September 4, 19

Docket No. 50-219

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Mr. E. E. Fitzpatrick
Vice President and Director
Oyster Creek Nuclear Generating Station
Post Office Box 388
Forked River, New Jersey 08731

Dear Mr. Fitzpatrick:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 76042)

The Commission has issued the enclosed Amendment No. 142 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated February 20, 1990 as revised April 11, 1990 and as superseded by application dated July 24, 1990.

The amendment revises sections 4.7.B.3, 4.7.B.4.C, and Section 4.7 Basis, of the Technical Specifications. Specifically, the revision adds the Service Test to the Station and Diesel Batteries and revises the battery capacity and low voltage annunciators surveillance interval from 18 to 24 months.

A copy of the related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

/s/

Alexander W. Dromerick, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 142to DPR-16
2. Safety Evaluation

cc w/enclosures:
See next page

OFC	:PDI-4:LA	:PDI-4:PM	:PDI-4:D	:OGC	:	:
NAME	:SNorris	:ADromerick/Bah	:JStolz	:	:	:
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Document Name: AMEND 76042

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

GPU NUCLEAR CORPORATION

AND

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 142
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by GPU Nuclear Corporation, et al., (the licensee), dated February 20, 1990 as revised April 11, 1990 and superseded by application dated July 24, 1990 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's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 Provisional Operating License No. DPR-16 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.142 , are hereby incorporated in the license. GPU Nuclear Corporation shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 4, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 142

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove	Insert
Page 4.7-2	Page 4.7-2
--	Page 4.7-3
--	Page 4.7-4

c. The specific gravity, for each cell, is greater than or equal to 1.190 when corrected to 77°F. The electrolyte temperature of every fifth cell (Diesel; every fourth cell) shall be recorded for surveillance review.

3. At least once per 12 months, the diesel generator battery capacity shall be demonstrated to be able to supply the design duty loads (diesel start) during a battery service test.

4. At least once per 24 months during shutdown, the following tests will be performed to verify battery capacity.

   a. Battery capacity shall be demonstrated to be at least 80% of the manufacturers' rating when subjected to a battery capacity discharge test to be considered operable.

   b. Any battery which is demonstrated to have less than 85% of manufacturers ratings during a capacity discharge test shall be replaced during the subsequent refueling outage.

   c. Station battery capacity shall be demonstrated to be able to supply the design duty cycle loads during a battery service test.

   d. Battery low voltage annunciators are verified to pick up at 115 volts ± 1 volt and to reset at 125 volts ± 1 volt (Diesel; 112 volts ± 1 volt).

Basis: The biweekly tests of the diesel generators are primarily to check for failures and deterioration in the system since last use. The manufacturer has recommended the two week test interval, based on experience with many of their engines. One factor in determining this test interval (besides checking whether or not the engine starts and runs) is that the lubricating oil should be circulated through the engine approximately every two weeks. The diesels should be loaded to at least 20% of rated power until engine and generator temperatures have stabilized (about one hour). The minimum 20% load will prevent soot formation in the cylinders and injection nozzles. Operation up to an equilibrium temperature ensures that there is no over-heat problem. The tests also provide an engine and generator operating history to be compared with subsequent engine-generator test data to identify and correct any mechanical or electrical deficiency before it can result in a system failure.

The test during refueling outages is more comprehensive, including procedures that are most effectively conducted at that time. These include automatic actuation and functional capability tests, to verify that the generators can start and assume load in less than 20 seconds and testing of the diesel generator load sequence timers which provide protection from a possible diesel generator overload during LOCA conditions. Thorough inspections will detect any signs of wear long before failure.

The manufacturer's instructions for battery care and maintenance with regard to the floating charge, the equalizing charge, and the addition of water will be followed. In addition, written records will be maintained of the battery performance. Station batteries will deteriorate with time, but precipitous failure is unlikely. The station surveillance procedures follow the recommended maintenance and testing practices of IEEE STD. 450 which have demonstrated, through experience, the ability to provide positive indications of cell deterioration tendencies long before such tendencies cause cell irregularity or improper cell performance.

The battery service test is a special capacity test to demonstrate the capability of the battery to meet the system design requirements. The Oyster Creek design duty cycle loads are determined by a LOCA subsequent to a loss of AC power. The battery performance test is a capacity test on the battery to check it against the manufacturer's specified capacity and is used to determine when the battery has arrived at the end of its life.

IEEE Standard 450-1975 recommends battery performance testing once per five years. IEEE Standard 308-1974 recommends battery performance testing once per three years. The Oyster Creek Technical Specifications require a performance test once per two years. Both IEEE Standards recommend decreasing the surveillance interval to annually when battery service life exceeds 85%.

The diesel generator batteries are challenged every two weeks to perform the 20% load test. This effectively performs an uninstrumented battery service test. The biweekly diesel start, when combined with the annual battery service test, provides an extensive amount of data on battery performance characteristics. This test data negates the need to lower the battery performance test interval from biennially to annually.

The station batteries are required for plant operation, and performing the station battery performance test requires the reactor to be in COLD SHUTDOWN. The guidance in IEEE 450-1975 would result in 3 performance tests to reach 85% service life,

followed by 3 performance tests to complete battery life. The guidance in IEEE 308-1974 would result in 5 performance tests to reach 85% service life, followed by 3 performance tests to complete battery life. The Oyster Creek Technical Specifications require 8 performance tests to reach 85% service life, followed by 2 performance tests to complete battery life. The requirement which would result in a reactor shutdown for the sole purpose of performing a battery performance test during the last 15% of battery life cannot be justified to increase battery test performance from 2 to 3 in a 3-year period. Additionally, the increase in battery performance testing during the first 85% of battery service life would result in a greater level of battery reliability by identifying, and causing to be corrected, small anomalies in cell performance thereby reducing battery failure probability.

The requirement to replace any battery in the next refueling outage which demonstrates less than 85% of manufacturers capacity during a capacity discharge test provides additional assurance of continued battery operability.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.142

TO PROVISIONAL OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND
JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

INTRODUCTION

By letters dated February 20, 1990 and April 11, 1990 as superseded by letter dated July 24, 1990, GPU Nuclear requested a change to the Technical Specifications (TS) pertaining to the surveillance requirements of the Oyster Creek diesel generator and station batteries. The revised wording would be as follows:

4.7 B.3 At least once per 12 months, the diesel generator battery capacity shall be demonstrated to be able to supply the design duty loads (diesel start) during a battery service test.

4.7 B.4. At least once per 24 months during shutdown, the following tests will be performed to verify battery capacity.

a. Battery capacity shall be demonstrated to be at least 80% of the manufacturer's rating when subjected to a battery capacity discharge test to be considered operable.

b. Any battery which is demonstrated to have less than 85% of manufacturers ratings during a capacity discharge test shall be replaced during the subsequent refueling outage.

c. Station battery capacity shall be demonstrated to be able to supply the design duty cycle loads during a battery service test.

d. Battery low voltage annunciators are verified to pick up at 115 volts ± 1 volt and to reset at 125 volts ± 1 volt (Diesel; 112 volts ± 1 volt).

The Basis section of the TS would also be changed to reflect the changes in the battery tests.

EVALUATION:

The present TS 4.7 B.3 and 4.7 A.5 requires station battery and diesel generator battery capacity testing at least once per 18 months during shutdown and requires that the battery capacity be at least 80% of the manufacturers's rating. Verification of the battery low voltage announciators are also conducted on an 18 month cycle. The proposed TS would relax the testing interval from 18 months to 24 months, but would require replacement of the battery during the subsequent refueling outage if the battery capacity becomes less than 85% of the manufacturer's rating, or immediate replacement if the battery capacity becomes equal or less than 80% of the manufacturer's rating.

The proposed TS adds a requirement to conduct a station battery service test every 24 months and a diesel generator battery test every 12 months to demonstrate the batteries' capacity to supply the design duty cycle loads. This represents a significant addition to the present TS which does not require a service test for either battery.

The NRC staff concludes that the requirement to replace the battery during the subsequent refueling outage, once the battery capacity becomes less than 85% of the manufacturer's rating, appropriately compensates for the extension from 18 months to 24 months of battery capacity testing and low voltage annunciator verification. Also, the additional service tests that are required under the proposed TS should add significantly toward assuring that the battery can perform its safety function. We therefore find the proposed TS changes to be acceptable.

A proposed change to the Oyster Creek station battery and diesel generator battery Technical Specifications would add battery service tests and lengthen the interval between battery capacity tests and battery low voltage annunciator verification. However, if the battery capacity becomes less than 85% of the manufacturer's rating, the battery would be replaced during the next refueling outage. The staff has reviewed the proposed TS changes and concludes that they should result in an increase in the assurance of the batteries to perform their safety function. We therefore find the proposed TS changes to be acceptable.

ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have 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 staff has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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 this amendment.

CONCLUSION

The staff 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, and (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 nor to the health and safety of the public.

Dated: September 4, 1990

Principal Contributor:

A. Toalston