

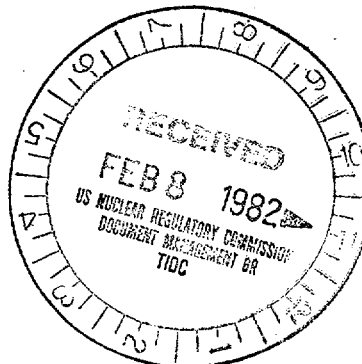


UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

February 3, 1982

Docket No. 50-219  
LS05-82-02-026

Mr. P. B. Fiedler  
Vice President  
Jersey Central Power & Light Company  
Post Office Box 388  
Forked River, New Jersey 08731



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BScharf  
L. Schneider

Dear Mr. Fiedler:

SUBJECT: DIESEL GENERATORS

The Commission has issued the enclosed Amendment No. 60 to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment consists of changes to the Technical Specifications in response to your applications dated October 19 and 26, 1981.

This amendment authorizes changes in the Diesel Generator Load Sequence Timers for the Service Water Pump and the Closed Cooling Water Pump, and the requirements for protective instrumentation. This amendment also authorizes a change to the Diesel Generator inspection schedule to be performed at least once per 18 months during shutdown, rather than annually.

Copies of our related Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

*Dennis M. Crutchfield*  
Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing

Enclosures:

- 1. Amendment No. 60 to License No. DPR-16
- 2. Safety Evaluation
- 3. Notice of Issuance

cc w/enclosures:  
See next page

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PDR

*no legal objection to  
FR Notice  
see front  
only*

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SURNAME	HSmith; cc	JLombardo	<i>[Signature]</i>	DCrutchfield	GLainas		
DATE	2/2/82	2/2/82	2/3/82	2/9/82	2/3/82		



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See next page

Mr. P. B. Fiedler

- 2 -

February 3, 1982

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 AMENDED PROVISIONAL OPERATING LICENSE

Amendment No. 60  
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The applications for amendment by GPU Nuclear Corporation and Jersey Central Power and Light Company (the licensees) dated October 19 and 26, 1981, comply 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 applications, 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. 6Q, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 3, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 60

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Replace the following pages\* of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by captioned amendment number and contain vertical lines indicating the area of change.

<u>REMOVE</u>	<u>INSERT</u>
3.1-6a	3.1-6a
3.1-11a	3.1-11a
3.1-12a	3.1-13
---	3.1-14
3.7-3	3.7-3
4.7-1	4.7-1
4.7-2	4.7-2

\* Pages 6-1a, 6-16, 6-10 and 6-2 issued by Amendment No. 59 dated December 29, 1981 should be renumbered 6-2 through 6-5, respectively.

and the requirements of Table 3.1.1 are met. In order to maintain reliability of core monitoring in that quadrant where an APRM is inoperable, it is permitted to remove the operable APRM from service for calibration and/or test provided that the same core protection is maintained by alternate means.

In the rare event that Travelling In-core Probes (TIPs) are used to meet the requirements 3.1.B or 3.1.C, the licensee may perform an analysis of substitute LPRM inputs to the APRM system using spare (non-APRM input) LPRM detectors and change the APRM system as permitted by 10 CFR 50.59.

Under assumed loss-of-coolant accident conditions and under certain loss of offsite power conditions with no assumed loss-of-coolant accident, it is inadvisable to allow the simultaneous starting of emergency core cooling and heavy load auxiliary systems in order to minimize the voltage drop across the emergency buses and to protect against a potential diesel generator overload. The diesel generator load sequence time delay relays provide this protective function and are set accordingly. The repetitive accuracy rating of the timer mechanism as well as parametric analyses to evaluate the maximum acceptable tolerances for the diesel loading sequence timers were considered in the establishment of the appropriate load sequencing.

Manual actuation can be accomplished by the operator and is considered appropriate only when the automatic load sequencing has been completed. This will prevent simultaneous starting of heavy load auxiliary systems and protect against the potential for diesel generator overload.

Also, the Closed Cooling Water and Service Water pump circuit breakers will trip whenever a loss-of-coolant accident condition exists. This is justified by Amendment 42 of the Licensing Application which determined that these pumps were not required during this accident condition.

Reference:

(1)

NEDO-10189 "An Analysis of Functional Common Mode Failures in GE BWR Protection and Control Instrumentation", L. G. Frederick, et. al., July 1970.

Change No. 6  
Amendment No. 9, 15, 44, 60

TABLE 3.1.1 PROTECTIVE INSTRUMENTATION REQUIREMENTS (cont'd)

Function	Trip Setting	Reactor Modes in Which Function Must Be Operable				Min. No. of Operable or Operating (Tripped) Trip Systems	Min. No. of Operable Instrument Channels Per Operable Trip Systems	Action Required*
		Shutdown	Refuel	Startup	Run			
<u>Diesel Generator Load Sequence Timers (Cont'd)</u>								
2. CRD pump	60 sec $\pm$ 15%	X	X	X	X	2(m)	1(n)	Consider the pump inoperable and comply with Spec. 3.4.D (See Note q).
3. Emerg. Service Water Pump (r)	45 sec. $\pm$ 15%	X	X	X	X	2(m)	1(n)	Consider the loop inoperable and comply with Spec. 3.4.C (See Note q).
4. Service Water Pump (aa)	120 sec $\pm$ 15% 10 sec $\pm$ 15%	(SK1A) (SK2A) X (SK7A) (SK8A)	X	X	X	2(o)	2(p)	Consider the pump inoperable and comply within 7 days (See Note q).
5. Closed Cooling Water Pump (bb)	166 sec $\pm$ 15%	X	X	X	X	2(m)	1(n)	Consider the pump inoperable and comply within 7 days (See Note q).



TABLE 3.1.1 (Cont'd)

- i. The interlock is not required during the start-up test program and demonstration of plant electrical output but shall be provided following these actions.
- j. Not required below 40% of turbine rated steam flow.
- k. All four (4) drywell pressure instrument channels may be made inoperable during the integrated primary containment leakage rate test (See Specification 4.5), provided that the plant is in the cold shutdown condition and that no work is performed on the reactor or its connected systems which could result in lowering the reactor water level to less than 4'8" above the top of the active fuel.
- l. Bypassed in IRM Ranges 8, 9, & 10.
- m. There is one time delay relay associated with each of two pumps.
- n. One time delay relay per pump must be operable.
- o. There are two time delay relays associated with each of two pumps. One timer per pump is for sequence starting (SK1A, SK2A) and one timer per pump is for tripping the pump circuit breaker (SK7A, SK8A).
- p. Two time delay relays per pump must be operable.
- q. Manual initiation of affected component can be accomplished after the automatic load sequencing is completed.
- r. Time delay starts after closing of containment spray pump circuit breaker.
- s. These functions not required to be operable with the reactor temperature less than 212°F and the vessel head removed or vented.
- t. These functions may be operable or bypassed when corresponding portions in the same core spray system logic train are inoperable per Specification 3.4.A.
- u. These functions not required to be operable when primary containment integrity is not required to be maintained.

TABLE 3.1.1 (Cont'd)

- v. These functions not required to be operable when the ADS is not required to be operable.
- w. These functions must be operable only when irradiated fuel is in the fuel pool or reactor vessel and secondary containment integrity is required per specification 3.5.B.
- y. The number of operable channels may be reduced to 2 per Specification 3.9-E and F.
- z. (LEFT INTENTIONALLY BLANK)
- aa. Pump circuit breakers will be tripped in 10 seconds  $\pm$  15% during a LOCA by relays SK7A and SK8A.
- bb. Pump circuit breakers will trip instantaneously during a LOCA.

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. This 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. Since the requirements for operation of the required engineered safety features after an accident or for safe shutdown can be supplied by one diesel generator the specification requirement for 14,500 gallons of diesel fuel can operate one diesel at a load of 2640 KW for 3 days. 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.

References:

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

4.7 AUXILIARY ELECTRICAL POWER

Applicability: Applies to surveillance requirements of the auxiliary electrical supply.

Objective: To verify the availability of the auxiliary electrical supply.

Specification: A. Diesel Generator

1. Each diesel generator shall be started and loaded to not less than 20% rated power every two weeks.
2. The two diesel generators shall be automatically actuated and functionally tested during each refueling outage. This shall include testing of the diesel generator load sequence timers listed in Table 3.1.1.
3. Each diesel generator shall be given a thorough inspection at least once per 18 months during shutdown.
4. The diesel generators' fuel supply shall be checked following the above tests.
5. The diesel generators' starting batteries shall be tested and monitored the same as the station batteries, Specification 4.7.b.

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.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOR OYSTER CREEK NUCLEAR GENERATING STATION

SUPPORTING AMENDMENT NO. 60 TO PROVISIONAL OPERATING LICENSE NO. DPR-16

GPU NUCLEAR CORPORATION AND

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

1.0 INTRODUCTION

By letter dated October 19, 1981 GPU Nuclear Corporation and Jersey Central Power & Light Company (the licensees) requested an amendment to Provisional Operating License No. DPR-16 for the Oyster Creek Nuclear Generating Station. This amendment would authorize changes in the Diesel Generator Load Sequence Timers for the Service Water Pump and Closed Cooling Water Pump, and the requirements for protective instrumentation.

By letter dated October 26, 1981 the licensees also requested a change to the Diesel Generator inspection schedule to be performed at least once per 18 months during shutdown, rather than annually. In addition the basis for Section 4.7 that appears on page 4.7-1 and is duplicated on page 4.7-2 has been removed.

2.0 DISCUSSION AND EVALUATION

Our safety evaluation of Amendment 42 to the Licensing Application found it acceptable to automatically trip the RBCCW pump and SW pump during LOCA. A safety injection (SI) signal trips the RBCCW pump instantaneously while the SW pump trip is delayed for 10 sec + 15% after an SI signal. The delayed trip is accomplished by means of a D. C. relay powered by the same class 1E battery which supplies the control power to the starting relay of this pump. These relays will have the design and surveillance requirements same as other load sequence times of the diesel generator listed in the licensee's technical specification. The load shedding feature and long time delay (120 sec) in restarting the service water pump ensures that the proposed time delay (10 sec + 15%) for tripping the SW pump after an SI signal shall not cause the pump to be inadvertently connected to the diesel generator.

The proposed technical specification changes include the revised consumption of diesel generator fuel oil for the three days (72 hours) requirements. The revised figures are due to addition of Security System Loads and removal of RBCCW pump and SW pump from the load requirement contained in Amendment 42 of the licensing application. The revised figures of fuel consumption, for various previously analyzed scenarios, are still within the specification requirement of the licensee's facility for 3 days consumption.

Based on our evaluation, we conclude that the proposed changes to the technical specification (table 3.1.1, application section 3.1 and 3.7) are acceptable.

A thorough inspection of the diesel generators involves a rigorous check up of all its components in accordance with the manufacturer's recommendations. This necessitates taking the diesel generator out of service for a possible extended period of time. During plant operation, taking one diesel generator out for inspection purposes, will curtail its availability when required for safety.

The proposed interval of at least once per 18 months, during shutdown, enhances the reliability and ensures availability of the diesel generator when required during plant operation. The proposed time interval is in accordance with the standard technical specification requirements of boiling water reactors and thus provides added assurance of diesel generator availability during power operation.

Based on our evaluation, we conclude that the proposed changes to the technical specification (page 4.7-1 and 4.7-2) are acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

### 4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: February 3, 1982

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-219GPU NUCLEAR CORPORATION ANDJERSEY CENTRAL POWER & LIGHT COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 60 to Provisional Operating License No. DPR-16, issued to GPU Nuclear Corporation and Jersey Central Power & Light Company (the licensees), which revised the Technical Specifications for operation of the Oyster Creek Nuclear Generating Station (the facility) located in Ocean County, New Jersey. The amendment is effective as of its date of issuance.

The amendment authorizes changes in the Diesel Generator Load Sequence Timers for the Service Water Pump and the Closed Cooling Water Pump, and the requirements for protective instrumentation. The amendment also authorizes a change to the Diesel Generator inspection schedule to be performed at least once per 18 months during shutdown, rather than annually.

The applications for the amendment comply 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. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.



- 2 -

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the applications for amendment dated October 19 and 26, 1981, (2) Amendment No. 60 to License No. DPR-16, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and the Local Public Document Room, 101 Washington Street, Toms River, New Jersey 08753. A single copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 3rd day of February, 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

*Dennis M. Crutchfield*  
Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
Division of Licensing