

February 21, 1991

Docket No. 50-219

Mr. J. J. Barton, Director  
Oyster Creek Nuclear Generating Station  
Post Office Box 388  
Forked River, New Jersey 08731

Dear Mr. Barton:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 79270)

<u>Distribution:</u>	
Docket File	DHagan
NRC & Local PDRs	GHill (4)
PD I-4 Plant File	WJones
SVarga	JCalvo
EGGreenman	WPEGg
SNorris	ACRS (10)
ADromerick	GPA/PA
OGC	OC/LFMB

The Commission has issued the enclosed Amendment No. 148 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station, in response to your application dated December 7, 1990.

The amendment would allow draining of the 15,000 gallon emergency diesel generator (EDG) fuel oil storage tank for the purpose of internal inspection during periods of cold shutdown or refueling. The revision would allow temporary connection of fuel oil tanker trucks to the EDG fuel oil fill station. This arrangement would bypass the fuel oil storage tank and supply fuel to the EDGs directly.

A copy of the related Safety Evaluation is also enclosed. Also enclosed is the Notice of Issuance which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

*151*

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. 148 to DPR-16
2. Safety Evaluation

cc w/enclosures:  
See next page

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Mr. J. J. Barton  
Oyster Creek Nuclear Generating Station

Oyster Creek Nuclear  
Generating Station

cc:

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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. 148  
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 December 7, 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. 148, 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*  
for 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: February 21, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 148

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

3.7-2  
3.7-3

Insert

3.7-2  
3.7-3  
3.7-4

not to exceed 7 days in any 30 day period if a startup transformer is out of service. None of the engineered safety feature equipment fed by the remaining transformer may be out of service.

2. The reactor may remain in operation for a period not to exceed 7 days if 125 VDC Motor Control Center DC-2 is out of service, provided the requirements of Specification 3.8 are met.

C. Standby Diesel Generators

1. The reactor shall not be made critical unless both diesel generators are operable and capable of feeding their designated 4160 volt buses.
2. If one diesel generator becomes inoperable during power operation, repairs shall be initiated immediately and the other diesel shall be operated at least one hour every 24 hours at greater than 20% rated power until repairs are completed. The reactor may remain in operation for a period not to exceed 7 days in any 30-day period if a diesel generator is out of service. During the repair period none of the engineered safety features normally fed by the operational diesel generator may be out of service or the reactor shall be placed in the cold shutdown condition.
3. If both diesel generators become inoperable during power operation, the reactor shall be placed in the cold shutdown condition.
4. For the diesel generators to be considered operable:
  - A) There shall be a minimum of 14,000 gallons of diesel fuel in the standby diesel generator fuel tank,

OR

  - B) To facilitate inspection, repair, or replacement of equipment which would require full or partial draining of the standby diesel generator fuel tank, the following conditions must be met:
    - 1) There shall be a minimum of 14,000 gallons of fuel oil contained in temporary tanker trucks, connected and aligned to the diesel generator fill station.

-AND-

- 2) The reactor cavity shall be flooded above elevation 117 feet with the spent fuel pool gates removed, or all reactor fuel shall be contained in the spent fuel pool with spent fuel pool gates installed.

AND

- 3) The plant shall be placed in a configuration in which the core spray system is not required to be operable.

**Bases:** The general objective is to assure an adequate supply of power with at least one active and one standby source of power available for operation of equipment required for a safe plant shutdown, to maintain the plant in a safe shutdown condition and to operate the required engineered safety feature equipment following an accident.

AC power for shutdown and operation of engineered safety feature equipment can be provided by any of four active (two 230 KV and two 34.5 KV lines) and either of two standby (two diesel generators) sources of power. Normally all six sources are available. However, to provide for maintenance and repair of equipment and still have redundancy of power sources the requirement of one active and one standby source of power was established. The plant's main generator is not given credit as a source since it is not available during shutdown.

The plant 125V DC system consists of three batteries and associated distribution system. Batteries B and C are designated as the safety related subsystems while battery A is designated as a non-safety related subsystem. Safety related loads are supplied by batteries B and C, each with two associated full capacity chargers. One charger on each battery is in service at all times with the second charger available in the event of charger failure. These chargers are active sources and supply the normal 125V DC requirements with the batteries and standby sources. (1)

In applying the minimum requirement of one active and one standby source of AC power, since both 230 KV lines are on the same set of towers, either one or both 230 KV lines are considered as a single active source.

The probability analysis in Appendix "L" of the FDSAR was based on one diesel and shows that even with only one diesel the probability of requiring engineered safety features at the same time as the second diesel fails is quite small. The analysis used information on peaking diesels when synchronization was required which is not the case for Oyster Creek. Also the daily test of the second diesel when one is temporarily out of service tends to improve the reliability as does the fact that synchronization is not required.

As indicated in Amendment 18 to the Licensing Application, there are numerous sources of diesel fuel which can be obtained within 6 to 12 hours and the heating boiler fuel in a 75,000 gallon tank on the site could also be used. As indicated in Amendment 32 of the Licensing Application and including the Security System loads, the load requirement for the loss of offsite power would require 12,410 gallons for a three day supply. For the case of loss of offsite power plus loss-of-coolant plus bus failure 9790 gallons would be required for a three day supply.

In the case of loss of offsite power plus loss-of-coolant with both diesel generators starting the load requirements (all equipment operating) shown there would not be three days' supply. However, not all of this load is required for three days and, after evaluation of the conditions, loads not required on the diesel will be curtailed. It is reasonable to expect that within 8 hours conditions can be evaluated and the following loads curtailed:

1. One Core Spray Pump
2. One Core Spray Booster Pump
3. One Control Rod Drive Pump
4. One Containment Spray Pump
5. One Emergency Service Water Pump

With these pieces of equipment taken off at 8 hours after the incident it would require a total consumption of 12,840 gallons for a three day supply. Therefore, a minimum technical specification requirement of 14,000 gallons of diesel fuel in the standby diesel generator fuel tank will exceed the engineered safety features operational requirement after an accident by approximately 9%.

During plant cold shutdown or refueling, it may be necessary to inspect, repair and replace the 15,000 gallon standby diesel generator fuel storage tank. This would require tank partial or full drain down. An alternate fuel supply configuration may be established which consists of temporary tanker trucks capable of containing 14,000 gallons. This configuration is capable of supporting continuous operation of both diesels for at least 3 days.

The temporary configuration is acceptable since a minimal power load would be required during and following a design basis condition of a loss of offsite power while the plant is in cold shutdown or refueling. Analysis shows that in the event of a tornado or seismic event which may cause a loss of offsite power and a temporary loss of the temporary EDG fuel oil supply, power can be restored before the consequences of previously analyzed conditions are exceeded.

**References:**

- (1) Letter, Ivan R. Finfrock, Jr. to the Director of Nuclear Reactor Regulation dated April 14, 1978.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 148

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 letter dated December 7, 1990, the licensee of Oyster Creek Nuclear Generating Station, GPU Nuclear Corporation, submitted a request for a Technical Specification (TS) change that would allow them to drain the 15,000 gallon emergency diesel generator (EDG) fuel oil storage tank for the purpose of inspection during the upcoming (13R) refueling outage. This TS change will also permit periodic inspection and/or repair as required during periods of cold shutdown or refueling. Draining the tank will cause the EDGs to become inoperable in violation of Technical Specification 3.7. For these reasons, the licensee is proposing that the Technical Specifications be revised to allow the temporary installation of tanker trucks with a capacity of not less than 14,000 gallons of fuel oil.

The tanker(s) would be connected by temporary flexible hosing to a tee and to the EDG fuel oil filling station. Valve alignment would allow a direct flow path from the tanker(s) to each set of EDG transfer pumps. The tanker trucks' fuel alignment up to and including the EDG filling station would not be seismically qualified or missile protected.

2.0 EVALUATION

The general objective of TS 3.7 is to assure an adequate supply of power with at least one active and one standby source of power available for operation of equipment required for a safe plant shutdown, to maintain the plant in a safe shutdown condition, and to operate the required engineered safety feature equipment following an accident. TS 3.7.C.4 states that for the EDGs to be considered operable there shall be a minimum of 14,000 gallons of diesel fuel in the EDG fuel storage tank. This required minimum of 14,000 gallons is based on a loss of offsite power event coincident with a loss of coolant accident (LOCA). This figure assumes an initial start of both diesel generators with a curtailing of loads not required after the first 8 hours of the event. The following loads would be shed: (1) one core spray pump, (2) one core spray booster pump, (3) one control rod drive pump, (4) one containment spray pump, and (5) one emergency service water pump. With these loads taken off at 8

hours after the incident a fuel oil supply of 12,840 gallons would be needed for a three day supply.

The function of the EDGs is to provide an onsite independent standby power source for essential bus sections 1C and 1D. These essential buses provide power to plant equipment, such as the spent fuel pool cooling and RBCCW systems, necessary to reach and maintain safe shutdown. Offsite power must be reestablished or an EDG fuel oil resupply must be established within the 3 day fuel limit in order to provide continued power to these essential buses.

The proposed change to TS 3.7 would only apply during periods of cold shutdown or refueling with the reactor cavity flooded above elevation 117 feet with the spent fuel pool gates removed, or with all fuel in the spent fuel pool and the spent fuel gates installed. In addition, the plant will be required to be placed in a configuration in which core spray system operability is not required. These requirements would ensure that either communication exists between the reactor cavity and the spent fuel pool with the reactor cavity flooded or that all fuel is in the spent fuel pool.

Since the tanker trucks and associated connections are not seismically or missile protected, it is possible that they may be lost during an earthquake or tornado. Under these conditions both onsite and offsite AC power may be lost. This would result in a loss of the spent fuel cooling system, the core spray system, the containment spray system, the emergency service water system and the RBCCW system. In addition, secondary containment will be degraded because of the unavailability of the standby gas treatment system. This would require the plant to take actions per TS 3.5.B.1.1 and place the plant in a configuration in which environmental releases cannot occur. The actions specified under 3.5.B.1.1 are as follows:

- (1) Cease fuel handling operations or activities which could reduce the shutdown margin (excluding reactor coolant temperature changes).
- (2) Cease all work on the reactor or its connected systems in the reactor building which could result in inadvertent releases of radioactive materials.
- (3) Cease all operations in, above, or around the spent fuel storage pool that could cause release of radioactive materials.

Loss of all AC power would also result in loss of power to the refueling bridge and the fuel hoist. In the event that a fuel bundle is in transit, the safety brake consists of a solenoid and pawl ratchet which will lock the fuel grapple in place preventing the bundle from dropping into the core or spent fuel pool. Both the fuel bridge and fuel hoist are designed so that they may be moved manually without power. Therefore, a bundle in transit could be placed into the spent fuel pool and lowered into a rack following a loss of power.

With the plant configuration as stated above, the limiting safety concern is fuel decay heatup. FSAR Chapter 9.1.3.3 indicates that if all fuel pool cooling is lost with the maximum abnormal heat load core unloaded in the spent fuel pool and an initial pool water temperature of 90°F it would take 14.5 hours for the pool water to reach boiling temperature. It would take an additional 83.5 hours before the top of the storage racks would begin to be uncovered.

The licensee states that the oil truck manifold can be repaired and/or a fuel oil tanker obtained within 6 to 12 hours following an event. Chapter 9.5.4 of the FSAR, Diesel Generator Fuel Oil Storage and Transfer System, lists towns and cities within a 50 mile radius from which fuel oil can be obtained and verifies the 6 to 12 hour time for procurement of replacement fuel oil. All replacement parts for the tanker trucks' fuel alignment up to and including the EDG filling station are located on site. The pipes and connections have threaded fittings. This eliminates the need for welding and allows repairs to be made quickly. The licensee estimates that any repairs to the fuel alignment could be made within several hours.

Based on the above evaluation, the staff finds the licensee's proposal to use tanker trucks as a temporary means of supplying fuel oil to the EDGs to facilitate inspection and possible replacement of the 15,000 gallon diesel generator fuel oil storage tank acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on January 23, 1991 (56 FR 2542). Accordingly based upon the environmental assessment, we have determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

### 4.0 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.

Principal Contributor: W. Pegg

Dated: February 21, 1991

UNITED STATES NUCLEAR REGULATORY COMMISSIONGPU NUCLEAR CORPORATIONDOCKET NO. 50-219NOTICE OF ISSUANCE OF AMENDMENT TOPROVISIONAL OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 148 to Provisional Operating License No. DPR-16 issued to GPU Nuclear Corporation (the licensee), which revised the Technical Specifications for operation of the Oyster Creek Nuclear Generating Station located in Ocean County, New Jersey. The amendment is effective as of the date of issuance.

The amendment modified the Technical Specifications to allow draining of the 15,000 gallon emergency diesel generator (EDG) fuel oil storage tank for the purpose of internal inspection during periods of cold shutdown or refueling. The revision would allow temporary connection of fuel oil tanker trucks to the EDG fuel oil fill station. This arrangement would bypass the fuel oil storage tank and supply fuel to the EDGs directly.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.


Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on December 27, 1990 (55 FR 53222). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated December 7, 1990, (2) Amendment No. 148 to License No. DPR-16, (3) the Commission's related Safety Evaluation, and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street N.W., Washington, D.C. and at the local public document room, Ocean County Library, Reference Department, 101 Washington Street, Toms River, New Jersey 08753. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects - I/II.

Dated at Rockville, Maryland this 21st day of February 1991.

FOR THE NUCLEAR REGULATORY COMMISSION

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