

February 21, 1995

Mr. William J. Cahill, Jr.  
Executive Vice President - Nuclear Generation  
Power Authority of the State of New York  
123 Main Street  
White Plains, NY 10601

SUBJECT: ISSUANCE OF AMENDMENT FOR INDIAN POINT NUCLEAR GENERATING  
UNIT NO. 3 (TAC NO. M90970)

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 160 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated November 16, 1994.

The amendment revises TS Section 3.10.8 and the associated Bases, to reduce the maximum allowable control rod drop time from 2.4 to 1.8 seconds.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by

Nicola F. Conicella, Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures: 1. Amendment No. 160 to DPR-64  
2. Safety Evaluation

cc w/encls: See next page

DOCUMENT NAME: H:\IP3\IP390970.AMD

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICE	LA:PDI-1	E	PM:PDI-1	E	NRR:SRXB	OGC	D:PDI-1	N
NAME	CVogan		NConicella:cn		RJones		LMarsh	
DATE	01/24/95	2/15/95	01/24/95		01/24/95	02/20/95	02/21/95	

OFFICIAL RECORD COPY

9502270100 950221  
PDR ADOCK 05000286  
P PDR

21004

CP-1

DFU



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 21, 1995

Mr. William J. Cahill, Jr.  
Executive Vice President - Nuclear Generation  
Power Authority of the State of New York  
123 Main Street  
White Plains, NY 10601

SUBJECT: ISSUANCE OF AMENDMENT FOR INDIAN POINT NUCLEAR GENERATING  
UNIT NO. 3 (TAC NO. M90970)

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 160 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated November 16, 1994.

The amendment revises TS Section 3.10.8 and the associated Bases, to reduce the maximum allowable control rod drop time from 2.4 to 1.8 seconds.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

A handwritten signature in cursive script, appearing to read "N. F. Conicella".

Nicola F. Conicella, Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures: 1. Amendment No. 160 to DPR-64  
2. Safety Evaluation

cc w/encls: See next page

William J. Cahill, Jr.  
Power Authority of the State  
of New York

Indian Point Nuclear Generating  
Station Unit No. 3

cc:

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Resident Inspector  
Indian Point 3 Nuclear Power Plant  
U.S. Nuclear Regulatory Commission  
P.O. Box 337  
Buchanan, NY 10511

Mr. Gerald C. Goldstein  
Assistant General Counsel  
Power Authority of the State  
of New York  
1633 Broadway  
New York, NY 10019

Mr. Charles W. Jackson  
Manager, Nuclear Safety and  
Licensing  
Consolidated Edison Company  
of New York, Inc.  
Broadway and Bleakley Avenues  
Buchanan, NY 10511

Mr. Robert G. Schoenberger  
First Executive Vice President  
and Chief Operating Officer  
Power Authority of the State  
of New York  
123 Main Street  
White Plains, NY 10601

Mayor, Village of Buchanan  
236 Tate Avenue  
Buchanan, NY 10511

Mr. Leslie M. Hill  
Resident Manager  
Indian Point 3 Nuclear Power Plant  
P.O. Box 215  
Buchanan, NY 10511

Mr. Richard L. Patch, Director  
Quality Assurance  
Power Authority of the State  
of New York  
123 Main Street  
White Plains, NY 10601

Ms. Charlene D. Faison  
Director Nuclear Licensing  
Power Authority of the State  
of New York  
123 Main Street  
White Plains, NY 10601

Ms. Donna Ross  
New York State Energy Office  
2 Empire State Plaza  
16th Floor  
Albany, NY 12223

Charles Donaldson, Esquire  
Assistant Attorney General  
New York Department of Law  
120 Broadway  
New York, NY 10271

Union of Concerned Scientists  
Attn: Mr. Robert D. Pollard  
1616 P Street, NW, Suite 310  
Washington, DC 20036

DATED: February 21, 1995

AMENDMENT NO.160 TO FACILITY OPERATING LICENSE NO. DPR-64-INDIAN POINT UNIT 3

Docket File

PUBLIC

PDI-1 Reading

S. Varga, 14/E/4

J. Zwolinski, 14/H/3

L. Marsh

C. Vogan

N. Conicella

OGC

D. Hagan, T-4 A43

G. Hill (2), T-5 C3

C. Grimes, 11/E/22

ACRS (4)

OPA

OC/LFDCB

PD plant-specific file

C. Cowgill, Region I

R. Jones, SRXB, 0-8-E-21

cc: Plant Service list



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 160  
License No. DPR-64

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Power Authority of the State of New York (the licensee) dated November 16, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-64 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 160, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Director  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 21, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 160

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages

3.10-7

3.10-16

Insert Pages

3.10-7

3.10-16

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 fails to meet the requirements of 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, associated transient power distribution peaking factors and the accident listed in Table 3.10-1 shall be analyzed within 5 days, or the reactor brought to the hot shutdown condition using normal operating procedures. The analysis shall include due allowance for non-uniform fuel depletion in the neighborhood of the inoperable rod. If the analysis results in a more limiting hypothetical transient than the cases reported in the safety analysis, the plant power level shall be reduced to an analytically determined part power level which is consistent with the safety analysis.

3.10.8 Rod Drop Time

At operating temperature and full flow, the drop time to each control rod shall be no greater than 1.8 seconds from loss of stationary gripper coil voltage to dashpot entry.

The intent of the test to measure control rod worth and shutdown margin (Specification 3.10.4) is to measure the worth of all rods less the worth of the worst case for an assumed stuck rod, that is, the most reactive rod. The measurement would be anticipated as part of the initial startup program and infrequency over the life of the plant, to be associated primarily with determinations of special interest such as end of life cooldown, or startup of fuel cycles which deviate from normal equilibrium conditions in terms of fuel loading patterns and anticipated control bank worth. These measurements will augment the normal fuel cycle design calculations and place the knowledge of shutdown capability on a firm experimental as well as analytical basis.

The rod position indicator channel is sufficiently accurate to detect a rod  $\pm 7$  inches away from its demand position. An indicated misalignment less than 12 steps does not exceed the power peaking factor limits. If the rod position indicator channel is not operable, the operator will be fully aware of the inoperability of the channel, and special surveillance of core power tilt indications, using established procedures and relying on excore nuclear detectors, and/or moveable incore detectors, will be used to verify power distribution symmetry. These indirect measurements do not have the same resolution if the bank is near either end of the core, because a 12 step misalignment would have no effect on power distribution. Therefore, it is necessary to apply the indirect checks following significant rod motion.

One inoperable control rod is acceptable provided that the power distribution limits are met, trip shutdown capability is available, and provided the potential hypothetical ejection of the inoperable rod is not worse than the cases analyzed in the safety analysis report. The rod ejection accident for an isolated fully inserted rod will be worse if the residence time of the rod is long enough to cause significant non-uniform fuel depletion. The 5 day period is short compared with the time interval required to achieve a significant, non-uniform fuel depletion.

The assumed control rod drop time in the safety analysis is 2.40 seconds, consisting of 1.80 seconds for normal rod drop time plus a plant specific allowance of 0.60 seconds for a seismic event. The required control rod drop time in Section 3.10.8 is therefore consistent with that assumed in the safety analysis.

#### REFERENCE

1. WCAP-8576, "Augmented Startup and Cycle 1 Physics Program," August 1975
2. FSAR Appendix 14C
3. Letter from J.P. Bayne to S.A. Varga dated April 23, 1985, entitled "Proposed Technical Specifications Regarding the Cycle 4/5 Refueling."

3.10-16

Amendment No. 34, 82, 103, 112, 160



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 160 TO FACILITY OPERATING LICENSE NO. DPR-64  
POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3  
DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated November 16, 1994, the Power Authority of the State of New York (the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit No. 3 (IP3) Technical Specifications (TS). The requested changes would revise TS Section 3.10.8 and the associated Bases, to reduce the maximum allowable control rod drop time from 2.4 to 1.8 seconds.

2.0 EVALUATION

During operating cycles 1 through 4, the fuel assemblies used in the IP3 reactor were of the Westinghouse Low Parasitic (LOPAR) design. With cycle 5, IP3 started using, and has continued to use, assemblies of the Westinghouse Optimized Fuel Assemblies (OPA) design. To support this fuel design change, the assumed control rod drop time in the safety analysis, and the minimum TS rod drop time requirement were increased from 1.8 to 2.4 seconds. This increased time was to allow for the effects of smaller guide tubes in the OFA design which resulted in greater hydraulic resistance to falling control rods, thus, requiring longer drop times. However, the licensee noted that actual rod drop times have changed very little from the LOPAR design. This prompted the licensee to review the basis used by the fuel vendor in the development of the new rod drop time requirement.

The licensee indicated that the rod drop time provided by Westinghouse (2.4 seconds) includes two components. The first component is the actual rod drop (1.8 seconds). The second component is an allowance to account for a seismic event (0.6 seconds) and is specific for the Westinghouse 15x15 OFA fuel assemblies used at IP3. Previous to the licensee's review, this seismic allowance had been integral to the vendor's model and had not been specifically identified in the TS or other design documents. The significance of this finding is that the full length rod drop time test has been using the current TS requirement of 2.4 seconds as the test acceptance criteria without considering the effect of the seismic allowance. Since a seismic event cannot be simulated during the rod drop time test, the 0.6 seconds must be removed from the acceptance criteria to ensure that the plant is within its design basis.

The proposed change to TS Section 3.10.8 would read as follows:

At operating temperature and full flow, the drop time to each control rod shall be no greater than 1.8 seconds from loss of stationary gripper coil voltage to dashpot entry.

The associated TS Bases change would read as follows:

The assumed control rod drop time in the safety analysis is 2.40 seconds, consisting of 1.80 seconds for normal rod drop time plus a plant specific allowance of 0.60 seconds for a seismic event. The required control rod drop time in Section 3.10.8 is therefore consistent with that assumed in the safety analysis.

In order to verify the acceptability of past control rod drop time tests, the licensee reviewed the rod drop times for all tests performed since the OFA fuel design was first used. Of all the rod drop time tests conducted, the highest average rod drop time was 1.293 seconds and the highest single rod drop time was 1.39 seconds. Thus, all 53 control rods have consistently met the actual operability criteria of 1.8 seconds.

The NRC staff has reviewed the information presented by the licensee and concludes that the proposed change to the maximum control rod drop time is acceptable. This conclusion is based on the fact that the proposed change provides a limit that can actually be verified by test and this new limit is more conservative than that in the current TS. In addition, the NRC staff has reviewed the proposed TS Bases change and offers no objection.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 4203). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## **5.0 CONCLUSION**

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

**Principal Contributor: N. Conicella**

**Date:** February 21, 1995