

**REGULATORY DOCKET FILE COPY**

Docket No. 50-219

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~~B...~~  
CP/ JA

APR 23 1980

Mr. I. R. Finrock, Jr.  
Vice President - Generation  
Jersey Central Power & Light Company  
Madison Avenue at Punch Bowl Road  
Morristown, New Jersey 07960

Dear Mr. Finrock:

The Commission has issued the enclosed Amendment No. 46 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 application dated January 29, 1980.

This amendment allows a minimum suppression chamber downcomer submergence of three feet and is a result of the Mark I Containment Long Term Program.

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

Sincerely,

Original signed by:  
Dennis L. Ziemann

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

Enclosures:

1. Amendment No. 46 to License No. DPR-16
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosure:  
See next page

283

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SURNAME >	H.../bjd	SNowicki	C Woodhead	DLZiemann	R.Vollmer
DATE >	4/1/80	4/16/80	4/17/80	4/23/80	4/23/80

April 23, 1980

cc w/enclosures:

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Mayor  
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\*\*w/cy of JCP&LCo filing dtd. 1/29/80

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Region II Office  
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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. 46  
License No. DPR-16

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Jersey Central Power & Light Company (the licensee) dated January 29, 1980, 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.

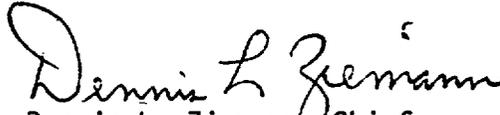
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B. of Provisional Operating License No. DPR-16 is hereby amended to read as follows:

**3.B Technical Specifications**

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 46, 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: April 23, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 46

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 the captioned amendment number and contain vertical lines indicating the area of change.

PAGES

3.5-7

3.5-14

containment is required during fuel handling operations and whenever work is being performed on the reactor or its connected systems in the reactor building since their operation could result in inadvertent release of radioactive material.

The standby gas treatment system<sup>(6)</sup> filters and exhausts the reactor building atmosphere to the stack during secondary containment isolation conditions, with a minimum release of radioactive materials from the reactor building to the environs.

Two separate filter trains are provided each having 100% capacity.<sup>(6)</sup> If one filter train becomes inoperable, there is no immediate threat to secondary containment and reactor operation may continue while repairs are being made. Since the test interval for this system is one month (Specification 4.5), the time out-of-service allowance of 7 days is based on considerations presented in the Bases in Specification 3.2 for a one-out-of-two system.

- References:
- (1) FDSAR, Volume I, Section V-1
  - (2) FDSAR, Volume I, Section V-1.4.1
  - (3) FDSAR, Volume I, Section V-1.7
  - (4) Licensing Application, Amendment 11, Question III-25
  - (5) FDSAR, Volume I, Section V-2
  - (6) FDSAR, Volume I, Section V-2.4\*
  - (7) Licensing Application, Amendment 42
  - (8) Licensing Application, Amendment 32, Question 3
  - (9) Robbins, C. H., "Tests on a Full Scale 1/48 Segment of the Humboldt Bay Pressure Suppression Containment," GEAP-3596, November 17, 1960.
  - (10) Bodega Bay Preliminary Hazards Summary Report, Appendix 1, Docket 50-205, December 28, 1962.
  - (11) Report H. R. Erickson, Bergen-Paterson to K. R. Goller, NRC, October 7, 1974. Subject: Hydraulic Shock Sway Arrestors..

In conjunction with the Mark I Containment Short Term Program, a plant unique analysis was performed on August 2, 1976, which demonstrated a factor of safety of at least two for the weakest element in the suppression chamber support system. The maintenance of a drywell-suppression chamber differential pressure within the range shown on Figure 3.5-1 with a suppression chamber water level corresponding to a downcomer submergence range of 3.0 to 5.3 feet will assure the integrity of the suppression chamber when subjected to post-LOCA suppression pool hydrodynamic forces.

REQUIRED DRYWELL TO TORUS  
DIFFERENTIAL PRESSURE

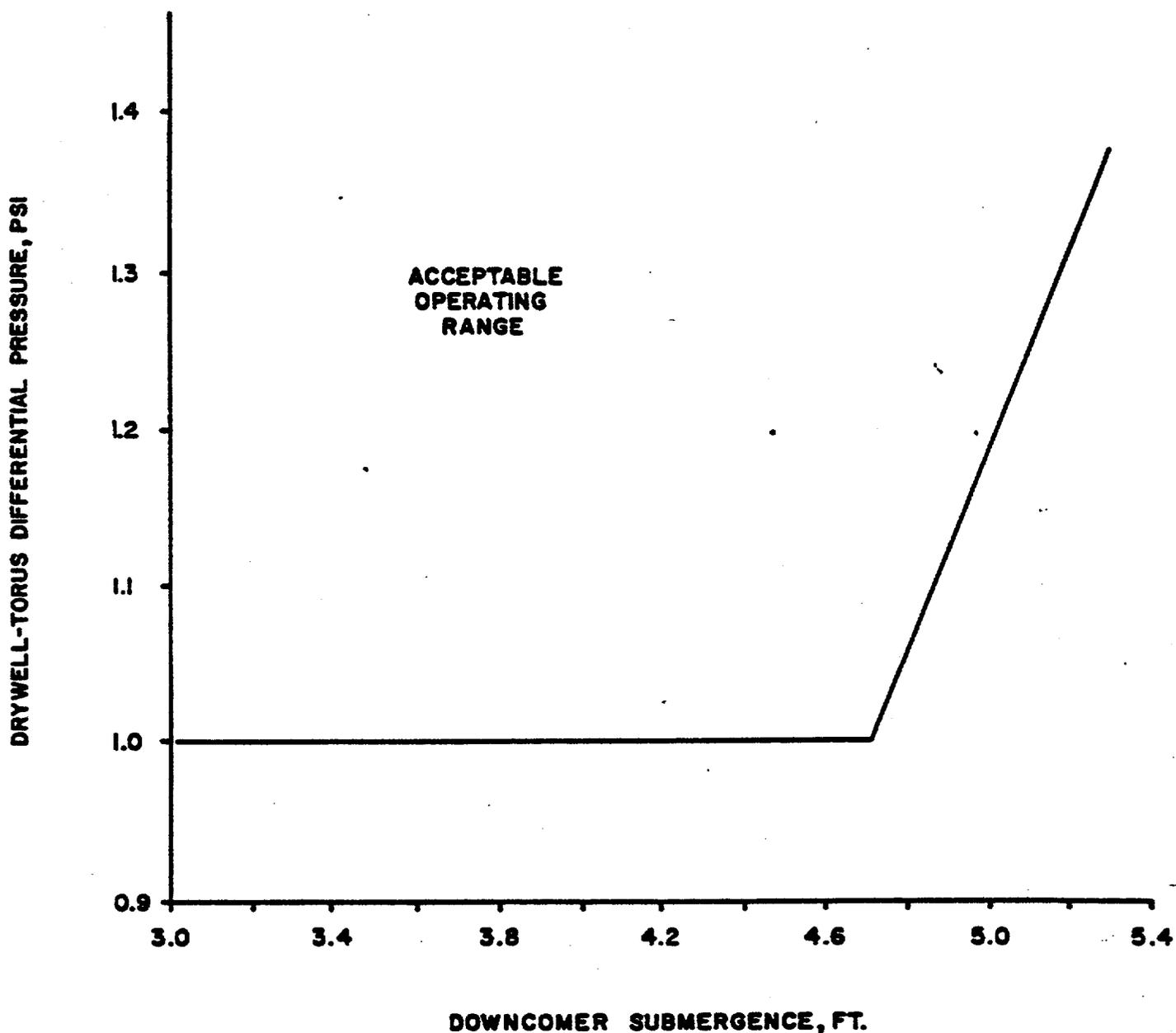


FIGURE 3.5-1

\*The actual acceptable range of downcomer submergence is governed by the Technical Specifications limit on maximum and minimum water volume in the torus (see section 3.5.A.1). This actual acceptable range of downcomer submergence will not encompass the full range of downcomer submergence indicated in the figure above.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 46 TO PROVISIONAL OPERATING LICENSE NO. DPR-16

JERSEY CENTRAL POWER & LIGHT COMPANY

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 Introduction

By letter dated January 29, 1980, Jersey Central Power and Light Company (JCP&L) (the licensee) requested a change to Appendix A, Technical Specifications, of Provisional Operating License No. DPR-16. The proposed Technical Specification change is a result of the Mark I Containment Long Term Program (LTP) and would allow a minimum suppression chamber downcomer submergence of three feet.

2.0 Evaluation

One method of suppression pool hydrodynamic load mitigation that the Mark I Owners Group has adopted for the LTP is reducing the initial submergence of the downcomer in the suppression pool to a minimum of three feet. By shortening the length of the downcomer the pool volume (i.e., thermal capacity) of the original design would be maintained. This approach, however, raises concerns regarding the increased potential for uncovering the downcomers and steam condensation capability, both of which could lead to torus overpressurization.

The potential for downcomer uncovering is addressed in the assessment of seismic slosh. This assessment was performed at the most extreme conditions that could potentially lead to uncovering of the downcomers and was predicated on a minimum three-foot downcomer submergence.

2.1 Seismic Slosh

Seismic motion induces suppression pool waves which can (1) impart an oscillatory pressure loading on the torus shell, and (2) potentially lead to uncovering the ends of the downcomers, which would result in steam bypass of the suppression pool and potential overpressurization of the torus, should the seismic event occur in conjunction with a Loss

of Coolant Accident (LOCA). To assess these effects, the Mark I Owners Group undertook the development of an analytical model which would provide plant-specific seismic wave amplitudes and torus wall pressures. This model was based on 1/30-scale "shake test" data for a Mark I torus geometry.(2)

Based on the results of plant-specific analyses, using the analytical model, the Mark I Owners Group concluded that (1) the seismic wave pressure loads on any Mark I torus are insignificant in comparison with the other suppression pool dynamic loads, and (2) the seismic wave amplitudes will not lead to uncovering the downcomers for any Mark I plant. This conclusion was based on the maximum calculated pressure loads and the minimum wave trough depth relative to the downcomer exit.

We have reviewed comparisons of the analytical predictions with scaled-up test data, the small-scale test program, and the seismic spectrum envelope used in the plant-specific analyses. Based on this review, we conclude that the seismic slosh analytical predictions will provide reasonably conservative estimates of both the wall pressure loading and the wave amplitude, for the range of Mark I plant conditions.

Since the maximum local wall pressure were found to be less than 0.8 psi at a 95% upper confidence limit, the Mark I Owners Group has proposed that the seismic slosh loads may be neglected in the structural analysis. We agree that the seismic slosh loads are insignificant in comparison with the other suppression pool dynamic loads. On this basis, we conclude that neglecting seismic slosh loads for the plant-unique analyses is acceptable.

The results of the slosh wave amplitude predictions indicate that, within the local area of maximum amplitude and with maximum suppression pool drawdown (resulting from ECCS system flows), the slosh waves will not cause uncovering of the downcomers. We have reviewed the assumptions used in these analyses and conclude that they are sufficiently conservative. Based on the above discussion, we find the proposed change acceptable.

## 2.2 Condensation Capability

Condensation capability of the suppression pool is a function of the local pool temperature in the vicinity of the downcomer exit. Full Scale Test Facility (FSTF) test results(3) and foreign test(1) data have shown that thermal stratification occurs, and becomes more severe as the downcomer submergence is reduced. The most severe thermal stratification has been observed in low flow tests with a quiescent pool. However, in actual plant conditions, the Residual Heat Removal (RHR) system and Safety Relief Valve (SRV) discharge provide sufficient long-term pool mixing to minimize thermal stratification. Even with verticle thermal stratification, we have determined that the high energy reposition

is accompanied by an increased flow and mixing, which prevent over-pressurization of the torus. In addition, the analytical predictions of the torus pressure and bulk temperature response have been found to be conservative when compared with FSTF test data for plant-simulated initial conditions. The local temperature variation in the pool which has been observed in the test data is not significant to the structure, and, therefore, need not be considered in the structural analysis.

Based on this assessment, we conclude that a minimum initial downcomer submergence of three feet is acceptable, and there is sufficient conservatism in the containment response analysis techniques to accommodate the effects of thermal stratification. Therefore, we find the proposed technical specifications 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: April 23, 1980

## References

1. K. W. Wong, "Mark I Containment Program Downcomer Reduced Submergence Functional Assessment Report" General Electric Proprietary Report NEDE-21885-P, June 1978.
2. S. M. Arian, "Mark I Containment Program Seismic Slosh Evaluation" GE Proprietary Report NEDE023702-P, March 1978.
3. G. W. Fitzsimmons and others, "Mark I Containment Program Full Scale Test Program Final Report" GE Proprietary Report NEDE-2453q-P, April 1979.

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

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 46 to Provisional Operating License No. DPR-16, issued to Jersey Central Power & Light Company (the licensee), 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 allows a minimum suppression chamber downcomer submergence of three feet.

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

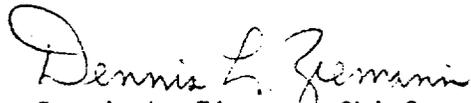
The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance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

- 2 -

For further details with respect to this action, see (1) the application for amendment dated January 29, 1980, (2) Amendment No. 46 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 at the Ocean County Library, Brick Township Branch, 401 Chambers Bridge Road, Brick Town, New Jersey 08723. 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 Operating Reactors.

Dated at Bethesda, Maryland, this 23rd day of April, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Change Request 80

Hazel Frial

William O. Miller, Chief  
License Fee Management Branch, ADM

Date: 2/14/80  
Amended Form Date: 4/23/80

FACILITY AMENDMENT CLASSIFICATION - DOCKET NO(S). 50-219

Licensee: Jersey Central

Plant Name and Unit(s): Oyster Creek

License No(s): DPR-46 Mail Control No: 8002010329

Request Dated: 1/29/80 Fee Remitted: Yes  No

Assigned TAC No: 12861

Licensee's Fee Classification: Class I , II , III , IV , V , VI ,  
None

Subject: Minimum supp. chamber downcomer submergence level  
Amendment No. 46 Date of Issuance 4/23/80

- 1. This request has been reviewed by DOR/DPM in accordance with Section 170.22 of Part 170 and is properly categorized.
- 2. This request is incorrectly classified and should be properly categorized as Class \_\_\_\_\_. Justification for classification or reclassification: \_\_\_\_\_
- 3. Additional information is required to properly categorize the request:  
We hereby affirm our initial fee determination  
Maucha 4/16/80 83 4/22/80  
Swicki Ziemann Date
- 4. This request is a Class \_\_\_\_\_ type of action and is exempt from fees because it:
  - (a) \_\_\_\_\_ was filed by a nonprofit educational institution,
  - (b) \_\_\_\_\_ was filed by a Government agency and is not for a power reactor,
  - (c) \_\_\_\_\_ is for a Class \_\_\_\_\_ (can only be a I, II, or III) amendment which results from a written Commission request dated \_\_\_\_\_ for the application and the amendment is to simplify or clarify license or technical specifications, has only minor safety significance, and is being issued for the convenience of the Commission, or
  - (d) \_\_\_\_\_ other (state reason therefor): \_\_\_\_\_

1/25 2/11/80  
Maucha  
Swicki

Dennis L Ziemann

-Division of Operating Reactors/Project Management

- THE INITIAL FEE DETERMINATION HAS BEEN REASSESSED AND IS HEREBY AFFIRMED \_\_\_\_\_.
- The above request has been reviewed and is exempt from fees.