



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

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

OYSTER CREEK NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 43  
License No. DPR-15

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Jersey Central Power & Light Company (the licensee) dated November 16, 1979, 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.

1843 023

8001310 060

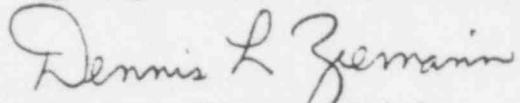
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Provisional Operating License No. DPR-16 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 43, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Dennis L. Ziemann, Chief  
Operating Reactors Branch #2  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: January 4, 1980

1843 024

ATTACHMENT TO LICENSE AMENDMENT NO. 43

PROVISIONAL OPERATING LICENSE NO. DPR-16

DOCKET NO. 50-219

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain vertical lines indicating the areas of change.

PAGES

3.9-1

3.9-2

3.9-3

4.9-1

4.9-2

1843 025

Applicability: Applies to fuel handling operations during refueling.

Objective: To assure that criticality does not occur during refueling.

Specification: A. Fuel shall not be loaded into a reactor core cell unless the control rod in that core cell is fully inserted.

B. During core alterations the reactor mode switch shall be locked in the REFUEL position.

C. The refueling interlocks shall be operable with the fuel grapple hoist loaded switch set at  $\leq 485$  lb. during the fuel handling operations with the head off the reactor vessel. If the frame-mounted auxiliary hoist, the trolley-mounted auxiliary hoist or the service platform hoist is to be used for handling fuel with the head off the reactor vessel the load limit switch on the hoist to be used shall be set at  $\leq 400$  lb.

D. During core alterations the source range monitor nearest the alteration shall be operable.

E. Removal of one control rod or rod drive mechanism may be performed provided that all the following specifications are satisfied.

1. The reactor mode switch is locked in the refuel position.

2. At least two (2) source range monitor (SRM) channels shall be operable and inserted to the normal operation level. One of the operable SRM channel detectors shall be located in the core quadrant where the control rod is being removed and one shall be located in an adjacent quadrant.

**POOR ORIGINAL**

F. Removal of any number of control rods or rod drive mechanisms may be performed provided all the following specifications are satisfied:

1. The reactor mode switch is locked in the refuel position and all refueling interlocks are operable as required in Specification 3.9.C. The refueling interlocks associated with the control rods being withdrawn may be bypassed as required after the fuel assemblies have been removed from the core cell surrounding the control rods as specified in 4, below.

2. At least two (2) source range monitor (SRM) channels shall be operable and inserted to the normal operation level. One of the operable SRM channel detectors shall be located in the core quadrant where a control rod is being removed and one shall be located in an adjacent quadrant.

3. All other control rods are fully inserted with the exception of one rod which may be partially withdrawn not more than two notches to perform refueling interlock surveillance.

4. The four fuel assemblies are removed from the core cell surrounding each control rod or rod drive mechanism to be removed.

5. The core is subcritical by at least  $0.25\% \Delta k$ , plus equivalent reactivity for the effect of any  $B_4C$  settling in inverted tubes present in the core, with the most reactive remaining control rod withdrawn.

6. An evaluation will be conducted for each refuel/reload to ensure that actual core criticality for the proposed order of defueling and refueling is bounded by previous analysis performed to support such defueling and refueling activities, otherwise a new analysis shall be performed.

The new analysis must show that sufficient conservatism exists for the proposed order of defueling and refueling before such operation shall be allowed to proceed.

G. With any of the above requirements not met, cease core alterations or control rod removal as appropriate, and initiate action to satisfy the above requirements.

#### BASIS:

During refueling operations, the reactivity potential of the core is being altered. It is necessary to require certain interlocks and restrict certain refueling procedures such that there is assurance that inadvertent criticality does not occur.

Addition of large amounts of reactivity to the core is prevented by operating procedures, which are in turn backed up by refueling interlocks (1) on rod withdrawal and movement of the refueling platform. When the mode switch is in the "Refuel" position, interlocks prevent the refueling platform from being moved over the core if a control rod is withdrawn and fuel is on a hoist. Likewise, if the refueling platform is over the core with fuel on a hoist control rod motion is blocked by the interlocks. With the mode switch in the refuel position only one control rod can be withdrawn (1,2).

The one rod withdrawal interlock may be bypassed in order to allow multiple control rod removal for repair, modifications, or core

1843 027

unloading. The requirements for simultaneous removal of more than one Control rod are more stringent than the requirements for removal of a single control rod, since in the latter case Specification 3.2.A assures that the core will remain subcritical.

Fuel handling is normally conducted with the fuel grapple hoist. The total load on this hoist when the interlock is required consists of the weight of the fuel grapple and the fuel assembly. This total is approximately 773 lbs. in the extended position in comparison to the load limit of 485 lbs. Provisions have also been made to allow fuel handling with either of the three auxiliary hoists and still maintain the refueling interlocks. The 400 lb load trip setting on these hoists is adequate to trip the interlock when one of the more than 600 lb. fuel bundles is being handled.

The source range monitors provide neutron flux monitoring capabilities with the reactor is in the refueling and shutdown modes (3). Specification 3.9.D assures that the neutron flux is monitored as close as possible to the location where fuel or controls are being moved. Specifications 3.9.E and F require the operability of at least two source range monitors when control rods are to be removed.

REFERENCES:

- (1) FDSAR, Volume I, Section VII-7.2.5
- (2) FDSAR, Volume I, Section XIII-2.2
- (3) FDSAR, Volume I, Sections VII-4.2.2 and VII-4.3.1

POOR ORIGINAL

1843 028

#### 4.9 REFUELING

Applicability: Applies to the periodic testing of those interlocks and instruments used during refueling.

Objective: To verify the operability of instrumentation and interlocks in use during refueling.

Specification: A. The refueling interlocks shall be tested prior to any fuel handling with the head off the reactor vessel, at weekly intervals thereafter until no longer required and following any repair work associated with the interlocks.

B. Prior to beginning any core alterations, the source range monitors (SRMs) shall be calibrated. Thereafter, the SRM's will be checked daily, tested monthly and calibrated every 3 months until no longer required.

C. Within four (4) hours prior to the start of control rod removal pursuant to Specification 3.9.E verify:

1. That the reactor mode switch is locked in the refuel position and that the one rod out refueling interlock is operable.

2. That two (2) SRM channels, one in the core quadrant where the control rod is being removed and one in an adjacent quadrant, are operable and inserted to the normal operation level.

D. Verify within four (4) hours prior to the start of control rod removal pursuant to Specification 3.9.F and at least once per 24 hours thereafter, until replacement of all control rods or rod drive mechanisms and all control rods are fully inserted that:

1. the reactor mode switch is locked in the refuel position and the one rod out refueling interlock is operable.

2. Two (2) SRM channels, one in the core quadrant where a control rod is being removed and one in an adjacent quadrant, are operable and fully inserted.

3. All control rods not removed are fully inserted with the exception of one rod which may be partially withdrawn not more than two notches to perform refueling interlock surveillance.

4. The four fuel assemblies surrounding each control rod or rod drive mechanism being removed or maintained at the same time are removed from the core cell.

1843 029

- E. Verify prior to the start of removal of control rods pursuant to Specification 3.9.F that Specification 3.9.F.5 will be met.
- F. Following replacement of a control rod or rod drive mechanism removed in accordance with Specification 3.9.F, prior to inserting fuel in the control cell, verify that the bypassed refueling interlocks associated with that rod have been restored and that the control rod is fully inserted.

Basis:

The refueling interlocks (1) are required only when fuel is being handled and the head is off the reactor vessel. A test of these interlocks prior to the time when they are needed is sufficient to ensure that the interlocks are operable. The testing frequency for the refueling interlocks is based upon engineering judgment and the fact that the refueling interlocks are a backup for refueling procedures.

The SRM's (2) provide neutron monitoring capability during core alterations. A calibration using external testing equipment to calibrate the signal conditioning equipment prior to use is sufficient to ensure operability. The frequencies of testing, using internally generated test signals, and recalibration, if the SRM's are required for an extended period of time, are in agreement with other instruments of this type which are presented in Specification 4.1.

The surveillance requirements for control rod removal assure that the requirements of Specification 3.9 are met prior to initiating control rod removal and at appropriate intervals thereafter.

References: (1) FDSAR, Volume I, Section VII-7-2.5  
(2) FDSAR, Volume I, Sections VII-4.2.2 and VII-4-5.1

1843 030