November 2, 1994

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. M84550)

Dear Mr. Cahill:

The Commission has issued the enclosed Amendment No. 155 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 (TSs) in response to your application transmitted by letter dated September 16, 1992, as supplemented by letters dated June 27, 1994, and September 26, 1994.

The amendment revises TS Section 4.6.B (Emergency Power System Periodic Tests - Station Batteries) to incorporate changes which allow battery testing surveillance interval extensions to accommodate operation on a 24-month fuel cycle. These changes follow the guidance provided in Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," as applicable.

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. 155 to DPR-64
2. Safety Evaluation

cc w/encls: See next page

Distribution: See attached sheet

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

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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

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2. Safety Evaluation

cc w/encls: See next page

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

cc:

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

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

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

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

Mr. Peter Kokolakis
Director Nuclear Licensing - PWR
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

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

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

Mayor, Village of Buchanan
236 Tate Avenue
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

DATED: November 2, 1994

AMENDMENT NO. 155 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/A/4
L. Marsh
C. Vogan
N. Conicella
OGC
D. Hagan, 3302 MNBB
G. Hill (2), P1-22
C. Grimes, 11/F/23
ACRS (10)
OPA
OC/LFDCB
PD plant-specific file
C. Cowgill, Region I
C. Berlinger, 07/E/1
S. Saba, 07/E/1

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. 155
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 September 16, 1992, as supplemented June 27, 1994, and September 26, 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. 155, 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: November 2, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 155

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages	Insert Pages
4.6-2	4.6-2
4.6-3	4.6-3

4. Each diesel generator shall be inspected and maintained following the manufacturer's recommendations for this class of stand-by service.

The above tests will be considered satisfactory if the required minimum safeguards equipment operates as designed.

B. Station Batteries

1. Every month the voltage of each cell, the specific gravity and temperature of a pilot cell in each battery and each battery voltage shall be measured and recorded.

2. Every 3 months each battery shall be subjected to a 24 hour equalizing charge, and the specific gravity of each cell, the temperature reading of every fifth cell, the height of electrolyte, and the amount of water added shall be measured and recorded.

3. At least once per 24 months, during shutdown, each battery shall be subjected to a service test and a visual inspection of the plates.[1]

4. At least once per 60 months, during shutdown, each battery shall be subjected to a performance discharge (or modified performance discharge) test.[1,2] This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

5. Any battery which is demonstrated to have less than 90% of the manufacturer's rating or, whose capacity drops more than 10% of rated capacity from its previous performance discharge (or modified performance discharge) test, shall be subjected to a performance discharge (or modified performance discharge) test annually, during shutdown, until the battery is replaced.

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safeguards equipment will function automatically in the event of a loss of all normal 480v AC station service power. During the simulated loss of power/safety injection system test of specification 4.6.A.3, certain safeguards valves will be closed and made inoperable, to prevent Safety Injection flow to the core.

1. A modified performance discharge test may be performed in lieu of the battery service test every other 24 month operating cycle.

2. The first time a performance discharge (or modified performance discharge test) will be performed will be in refueling outage 10/11.

The testing frequency specified will be often enough to identify and correct any mechanical or electrical deficiency before it can result in a system failure. The fuel supply is continuously monitored. An abnormal condition in these systems would be signaled without having to place the diesel generators themselves on test.

Each diesel generator has a continuous rating of 1750 kw and a 2 hour rating of 1950 kw. Two diesels can power the minimum safeguards loads. To ensure that each diesel can operate at its 2 hour rating (as required by specification 4.6.A.2.), each diesel will be loaded to 1900-1950 kw and run for at least 105 minutes.

Station batteries will deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails. The periodic equalizing charge will ensure that the ampere-hour capability of the batteries is maintained.

The service and performance discharge test of each battery, together with the visual inspection of the plates, will assure the continued integrity of the batteries. The batteries are of the type that can be visually inspected, and this method of assuring the continued integrity of the battery is proven standard power plant practice.

The battery service test demonstrates the capability of the battery to meet the system design requirements. The Indian Point Unit 3 design duty cycle loads are determined by a LOCA concurrent with a loss of AC power.

The performance discharge test is a test of the constant current capacity of a battery, normally done in the as found condition after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

The modified battery performance discharge test is a composite test which addresses both the service test and performance discharge test requirements. It shall consist of a one minute peak load equivalent to that of the service test and a constant discharge current for the remainder of the test which envelopes the next highest load value of the service test. The purpose of the modified performance discharge test is to compare the capacity of the battery against the manufacturer's specified capacity and thereby determine when the battery is approaching the end of its life, as well as to demonstrate capability to meet system design requirements. Every other 24 month operating cycle, the modified performance discharge test may be performed in lieu of the battery service test required by Technical Specification 4.6.B.3.

The station batteries are required for plant operation, and performing the station battery service and performance discharge (or modified performance discharge) test require the reactor to be shutdown.

Reference
FSAR, Section 8.2

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 155 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 September 16, 1992, as supplemented June 27, 1994, and September 26, 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 (TSs). The requested changes would revise TS Section 4.6.B (Emergency Power System Periodic Tests - Station Batteries) to incorporate changes which would allow battery testing surveillance interval extensions to accommodate operation on a 24-month fuel cycle. These proposed changes included adding a requirement to perform a battery service test each refueling outage and adding a requirement to perform accelerated performance testing once a certain level of battery degradation is achieved. The June 27, 1994, and September 26, 1994, letters provided clarifying information and did not change the initial no significant hazards consideration determination. The licensee commenced operating on a 24-month fuel cycle, instead of the previous 18-month fuel cycle, with fuel cycle 9. Fuel cycle 9 started in August 1992; however, IP3 has been shutdown since February 1993 for a Performance Improvement Outage. These proposed changes follow the guidance provided in Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," as applicable.

2.0 EVALUATION

Emergency power for vital instruments, control, and emergency lighting is supplied by four 125 VDC station batteries. The DC power system is normally supplied through battery chargers with the batteries floating on the system (maintaining a full charge). Upon a loss of AC power, the entire DC load draws from the batteries.

Periodically, each battery is given an equalizing charge. This equalizing charge ensures that each battery cell is equally charged, thus ensuring that the ampere-hour capability of each battery is maintained. The licensee's current TS require that battery "load" tests and visual inspections of the plates are done during each refueling outage. The current TS does not define "load" test; however, the licensee has been interpreting this requirement as a performance or capacity test.

The licensee considered the following factors in evaluating the surveillance interval extension from 18 to 24 months:

- Does on-line testing adequately demonstrate operability or are failures only being detected during these refueling tests?

- Did past equipment performance have an effect on system safety functions?

The licensee reviewed battery surveillance test records from 1986 to 1990 and operating occurrence reports from 1985 to 1991. Based on this review, no cycle dependent or past performance problems with the station batteries were noted. In addition, station batteries No. 31 and No. 32 were replaced with new batteries during the 1992 refueling outage. The licensee stated that station battery operability problems can be adequately detected by on-line testing. On-line testing includes:

- Weekly visual inspections and voltage checks.

- Monthly checks of cell voltage, electrolyte level, electrolyte temperature, and pilot cell gravity.

- Quarterly charging test to equalize charge and monitor for battery deterioration.

As further justification for extending battery surveillance intervals to accommodate operation on a 24-month cycle, the licensee proposed the following:

- A new TS requirement would be added to conduct a battery service test at least once every 24 months.

- The TS requirement for conducting a battery "load" test would be replaced with a requirement to conduct a performance discharge (or modified performance discharge) test at least every 60 months. The modified performance discharge could be conducted in lieu of the service test every other 24-month cycle (since the modified performance test bounds the service test).

- A new TS requirement would be added to conduct an annual performance discharge (or modified performance discharge) test if a battery's capacity drops to less than 90 percent of the manufacturer's rating or whose capacity drops more than 10 percent from the previous discharge test.

The service test demonstrates the capability of the battery to meet the system design by satisfying the duty cycle requirements. The performance discharge test is a test of the constant current capacity the battery. The purpose of the performance discharge test is to compare the capacity of the battery against the manufacturer's specified capacity to determine when the battery is approaching the end of its useful life. The licensee described the modified

performance discharge test as a composite test which consists of a 1 minute peak load equivalent to that of the service test and a constant discharge for the remainder of the test which envelopes the next highest load value of the service test.

The licensee stated that the proposed battery tests exceed the requirements of ANSI/IEEE Standard 450-1987, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations." Specifically, IEEE Standard 450-1987 does not require that performance test include a 1 minute peak load equivalent to that of the service test, nor does it require a constant load equivalent to the next highest value for the duration of the test. Therefore, the licensee concluded that the proposed changes will provide a high level of confidence that station battery degradation will be observed prior to the battery becoming inoperable.

The licensee has evaluated the effect of the increase in the surveillance interval on safety and has concluded that the effect is small. The licensee has confirmed that historical plant maintenance and surveillance data do not invalidate this conclusion. In addition, the increase in the surveillance interval to accommodate a 24-month fuel cycle does not invalidate any assumption in the IP3 licensing basis.

The staff has reviewed the information presented by the licensee and concludes that the proposed changes do not have a significant effect on safety and follow the guidance of GL 91-04, as applicable. Therefore, the proposed changes are acceptable. In addition, the staff has reviewed the associated TS Bases changes and offers no objection.

The last capacity test of the station batteries was a performance discharge test conducted in October 1993. The next test the licensee intends to conduct is the service test which is a new test for the facility. This service test will be conducted during the next outage but no later than 24 months (+25 percent grace period) from the October 1993 capacity test. The next performance discharge (or modified performance discharge) will be conducted during the cycle 10/11 refueling outage. The staff has reviewed the licensee's proposed implementation schedule and finds it acceptable.

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 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 (57 FR 48825). 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: Nicola F. Conicella

Date: November 2, 1994