

DEC 20 1968

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D. Nussbaumer

Docket No. 50-219

Jersey Central Power & Light Company
Madison Avenue at Punch Bowl Road
Morristown, New Jersey 07960

Attention: Mr. John E. Logan
Vice President

Gentlemen:

The Advisory Committee on Reactor Safeguards has reviewed your application for operation of the Oyster Creek Nuclear Power Plant Unit No. 1 and has reported to the Commission its belief that the Oyster Creek Unit 1 reactor can be operated at power levels up to 1600 thermal megawatts without undue risk to the health and safety of the public. A copy of the ACRS report is enclosed.

In view of this report, the Atomic Energy Commission has forwarded to the Office of the Federal Register for filing and publication a notice relating to the proposed issuance of a provisional operating license to Jersey Central Power & Light Company for operation of the Oyster Creek Unit 1 reactor at thermal power levels not to exceed 1600 megawatts. A copy of the notice is enclosed. Copies of the Technical Specifications and safety evaluation referred to in the notice will be forwarded as soon as available.

Sincerely yours,

Original Signed by
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

bcc: H. J. McAlduff, ORO
E. E. Hall, GMR/H
J. A. Harris, PI
E. Tremmel, IP
R. Leith, OC
J. R. Buchanan, ORNL
A. A. Wells, AS&LB ✓

Enclosures:

- 1. ACRS Report
- 2. F.R. Notice

cc: George F. Trowbridge, Esquire
Shaw, Pittman, Potts, Trowbridge & Madden

OFFICE ▶	DRL:RP <i>SMHarris fac</i>	OGC <i>WBM</i>	DRL:RP <i>B</i>	DRL:RP <i>RSBoyd</i>	DRL <i>PAMorris</i>	
SURNAME ▶	HSteele/dj	<i>JB</i>	RLTedesco	RSBoyd	PAMorris	
DATE ▶	12/13/68	12/ /68	12/16/68	12/16/68	12/18/68	

UNITED STATES ATOMIC ENERGY COMMISSION

DOCKET NO. 50-219

JERSEY CENTRAL POWER & LIGHT COMPANY

NOTICE OF PROPOSED ISSUANCE OF PROVISIONAL OPERATING LICENSE

Notice is hereby given that the Atomic Energy Commission (the Commission) is considering the issuance of a provisional operating license, set forth below, which would authorize Jersey Central Power & Light Company (Jersey Central) to possess, use, and operate the Oyster Creek Nuclear Power Plant Unit No. 1, a single cycle, forced circulation, boiling water reactor. The reactor is located on Jersey Central's Oyster Creek site in Lacey Township, Ocean County, New Jersey. The license would authorize Jersey Central to operate the reactor at power levels not to exceed 1600 megawatts (thermal) in accordance with the provisions of the license and the Technical Specifications appended thereto.

Prior to issuance of the provisional operating license, the facility will be inspected by representatives of the Commission to determine whether it has been constructed in accordance with the application, as amended, and the provisions of Construction Permit No. CPPR-15 issued by the Commission on December 15, 1964. Upon issuance of the provisional operating license, Jersey Central will be required to execute an indemnity agreement as required by Section 170 of the Atomic Energy Act of 1954, as amended, and 10 CFR Part 140 of the Commission's regulations.

Within thirty (30) days from the date of publication of this notice in the FEDERAL REGISTER, the applicant may file a request for a hearing, and any person whose interest may be affected by this proceeding may file a petition for leave to intervene. Request for a hearing and petitions to intervene shall be filed in accordance with the Commission's regulations (10 CFR Part 2). If a request for a hearing or a petition for leave to intervene is filed within the time prescribed in this notice, the Commission will issue a notice of hearing or an appropriate order.

For further details with respect to this proposed provisional operating license, see (1) the application for provisional operating license (Amendment Nos. 3 through 49) filed during the period of January 18, 1967 through November 27, 1968, (2) the report of the Advisory Committee on Reactor Safeguards dated December 12, 1968, (3) a related safety evaluation prepared by the Division of Reactor Licensing, (4) the Technical Specifications which are incorporated in the proposed license and designated as Appendix A thereto, and (5) the Special Nuclear Materials Transfer Schedule designated as Appendix B to the license, all of which will be available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. Copies of items (2) and (3) above may be obtained at the Commission's Public Document Room or upon request addressed to the Atomic Energy Commission, Washington, D. C. 20545, Attention: Director, Division of Reactor Licensing.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed by
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

Dated at Bethesda, Maryland
this day of
DEC 18 1968

JERSEY CENTRAL POWER & LIGHT COMPANY

DOCKET NO. 50-219

PROPOSED PROVISIONAL OPERATING LICENSE

The Atomic Energy Commission (the Commission) having found that:

- a. The application for provisional operating license (application Amendment Nos. 3 through 49, dated January 18, 1967, February 28, 1967, June 1, 1967, July 27, 1967, August 22, 1967, August 22, 1967, August 30, 1967, August 30, 1967, August 30, 1967, August 30, 1967, September 7, 1967, October 30, 1967, September 7, 1967, September 15, 1967, September 21, 1967, October 16, 1967, October 17, 1967, October 17, 1967, October 17, 1967, October 24, 1967, October 30, 1967, October 30, 1967, November 27, 1967, November 28, 1967, December 4, 1967, December 4, 1967, December 7, 1967, December 4, 1967, December 27, 1967, February 16, 1968, January 5, 1968, March 21, 1968, March 21, 1968, March 27, 1968, May 1, 1968, July 3, 1968, July 3, 1968, August 12, 1968, July 26, 1968, October 18, 1968, October 24, 1968, October 31, 1968, November 20, 1968, October 8, 1968, November 1, 1968, November 20, 1968 and November 27, 1968, respectively) complies with the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations set forth in Title 10, Chapter 1, CFR;
- b. The facility has been constructed in accordance with the application, as amended, and the provisions of Provisional Construction Permit No. CPPR-15;

- c. There are involved features, characteristics and components as to which it is desirable to obtain actual operating experience before the issuance of an operating license for the full term requested in the application;
- d. There is reasonable assurance (i) that the facility can be operated at power levels not in excess of 1600 megawatts thermal in accordance with this license without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
- e. The applicant is technically and financially qualified to engage in the activities authorized by this license, in accordance with the rules and regulations of the Commission;
- f. The applicant has furnished proof of financial protection to satisfy the requirements of 10 CFR, Part 140;
- g. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;

Provisional Operating License No. DPR- is hereby issued to Jersey Central Power & Light Company (Jersey Central), as follows:

- 1. This license applies to the Oyster Creek Nuclear Power Plant Unit No. 1, a single cycle, forced circulation, boiling light water reactor, and electric generating equipment (the facility). The facility is located on Jersey Central's Oyster Creek site in Lacey Township, Ocean County, New Jersey, approximately sixty miles south of Newark and thirty-five miles east of Philadelphia,

Pennsylvania, and is described in license application Amendment No. 3, "Facility Description and Safety Analysis Report," as supplemented and amended, Amendment Nos. 4 through 49.

2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Jersey Central:

- A. Pursuant to Section 104b of the Atomic Energy Act of 1954, as amended (the Act), and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility as a utilization facility at the designated location on Jersey Central's Oyster Creek site;
- B. Pursuant to the Act and Title 10, CFR, Part 70, "Special Nuclear Material," to receive, possess and use at any one time up to 3600 kilograms of contained uranium 235 in connection with operation of the facility;
- C. Pursuant to the Act and Title 10, CFR, Part 30, "Rules of General Applicability to Licensing of Byproduct Material," to receive, possess and use 12,000 curies of antimony 124 and 15 curies of americium 241 as Sb-Be and Am-Be neutron sources; and
- D. Pursuant to the Act and Parts 30 and 70, to possess, but not to separate, such byproduct and special nuclear material as may be produced by operation of the facility.

3. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70, and is subject to all applicable provisions of the Act and rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

Jersey Central is authorized to operate the facility at steady state power levels up to a maximum of 1600 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A^{1/} attached hereto are hereby incorporated in this license. Jersey Central shall operate the facility at power levels not in excess of 1600 megawatts thermal in accordance with the Technical Specifications, and may make changes therein only when authorized by the Commission in accordance with the provisions of Section 50.59 of 10 CFR Part 50.

C. Reports

In addition to the reports otherwise required under this license and applicable regulations:

^{1/}This item was not filed with the Office of the Federal Register, but will be available for public inspection in the Public Document Room of the Atomic Energy Commission.

- (1) Jersey Central shall inform the Commission of any incident or condition relating to the operation of the facility which prevented or could have prevented a nuclear system from performing its safety functions as described in the Technical Specifications. For each such occurrence, Jersey Central shall promptly notify by telephone or telegram the appropriate Atomic Energy Commission Regional Compliance Office listed in Appendix D of 10 CFR 20, and shall submit within ten (10) days a report in writing to the Director, Division of Reactor Licensing (Director, DRL), with a copy to the Division of Compliance.
- (2) Jersey Central shall report to the Director, DRL, in writing within thirty (30) days of its observed occurrence any substantial variance disclosed by operation of the facility from performance specifications contained in the Facility Description and Safety Analysis Report (safety analysis report) or the Technical Specifications.
- (3) Jersey Central shall report to the Director, DRL, in writing within thirty (30) days of its occurrence any significant changes in transient or accident analysis as described in the safety analysis report.
- (4) As soon as possible after the completion of six months of operation of the facility (calculated from the date of initial criticality), Jersey Central shall begin submitting reports in writing in accordance with the requirements of the Technical Specifications.

D. Records

Jersey Central shall keep facility operating records in accordance with the requirements of the Technical Specifications.

4. Pursuant to Section 50.60, Title 10, CFR, Part 50, the Commission has allocated to Jersey Central for use in the operation of the facility 21,246 kilograms of uranium 235 contained in uranium in the isotopic ratios specified in the application. Estimated schedules of special nuclear material transfers to Jersey Central and returns to the Commission are contained in Appendix B^{1/} which is attached hereto. Transfers by the Commission to Jersey Central in accordance with column 2 in Appendix B will be conditioned upon Jersey Central's return to the Commission of material substantially in accordance with column 3 (including the subcolumns headed "Scrap" and "Depleted Fuel").
5. This license is effective as of the date of issuance and shall expire eighteen (18) months from said date, unless extended for good cause shown, or upon the earlier issuance of a superseding operating license.

FOR THE ATOMIC ENERGY COMMISSION

Peter A. Morris, Director
Division of Reactor Licensing

^{1/}This item was not filed with the Office of the Federal Register, but is available for public inspection in the Public Document Room of the Atomic Energy Commission.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
UNITED STATES ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

DEC 12 1968

Honorable Glenn T. Seaborg
Chairman
U. S. Atomic Energy Commission
Washington, D. C.

Subject: REPORT ON OYSTER CREEK NUCLEAR POWER PLANT UNIT NO. 1

Dear Dr. Seaborg:

During its 104th meeting, December 5-7, 1968, the Advisory Committee on Reactor Safeguards completed its review of the application by the Jersey Central Power and Light Company for a license to operate the Oyster Creek Nuclear Power Plant Unit No. 1 at power levels up to 1600 MW(t). During this review, the project has been considered at eight Subcommittee meetings (including one at the site) and four full Committee meetings. In the course of these discussions, the Committee has had the benefit of discussions with representatives of the Jersey Central Power and Light Company, the General Electric Company, the AEC Regulatory Staff and with consultants of these organizations. The Committee also had the benefit of the documents listed. The Committee previously discussed this project in a construction permit report dated August 28, 1964.

The Oyster Creek plant is the first of a new generation of boiling water reactors to be reviewed for an operating license; the increase of power level over that of previously licensed boiling water reactors is more than a factor of two. The time for construction of this plant was extended because of defective welds and stress-corrosion cracking in stainless steel portions of the pressure vessel envelope and internals. Items such as control rod stub tubes, nozzle safe-ends, and the core support ring were involved. These cracks were discovered during and after the system hydrostatic test. The causes of the stress-corrosion have not been definitely determined; however, studies to establish the effects of various contaminants are continuing. The Committee is satisfied that the repair procedures should prevent or minimize recurrence of stress-corrosion cracking.

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The Committee wishes to emphasize the importance of periodic inspection of the high pressure coolant system in this and other reactors. The in-service inspection requirements for this reactor are stated in the Technical Specifications, and the Committee finds these adequate for initial operation. It is expected that experience with this first large BWR will give useful information regarding the practicality of inspection methods. The Committee endorses the applicant's proposal to review his in-service inspection program with the Regulatory Staff after four years of reactor operation. In view of the difficulties inherent in direct inspection of the bulk of the welds in the Oyster Creek pressure vessel after the reactor is in service, it is recommended that alternative means for assuring continued pressure vessel integrity be studied, and implemented to the degree practical.

It is recommended that supplemental and potentially more sensitive methods of primary system leak detection be studied, evaluated, and implemented if they provide significant improvements in measurement of leak rate, in the time needed to measure leak rate, or in distinguishing the nature of the leak. The study and evaluation should be completed within a year.

The emergency core cooling system will be supplemented in about a year by the addition of a third diesel generator. This extra source of power will allow the use of one feedwater pump (as well as one core spray system) in the case of the loss of off-site power. The Committee has reviewed the design criteria for this emergency Feedwater Coolant Injection System and recommends that the applicant submit the design for review by the Regulatory Staff prior to installation. In this regard, the Committee urges caution to avoid the overloading of cable trays.

The applicant has recently reviewed design and construction criteria in regard to the separation of redundant protection components and circuits. An audit of the Oyster Creek plant revealed some deficiencies in this respect, and the applicant is proceeding with a remedial program.

Studies are continuing on the possible effects of radiolysis of water in the unlikely event of a loss-of-coolant accident. These studies should be evaluated by the Regulatory Staff and appropriate measures taken as deemed necessary.

The applicant stated that instrumentation which senses radioactivity from the steam system can be used to provide early signs of gross failure of fuel elements. The Committee believes that, as operating experience is gained with the facility, the applicant should improve the utilization of this type of instrumentation for this purpose, particularly to provide the reactor operators with direct, early indication.

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The Advisory Committee on Reactor Safeguards believes that, if due regard is given to the items mentioned above, the Oyster Creek Unit No. 1 can be operated at power levels up to 1600 MW(t) without undue hazard to the health and safety of the public.

Sincerely yours,

Original signed by
Carroll W. Zabel
Carroll W. Zabel
Chairman

References:

1. Jersey Central Power and Light Company Application for Reactor Construction Permit and Operating License for Oyster Creek Unit No. 1, Amendments No. 3 through 5 and 7 through 48.
2. Jersey Central Power and Light Company telegram, dated October 11, 1967, regarding Request for Permit for Fuel Loading and Testing of Oyster Creek Reactor Prior to Completion of Review of Application for Provisional Operating License.
3. Jersey Central Power and Light Company letter, dated February 9, 1968, transmitting General Electric Summary Report, dated February 2, 1968, regarding Reactor Vessel Problems.
4. Jersey Central Power and Light Company letter, dated April 9, 1968, regarding Oyster Creek Pressure Vessel Repair Program.
5. Jersey Central Power and Light Company telegram, dated July 3, 1968, regarding Oyster Creek Reactor Vessel Repair.