

September 24, 1996

Mr. William J. Cahill, Jr.
Chief Nuclear Officer
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. M96087)

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 169 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3 (IP3). The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated June 21, 1996, as supplemented August 19, 1996, and August 21, 1996.

The amendment extends the surveillance interval for certain instruments from 18 to 24 months.

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:

George F. Wunder, 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. 169 to DPR-64
2. Safety Evaluation

cc w/encls: See next page

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DATE: September 24, 1996

ISSUANCE OF AMENDMENT NO. 169 TO FACILITY OPERATING LICENSE NO. DPR-64

Docket File

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

September 24, 1996

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Power Authority of the State
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The amendment extends the surveillance interval for certain instruments from 18 to 24 months.

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Sincerely,

A handwritten signature in cursive script, appearing to read "George F. Wunder".

George F. Wunder, 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. 169 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:

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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. 169
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 June 21, 1996, as supplemented August 19, 1996, and August 21, 1996, 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. 169, 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.



Alexander W. Dromerick, Acting 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: September 24, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 169

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages

Table 4.1-1 Sheet 2 of 6
Table 4.1-1 Sheet 4 of 6
Table 4.1-1 Sheet 5 of 6
Table 4.1-1 Sheet 6 of 6

Insert Pages

Table 4.1-1 Sheet 2 of 6
Table 4.1-1 Sheet 4 of 6
Table 4.1-1 Sheet 5 of 6
Table 4.1-1 Sheet 6 of 6

TABLE 4.1-1 (Sheet 2 of 6)

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
8. 6.9 KV Voltage	N.A.	18M	Q	Reactor protection circuits only
6.9 KV Frequency	N.A.	24M	Q	Reactor protection circuits only
9. Analog Rod Position	S	24M	M	
10. Steam Generator Level	S	24M	Q	
11. Residual Heat Removal Pump Flow	N.A.	24M	N.A.	
12. Boric Acid Tank Level	S	24M	N.A.	Bubbler tube rodded during calibration
13. Refueling Water Storage Tank Level				
a. Transmitter	W	18M	N.A.	Low level alarm
b. Indicating Switch	W	6M	N.A.	Low level alarm
14a. Containment Pressure - narrow range	S	24M	Q	High and High-High
14b. Containment Pressure - wide range	M	18M	N.A.	
15. Process and Area Radiation Monitoring:				
a. Fuel Storage Building Area Radiation Monitor (R-5)	D	24M	Q	
b. Vapor Containment Process Radiation Monitors (R-11 and R-12)	D	24M	Q	
c. Vapor Containment High Radiation Monitors (R-25 and R-26)	D	24M	Q	
d. Wide Range Plant Vent Gas Process Radiation Monitor (R-27)	D	24M	Q	

Amendment No. 8, 18, 65, 68, 74, 93, 107, 125, 137, 140, 144, 148, 150, 154, 169

TABLE 4.1-1 (Sheet 4 of 6)

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
25. Level Sensors in Turbine Building	N.A.	N.A.	24M	
26. Volume Control Tank Level	N.A.	24M	N.A.	
27. Boric Acid Makeup Flow Channel	N.A.	24M	N.A.	
28. Auxiliary Feedwater:				
a. Steam Generator Level	S	24M	Q	Low-Low
b. Undervoltage	N.A.	24M	24M	
c. Main Feedwater Pump Trip	N.A.	N.A.	24M	
29. Reactor Coolant System Subcooling Margin Monitor	D	18M****	N.A.	
30. PORV Position Indicator	N.A.	N.A.	24M	Limit Switch
31. PORV Position Indicator	D	24M	24M	Acoustic Monitor
32. Safety Valve Position Indicator	D	24M	24M	Acoustic Monitor
33. Auxiliary Feedwater Flow Rate	N.A.	18M	N.A.	
34. Plant Effluent Radioiodine/ Particulate Sampling	N.A.	N.A.	18M	Sample line common with monitor R-13
35. Loss of Power				
a. 480v Bus Undervoltage Relay	N.A.	24M	M	
b. 480v Bus Degraded Voltage Relay	N.A.	18M	M	
c. 480v Safeguards Bus Undervoltage Alarm	N.A.	24M	M	
36. Containment Hydrogen Monitors	D	Q	M	

Amendment No. 38, 44, 54, 63, 67, 74, 93, 125, 136, 137, 142, 144, 150, 168, 169

TABLE 4.1-1 (Sheet 5 of 6)

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
37. Core Exit Thermocouples	D	N.A.	18M	
38. Overpressure Protection System (OPS)	D	18M (1)	24M	1) Calibration frequency for OPS sensors (RCS pressure and temperature) is 24 months.
39. Reactor Trip Breakers	N.A.	N.A.	TM(1) 24M(2)	1) Independent operation of under-voltage and shunt trip attachments 2) Independent operation of under-voltage and shunt trip from Control Room manual push-button
40. Reactor Trip Bypass Breakers	N.A.	N.A.	(1) 24M(2) 24M(3)	1) Manual shunt trip prior to each use 2) Independent operation of under-voltage and shunt trip from Control Room manual push-button 3) Automatic undervoltage trip
41. Reactor Vessel Level Indication System (RVLIS)	D	18M*****	N.A.	
42. Ambient Temperature Sensors Within the Containment Building	D	24M	N.A.	
43. River Water Temperature # (installed)	S	18M	N.A.	
44. River Water Temperature # (portable)	S (1)	Q (2)	N.A.	1) Check against installed instrumentation or another portable device. 2) Calibrate within 30 days prior to use and quarterly thereafter.
45. Steam Line Flow	S	24M	Q	Engineered Safety Features circuits only

TABLE 4.1-1 (Sheet 6 of 6)

Table Notation

- * By means of the movable incore detector system
- ** Quarterly when reactor power is below the setpoint and prior to each startup if not done previous month.
- *** This surveillance requirement may be extended on a one time basis to no later than April 26, 1997.
- **** This surveillance requirement may be extended on a one time basis to no later than May 12, 1997.
- ***** This surveillance requirement may be extended on a one time basis to no later than May 14, 1997.
- # These requirements are applicable when specification 3.3.F.5 is in effect only.

- S - Each Shift
- W - Weekly
- P - Prior to each startup if not done previous week
- M - Monthly
- NA - Not Applicable
- Q - Quarterly
- D - Daily
- 18M - At least once per 18 months
- TM - At least every two months on a staggered test basis (i.e., one train per month)
- 24M - At least once per 24 months
- 6M - At least once per 6 months



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 169 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 July 12, 1996 as supplemented, August 19, 1996, and August 21, 1996, the Power Authority of the State of New York, the licensee for Indian Point 3 (IP3) Nuclear Power Plant, requested NRC's approval to implement amendments to its Operating License DPR-64, by incorporating modifications to the Technical Specifications (TSs). The proposed TS modifications will extend, on a one-time basis, the nominal surveillance-interval for reactor coolant system subcooling margin monitor (SMM) and reactor vessel level indication system (RVLIS) from 18 months to 24 months; it will also permanently extend from 18 months to 24 months the surveillance interval on containment high radiation monitor and the reactor coolant system overpressure protection system (OPS). The August 19, 1996, and August 21, 1996, submittals fell within the scope of and did not change the staff's initial proposed finding of no significant hazards consideration.

2.0 EVALUATION

Starting with cycle nine, which began in August 1992, IP3 began operating on 24-month cycles. This has resulted in a mismatch between TS required refueling-outage-frequency and frequency-of-calibration of instrumentation channels which were supposed to be calibrated during each refueling outage. Therefore, to avoid either a separate surveillance outage or an extended mid-cycle outage, the licensee has proposed a TS revision which extends instrument channel surveillance calibration intervals from 18 months to 24 months. In their submittal, the licensee stated that their evaluation of the impact of this extension has addressed all applicable factors including the instrument's past performance and its effect on safety system functions; the results of loop accuracy and setpoint calculations; and the effect on IP3 emergency operating procedures (EOPs), accident analysis, and the capability for safe shutdown of the plant.

The request for the proposed modification is based on guidance provided by the staff in Generic Letter (GL) 91-04. GL 91-04 provides guidance on how licensees should evaluate the effects of an extension to a 24-month surveillance interval on the safety of the plant and on the safety significance of the effect of such an extension. The licensee has performed a detailed engineering analyses of the affected systems and instrument-loops to

establish the basis for a 30-month (24 months + 25% additional surveillance frequency allowance) calibration frequency, to verify that the surveillance interval extensions have a small effect on plant safety, and to verify that the extended frequency of surveillance would not invalidate any assumptions in the plant licensing basis.

In GL 91-04, the NRC staff discussed seven issues pertaining to increasing the interval of instrument surveillance and identified specific actions that licensees should take to address each of these issues. The seven issues are related to collection of current/historical drift data and methodology to determine the projected 30-month drift with high confidence, revisiting instrument uncertainty/setpoint calculations to verify that all revised setpoints and drift values are acceptable for safe operation/safe shutdown/EOPs and do not invalidate licensing assumptions, and establishing an ongoing drift-monitoring-program to verify that the actual observed drifts are within their projected values. To address these issues, the licensee has evaluated instrument drift, determined instrument-loop uncertainties, updated setpoint calculations, and established an instrument-drift monitoring program at IP3.

In their submittal, the licensee stated that an assessment of instrument drift was performed using as-found and as-left calibration data from a minimum of the past four 18-month calibrations. Westinghouse setpoint methodology using statistical analyses was employed for the assessment and extrapolation of drift associated with the 24-month operating cycle. The licensee stated that this Westinghouse methodology for assessment of drift has been previously reviewed and approved by the staff.

The licensee described the following steps for drift-assessment:

- As-left/as-found data from past calibrations was converted into percentage-span-drift-values and was reviewed for mechanistic errors including obvious data recording errors, identifiable measurement and test equipment (M&TE) problems, and transmitters that were declared failed. The licensee stated that in addition to the identification of data that was flawed by mechanistic causes, statistical outlier techniques were applied on a limited basis to remove suspect data sets in the case when a large number of points in a set were determined to be flawed.
- Distribution of the data was examined and the sample data was extrapolated to the population using descriptive statistics and tolerance factors resulting in drift allowances at specified probability/confidence levels. The drift was established using a graded approach, whereby the probability and confidence level of an evaluation was varied in accordance with the safety significance of the function. This approach resulted in drift evaluations being performed from a 95/95 to a 75/75 probability/confidence level.

- The drift data was examined for the presence of time dependence using a combination of statistical and visual checks.
- If the drift data was considered not to be time dependent, the sample drift was applied as a 30-month drift value without any adjustment.
- If the drift data was considered to be time dependent, a linear regression was performed to predict a 30-month drift.

To answer questions raised by the staff in a meeting on August 15, 1996, the licensee provided a submittal dated August 21, 1996, in which they provided additional descriptions relating to information in their initial submittal. The staff reviewed the above methodology and drift assessment approach and finds it consistent with GL 91-04 guidance and, therefore, to be acceptable.

Using a graded approach based on the combinations of probability and confidence, the results of the drift assessment was implemented in the following three categories.

1. For those functions that provide reactor protection system/engineered safety feature actuation system (RPS/ESFAS) automatic actuation or critical control used to establish initial conditions for accident analysis, the drift evaluation was based on a 95% probability at 95% confidence level (95/95).

For OPS transmitters, 30-month drift was established using a 95/95 confidence level bases because the OPS function is used to protect the reactor coolant system against Low Temperature Overpressurization (LTOP) transients. An evaluation of the historical data indicated that drift was not time dependent.

2. For those functions that are used for indication in order to take EOP actions or initiate important nuclear steam supply system (NSSS) control, the drift evaluation was based on a 75% probability at a 75% confidence level (75/75).

For Wide Range Pressure Transmitters for SMM and Pressure and Level transmitters for RVLIS, a 30-month drift was established using a 75/75 confidence level bases. The staff expressed concern regarding the use of a 75/75 probability/confidence level for the uncertainty assumed for these two functions. Because of this concern, the licensee provided an additional submittal dated August 19, 1996, removed their request for a permanent surveillance-interval extension for the instruments for these two functions and substituted it with a request for a one-time change to a surveillance interval of 24 months not to exceed 30 months. The licensee committed that after the 24-month surveillance is complete, the supporting calculations will be revised, as necessary, to reflect the 18-month surveillance interval unless a request for a permanent 24-month surveillance interval has been approved prior to the end of the next refueling outage. The licensee performed an analysis using drift calculated on a 95/75 confidence level bases. This analysis indicated that for the SMM function, all of the acceptance criteria of the safety

analyses will be met with only insignificant changes to the margins. However, in the case of the RVLIS function, using a 95/75 confidence level drift basis resulted in a somewhat larger uncertainty. The licensee stated that even with this larger uncertainty, it is unlikely that RVLIS would provide false indication of inadequate core cooling (ICC). Westinghouse evaluated the consequences of an operator response to a false indication of ICC and concluded that no actions would be taken that would lead to violation of the plant design basis. Furthermore, RVLIS is also used in the IP3 EOPs for other confirmatory actions in conjunction with other plant parameters such as reactor cooling system subcooling. The EOPs do not require the use of RVLIS alone to dictate operator action. For those other uses of RVLIS, the sensitivity to RVLIS accuracy is relatively low.

The staff has reviewed the justification for a one-time surveillance interval extension for these two functions and concludes that appropriate justification is provided based on their safety significance, and the request is, therefore, acceptable.

3. For any functions that were considered to be miscellaneous control functions, a conservative engineering judgment evaluation was performed for drift without the use of a rigorous statistical approach to uncertainty.

For Containment High Radiation Monitors (R-25 and R-26), 30-month drift was established using a qualitative assessment approach to evaluate past performance of the radiation detectors. There are no control or equipment protective functions associated with these instrument channels nor are these channels credited in the safety analyses. However, R-25 and R-26 monitors are designed to provide information to plant operators during post-accident conditions and meet the guidance of Regulatory Guide 1.97 for post-accident monitoring instrumentation. The evaluation concluded that there were no discrepancies or channel errors that were the result of time dependent failures.

In their submittal, the licensee stated that the instrument loop accuracy calculations for setpoints were evaluated and revised using predicted drift established for the applicable instruments (instruments calibrated only during refueling outage) using the Westinghouse methodology. For the portion of the loop which is tested quarterly during an operating cycle, existing drift values (established for 90 days) were used and no additional drift allowance was added. For indicators, the vendor did not identify any significant time dependent uncertainties. Indicator operability is assured by channel checks performed each shift.

In their submittal, the licensee stated that a program to monitor future calibration data has been established in order to assess the effects of calibration interval extension on instrument drift and to confirm that future drift values are within the projected limits used for engineering calculations for setpoint and drift values. This program was described in a prior licensee submittal to extend TS surveillance intervals for the RPS.

Based on the above review, the NRC staff finds that the licensee has provided acceptable justification and analyses consistent with applicable provisions of GL 91-04 for the proposed TS surveillance interval extension to 24 months. Therefore, the staff concludes that the proposed TS modifications are acceptable in that the surveillance intervals can be extended to 24 months for the reactor coolant system subcooling margin monitor and reactor vessel level indication system on a one-time basis and permanently on containment high radiation monitor and reactor coolant system overpressure protection system.

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 (61 FR 42282). 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: S.V. Athavale

Date: September 24, 1996