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report; b) will not increase the possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report; c) will not reduce the margin of safety as defined in the bases for any Technical Specification; d) does not constitute an unreviewed safety question; and e) involves no significant hazards consideration as defined in 10 CFR 50.92.

#### Section VI - References

- a) IP-3 FSAR
- b) IP-3 SER
- c) NRC letter, P.J. Polk to J.P. Bayne, dated January 13, 1984, "Steam Generator Tube Plugging - Amendment No. 48 to Facility Operating License No. DPR-64."