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August 22, 2000

Re: Indian Point Unit No. 2  
Docket No. 50-247  
NET-085-03

Document Control Desk  
US Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, DC 20555-0001

**APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE**

Subject: Proposed Amendment to the Technical Specifications for Cycle 15 to Allow  
Extended RPI Deviation Limits and On-Line Calibration of the RPI Channels

The proprietary information for which withholding is being requested in the above-referenced letter is further identified in Affidavit NET-085-03 signed by the owner of the proprietary information, Con Edison. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b) (4) of 10 CFR Section 2.790 of the Commission's regulations.

Correspondence with respect to the proprietary aspects of the application for withholding or the affidavit should reference this letter, and should be addressed to the undersigned.

Sincerely,



James S. Baumstark  
Vice President - Nuclear Engineering

cc: Office of the General Counsel, NRC

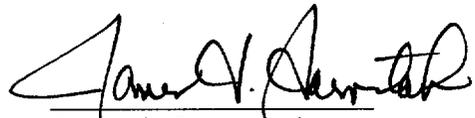
**AFFIDAVIT**

STATE OF NEW YORK

SS

COUNTY OF WESTCHESTER

Before me, the undersigned authority, personally appeared James S. Baumstark, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this affidavit on behalf of Consolidated Edison Company and that the averments of fact set forth in this affidavit are true and correct to the best of his knowledge, information, and belief:



James S. Baumstark  
Vice President - Nuclear Engineering

Subscribed and sworn to  
before me this 22<sup>nd</sup> day  
August 2000.

*Karen L. Lancaster*  
Notary Public

KAREN L. LANCASTER  
Notary Public, State of New York  
No. 60-4643659  
Qualified in Westchester County  
Term Expires 9/30/01

- (1) I am the Vice President - Nuclear Engineering at Consolidated Edison Company of New York, Inc. I have been specifically delegated the function of reviewing proprietary information to be withheld from public disclosure in connection with nuclear power plant licensing and rulemaking proceedings, and am authorized to apply for its withholding on behalf of Consolidated Edison Company.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.790 of the Commission's regulations.
- (3) The proprietary information sought to be withheld is the Cycle 15 calculated core power distributions and the Cycle 14 calculated core power distributions, which are transmitted herewith by a Consolidated Edison Company Letter and an Application for Withholding Proprietary Information from Public Disclosure.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.790 of the Commission's regulations, the following information is furnished for consideration by the Commission in determining whether it should be withheld from public disclosure.
  - (i) Pursuant to Con Edison approved Corporate procedures; Arthur P. Ginsberg and James P. Mooney obtained US Patent No. 5,011,649 for extended RPI Deviation Limits and the online, at power recalibration procedure of RPI channels in pressurized water reactors.
  - (ii) The information sought to be withheld from public disclosure comprises the application of the procedures developed in such patent as they pertain to Indian Point Unit 2. Such information is owned and has been held in confidence by Consolidated Edison Company, Arthur P. Ginsberg and James P. Mooney.
  - (iii) The information is of a type customarily held in confidence by Con Edison and not disclosed to the public. Con Edison has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine whether to hold certain types of information in confidence. Under that system, information is held in confidence if the release may result in the loss of an existing or potential competitive advantage, as follows:
    - (a) The information reveals distinguishing aspects of a patented method. The use of such information by others without a license would constitute a loss to Con Edison of a competitive economic advantage over other nuclear utilities, and a direct loss of protected patent rights to Con Edison.

- (b) Use of such information by a competitor would reduce his expenditure of resources and improve his competitive position in licensing a similar product.

There are sound policy reasons behind Con Edison's system, which include the following:

- (a) As per corporate procedure and policy, Con Edison obtains patents for its employees and encourages them to market them.
- (b) The information sought to be protected is valuable and marketable commercial information. The extent which such information is available to others without license would diminish the ability of the individual co-owners to sell products and services involving the use of the information.
- (c) Each piece or component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total package of proprietary information. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle; thereby depriving the owners of the proprietary information of a competitive advantage.
- (iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.790, it is to be received in confidence by the Commission.
- (v) The information sought to be protected is not available in public sources and, to the best of our knowledge and belief, has not been previously employed in the same original manner or method.

This information will enable Con Edison to:

- (a) Provide documentation of the analyses and methodology used in extending the RPI deviation limits and performing on-line RPI calibrations.
- (b) Obtain NRC approval of the proposed Technical Specification Amendments.

Further, this information has substantial commercial value because:

- (a) The method allows a utility to continue operating its nuclear power plant and not shut down completely should the rod position indicators drift beyond their current limits as stated in the proposed Technical Specifications. This will result in significant operational benefits and enhanced unit availability. This also represents substantial savings as the utility would avoid having to purchase replacement power.
- (b) The method allows a utility to return to service more quickly following an outage, again avoiding additional replacement power costs.
- (c) The method is an alternative to purchasing expensive replacement equipment.

The development of the technology described in the proprietary report is the result of intensive efforts and the expenditure of a considerable sum of money by Con Edison. Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Con Edison because it would enhance the ability of other nuclear utilities to provide similar licensing services for commercial power without incurring commensurate expense. Also, public disclosure of the information would enable other nuclear utilities to utilize the information to meet NRC requirements for licensing documentation to extend RPI deviation limits and perform on-line calibration of the RPI channels without purchasing the right to use the information.

ENCLOSURE 2

COMMITMENTS

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.  
INDIAN POINT UNIT NO. 2  
DOCKET NO. 50-247  
AUGUST 2000

The following commitment was made in this correspondence.

1. Con Edison will submit a proposed amendment to the Technical Specifications by July 31, 2001, which will justify the removal of the cycle specific constraint for extended RPI deviation limits and on-line calibration of the RPI channels.

ATTACHMENT I

PROPOSED TECHNICAL SPECIFICATION CHANGES

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.  
INDIAN POINT UNIT NO. 2  
DOCKET NO. 50-247  
AUGUST 2000

- 3.10.4.3 Control bank insertion shall be further restricted if:
- a. The measured control rod worth of all rods, less the worth of the most reactive rod (worst case stuck rod), is less than the reactivity required to provide the design value of available shutdown,
  - b. A rod is inoperable (Specification 3.10.7).

3.10.4.4 Insertion limits do not apply during physics tests or during periodic exercise of individual rods. \*In addition, insertion limits do not apply when performing calibration of individual rod position indicator channels at or below a nominal 30% power not to exceed 35% power. However, the shutdown margin indicated in Figure 3.10-1 must be maintained except for the low-power physics test to measure control rod worth and shutdown margin. For this test the reactor may be critical with all but one control rod inserted.

\* For Cycle 15.

### 3.10.5 Rod Misalignment Limitations

- 3.10.5.1.1 If a control rod is misaligned from its bank demand position by more than  $\pm 12$  steps when indicated control rod position is less than or equal to 210 steps withdrawn, then realign the rod or determine the core peaking factors within 2 hours and apply Specification 3.10.2.
- 3.10.5.1.2 If a control rod is misaligned from its bank demand position by more than +17, -12 steps when indicated control rod position is greater than or equal to 211 steps withdrawn, then realign the rod or determine the core peaking factors within 2 hours and apply Specification 3.10.2.
- 3.10.5.2 If the restrictions of Specification 3.10.3 are determined not to apply and the core peaking factors have not been determined within two hours and the rod remains misaligned, the high reactor flux setpoint shall be reduced to 85% of its rated value.
- 3.10.5.3 If the misaligned control rod is not realigned within 8 hours, the rod shall be declared inoperable.

3.10.6 Inoperable Rod Position Indicator Channels

3.10.6.1 A rod position indicator channel shall be capable of determining control rod position as follows: for operation at or below 50% power, within  $\pm 24$  steps\*; for operation above this power, within  $\pm 12$  steps for indicated control rod position less than or equal to 210 steps withdrawn and +17, -12 steps for indicated control rod position greater than or equal to 211 steps withdrawn, or

- a. For operation between 50 percent and 100 percent of rating, the position of the control rod shall be checked indirectly by core instrumentation (excore detectors and/or movable incore detectors) every shift, or subsequent to rod motion exceeding 24 steps, whichever occurs first.
- b. During operation below 50 percent of rating, no special monitoring is required.

3.10.6.2 Not more than one rod position indicator channel per group nor two rod position indicator channels per bank shall be permitted to be inoperable at any time. During calibration a rod position indication channel is not considered to be inoperable.

3.10.6.3 If a control rod having a rod position indicator channel out of service is found to be misaligned from Specification 3.10.6.1a, above, then Specification 3.10.5 will be applied.

\* For Cycle 15.

3.10.7 Inoperable Rod Limitations

3.10.7.1 An inoperable rod is a rod which does not trip or which is declared inoperable under Specification 3.10.5, or which fails to meet the requirements of Specification 3.10.8.

3.10.7.2 Not more than one inoperable control rod shall be allowed any time the reactor is critical except during physics tests requiring intentional rod misalignment. Otherwise, the plant shall be brought to the hot shutdown condition.

3.10.7.3 If any rod has been declared inoperable, then the potential ejected rod worth and associated transient power distribution peaking factors shall be determined by analysis within 30 days. The analysis shall include due allowance for non-uniform fuel depletion in the neighborhood of the inoperable rod. If the

ATTACHMENT II

PROPOSED TECHNICAL SPECIFICATION MARKED-UP PAGES

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.  
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AUGUST 2000

On these marked-up pages from the current Tech Specs:

Additions are shown by ***bold italic***,

and

Deletions are shown by ~~double-strikethrough~~.

- 3.10.4.3 Control bank insertion shall be further restricted if:
- a. The measured control rod worth of all rods, less the worth of the most reactive rod (worst case stuck rod), is less than the reactivity required to provide the design value of available shutdown,
  - b. A rod is inoperable (Specification 3.10.7).

3.10.4.4 Insertion limits do not apply during physics tests or during periodic exercise of individual rods. \*In addition, insertion limits do not apply when performing calibration of individual rod position indicator channels at or below a nominal 30% power not to exceed 35% power. However, the shutdown margin indicated in Figure 3.10-1 must be maintained except for the low-power physics test to measure control rod worth and shutdown margin. For this test the reactor may be critical with all but one control rod inserted.

\* For Cycle ~~44~~ 15.

### 3.10.5 Rod Misalignment Limitations

3.10.5.1.1 If a control rod is misaligned from its bank demand position by more than  $\pm 12$  steps when indicated control rod position is less than or equal to 210 steps withdrawn, then realign the rod or determine the core peaking factors within 2 hours and apply Specification 3.10.2.

3.10.5.1.2 If a control rod is misaligned from its bank demand position by more than +17, -12 steps when indicated control rod position is greater than or equal to 211 steps withdrawn, then realign the rod or determine the core peaking factors within 2 hours and apply Specification 3.10.2.

3.10.5.2 If the restrictions of Specification 3.10.3 are determined not to apply and the core peaking factors have not been determined within two hours and the rod remains misaligned, the high reactor flux setpoint shall be reduced to 85% of its rated value.

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3.10.6.1 A rod position indicator channel shall be capable of determining control rod position as follows: for operation at or below 50% power, within  $\pm 24$  steps\*; for operation above this power, within  $\pm 12$  steps for indicated control rod position less than or equal to 210 steps withdrawn and +17, -12 steps for indicated control rod position greater than or equal to 211 steps withdrawn, or

- a. For operation between 50 percent and 100 percent of rating, the position of the control rod shall be checked indirectly by core instrumentation (excore detectors and/or movable incore detectors) every shift, or subsequent to rod motion exceeding 24 steps, whichever occurs first.
- b. During operation below 50 percent of rating, no special monitoring is required.

3.10.6.2 Not more than one rod position indicator channel per group nor two rod position indicator channels per bank shall be permitted to be inoperable at any time. During calibration a rod position indication channel is not considered to be inoperable.

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\* For Cycle ~~44~~ 15.

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3.10.7.1 An inoperable rod is a rod which does not trip or which is declared inoperable under Specification 3.10.5, or which fails to meet the requirements of Specification 3.10.8.

3.10.7.2 Not more than one inoperable control rod shall be allowed any time the reactor is critical except during physics tests requiring intentional rod misalignment. Otherwise, the plant shall be brought to the hot shutdown condition.

3.10.7.3 If any rod has been declared inoperable, then the potential ejected rod worth and associated transient power distribution peaking factors shall be determined by analysis within 30 days. The analysis shall include due allowance for non-uniform fuel depletion in the neighborhood of the inoperable rod. If the

ATTACHMENT III

SAFETY ASSESSMENT

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.  
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AUGUST 2000

## **SECTION I - Description of Changes**

In Section 3.10.6 allow extended RPI deviation limits for Cycle 15, and in Section 3.10.4 allow on-line calibration of the RPIs for Cycle 15.

## **SECTION II - Evaluation of Changes**

RPI deviations from the bank demand position are generally not actual misalignments, but rather are due to thermally induced instabilities in the instrumentation. To evaluate the potential impact on core peaking factors and global power distributions, however, it is assumed that a diverse matrix of potential indicated misalignments represent actual rod misalignments. The results of this evaluation are summarized in Tables 1 and 2 and Figures 1 through 4 in Attachments IV (Proprietary) and VI (Non-Proprietary).

To evaluate the potential impact of on-line calibration, a calibration exercise for each RCCA was simulated and the resulting impact on core peaking factors and global power distributions computed. For both the on-line calibration simulations and the misalignment evaluations, relative changes in core peaking factors and global power distributions were calculated. Thus any bias in the calculation methods is factored out in the normalization.

Selected comparisons of the Cycle 14 calculated core power distributions versus Cycle 14 flux maps are provided in Attachments V (Proprietary) and VII (Non-Proprietary).. The table and figures in Attachments V (Proprietary) and VII (Non-Proprietary) compare flux maps and NODE-P2 results for radial power over a variety of burnups in Indian Point Unit 2 Cycle 14. Two burnup cases around each of BOC, MOC, and EOC were selected for comparison. Flux maps at every burnup step were reviewed and show that these cases are representative of the rest of the cycle. No outliers were observed in the other burnup steps. Table 1 in Attachments V (Proprietary) and VII (Non-Proprietary) summarizes the comparison across all burnup steps and shows the results for previous cycles. The table shows that some differences between calculated and measured increased for Cycle 14 relative to previous cycles. This is a function of the higher energy core in Cycle 14 relative to previous cycles. Note that the increases are generally in the peripheral assemblies. Further, the evaluations described above are based on a relative calculation. Thus these differences have no significant effect on the results or conclusions.

### **SECTION III - No Significant Hazards Evaluation**

Consistent with the requirements of 10 CFR 50.92, the proposed changes do not involve a significant hazards consideration based on the information which is detailed in Attachments IV (Proprietary), V (Proprietary), VI (Non-Proprietary) and VII (Non-Proprietary).

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

No. Neither the probability nor the consequences of an accident previously analyzed is increased due to the proposed changes. All peaking factors will remain within the limits of the Technical Specifications. Both the shutdown margin and the axial flux difference will be maintained within the limits of the Technical Specifications. There will be no fuel damage due to the changes. All design and safety criteria will be met. Therefore, the proposed changes would not involve a significant increase in the probability or in the consequences of an accident previously evaluated.

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

No. The changes will not create the possibility of a new or different kind of accident. The calibration will be performed using plant procedures that have been reviewed and approved by Con Edison's Station Nuclear Safety Committee (SNSC). It has been shown that even with the new RPI deviation bands and on-line calibration, all power distribution limits will be met. Therefore, the proposed changes would not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

No. The proposed amendment does not involve a significant reduction in the margin of safety. There will be no change in the power distribution limits used in the design and safety analyses and the required shutdown margin will be maintained. It has been shown that there is no fuel failure as a result of this change. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

#### **SECTION IV - Impact Of Changes**

This change will not adversely impact the following:

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

The changes involve allowing extended RPI deviation limits in Section 3.10.6 for Cycle 15, and allowing on-line calibration of the RPIs in Section 3.10.4 for Cycle 15. This level of detail is not listed nor implied in the UFSAR. Therefore, there is no UFSAR impact. There are no new failure modes introduced by this change. There are no physical changes to the facility and the plant conditions for which the design basis accidents have been evaluated are still valid. The emergency procedures are unaffected. The operating procedures are involved due to changes in the procedures for instrument calibration. However, these changes will not affect safe operation of the plant.

#### **SECTION V - Conclusion**

Therefore, the proposed changes to the Technical Specifications do not involve a significant hazards consideration. In addition, the proposed change to the Technical Specifications has been reviewed by both the Station Nuclear Safety Committee (SNSC) and the Con Edison Nuclear Facility Safety Committee (NFSC). Both Committees concur that the proposed changes do not represent a significant hazards consideration.