JAN 13 1981

Docket No. 50-293

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U.S. NUCLEAR REGULATORY COMMISSION

Mr. A. Victor Morisi
Boston Edison Company
M/C NUCLEAR
800 Boylston Street
Boston, Massachusetts 02111

Dear Mr. Morisi:

The Commission has issued the enclosed Order for Modification of License and Grant of Extension of Exemption for the Pilgrim Nuclear Power Station. This Order requires that the reassessment of the containment design for suppression pool hydrodynamic loading conditions be promptly instituted and any plant modifications needed to conform to the staff's Acceptance Criteria, which are contained in Appendix A to NUREG-0661, shall be installed no later than October 31, 1981 or, if the plant is shutdown on that date, before the resumption of power thereafter. The completion schedule reflected in this Order was that which you submitted in mid 1980 and which was subsequently reviewed and approved by the Commission.

An initial version of the staff's Acceptance Criteria was previously transmitted to the affected licensees by letters dated October 31, 1979. Subsequent responses to those letters and responses to letters dated March 12, 1979, which requested schedules for Mark I related plant modifications, identified your commitment to undertake the reassessment of the suppression pool hydrodynamic loads. Consequently, we have determined that this action should be confirmed and formalized by Order. The plant-unique analyses for your facility should be submitted for confirmatory review by the staff as soon as reasonably practicable, following the completion of any necessary design work. In addition, you should submit proposed changes to update the plant Technical Specifications and their bases following the completion of sufficient structural modifications to support such a change.

The issuance of this Order provides an extension of the exemption from General Design Criterion 50 of Appendix A to 10 CFR Part 50, previously granted to all affected licensees on February 28, 1978. This exemption concerns the minimum margins of safety in the containment design. As part of the Mark I Containment Short-Term Program (STP), the staff determined

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that a margin of safety of at least two in the containment design was sufficient to assure the containment function in the event of a design-basis loss-of-coolant accident (LOCA) and, therefore, provided an adequate basis for continued plant operation until the completion of the Long-Term Program (LTP) which was expected to take approximately two years. The objective of the LTP, which will be completed when the provisions of the enclosed Order are satisfied, is to restore the originally intended margins of safety in the containment design (approximately three to four).

Following the completion of the STP, described in the staff's Safety Evaluation Report NUREG-0408, the staff concluded that the overall risk to the public was not significantly different for the affected plants as they were modified by the STP. This conclusion considered that the suppression pool hydrodynamic loads are only significant for a limited class of events (i.e., large-break LOCAs) and that there was an increased knowledge concerning the nature of such accidents gained by the STP. Consequently, we have determined that the exemption from General Design Criterion 50 does not result in any significant environmental impact and, therefore, neither an environmental impact statement nor a negative declaration and environmental impact appraisal need be prepared in connection with this action.

A copy of the enclosed Order is being filed with the Office of the Federal Register for publication.

Sincerely,

Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Order

cc w/encl: See next page

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DATE		1/12/81	1/12/81	1/12/81	1-13-81		

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

January 13, 1981

Docket No. 50-293

Mr. A. Victor Morisi
Boston Edison Company
M/C NUCLEAR
800 Boylston Street
Boston, Massachusetts 02111

Dear Mr. Morisi:

The Commission has issued the enclosed Order for Modification of License and Grant of Extension of Exemption for the Pilgrim Nuclear Power Station. This Order requires that the reassessment of the containment design for suppression pool hydrodynamic loading conditions be promptly instituted and any plant modifications needed to conform to the staff's Acceptance Criteria, which are contained in Appendix A to NUREG-0661, shall be installed no later than October 31, 1981 or, if the plant is shutdown on that date, before the resumption of power thereafter. The completion schedule reflected in this Order was that which you submitted in mid 1980 and which was subsequently reviewed and approved by the Commission.

An initial version of the staff's Acceptance Criteria was previously transmitted to the affected licensees by letters dated October 31, 1979. Subsequent responses to those letters and responses to letters dated March 12, 1979, which requested schedules for Mark I related plant modifications, identified your commitment to undertake the reassessment of the suppression pool hydrodynamic loads. Consequently, we have determined that this action should be confirmed and formalized by Order. The plant-unique analyses for your facility should be submitted for confirmatory review by the staff as soon as reasonably practicable, following the completion of any necessary design work. In addition, you should submit proposed changes to update the plant Technical Specifications and their bases following the completion of sufficient structural modifications to support such a change.

The issuance of this Order provides an extension of the exemption from General Design Criterion 50 of Appendix A to 10 CFR Part 50, previously granted to all affected licensees on February 28, 1978. This exemption concerns the minimum margins of safety in the containment design. As part of the Mark I Containment Short-Term Program (STP), the staff determined

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that a margin of safety of at least two in the containment design was sufficient to assure the containment function in the event of a design-basis loss-of-coolant accident (LOCA) and, therefore, provided an adequate basis for continued plant operation until the completion of the Long-Term Program (LTP) which was expected to take approximately two years. The objective of the LTP, which will be completed when the provisions of the enclosed Order are satisfied, is to restore the originally intended margins of safety in the containment design (approximately three to four).

Following the completion of the STP, described in the staff's Safety Evaluation Report NUREG-0408, the staff concluded that the overall risk to the public was not significantly different for the affected plants as they were modified by the STP. This conclusion considered that the suppression pool hydrodynamic loads are only significant for a limited class of events (i.e., large-break LOCAs) and that there was an increased knowledge concerning the nature of such accidents gained by the STP. Consequently, we have determined that the exemption from General Design Criterion 50 does not result in any significant environmental impact and, therefore, neither an environmental impact statement nor a negative declaration and environmental impact appraisal need be prepared in connection with this action.

A copy of the enclosed Order is being filed with the Office of the Federal Register for publication.

Sincerely,

T A Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Order

cc w/encl: See next page

Mr. A. Victor Morisi
Boston Edison Company

cc:

Mr. Richard D. Machon
Pilgrim Station Manager
Boston Edison Company
RFD #1, Rocky Hill Road
Plymouth, Massachusetts 02360

Energy Facilities Siting Council
14th Flour
One Asburton Place
Boston, Massachusetts 02108

Henry Herrmann, Esquire
Massachusetts Wildlife Federation
151 Tremont Street
Boston, Massachusetts 02111

Plymouth Public Library
North Street
Plymouth, Massachusetts 02360

Massachusetts Department of Public Health
ATTN: Commissioner of Public Health
600 Washington Street
Boston, Massachusetts 02111

Water Quality & Environmental Commissioner
Department of Environmental Quality
Engineering
100 Cambridge Street
Boston, Massachusetts 02202

Mr. David F. Tarantino
Chairman, Board of Selectmen
11 Lincoln Street
Plymouth, Massachusetts 02360

Director, Criteria and Standards
Division
Office of Radiation Programs (ANR-460)
U. S. Environmental Protection Agency
Washington, D. C. 20460

Resident Inspector
c/o U. S. NRC
P. O. Box 867
Plymouth, Massachusetts 02360

U. S. Environmental Protection
Agency
Region I Office
ATTN: EIS COORDINATOR
JFK Federal Building
Boston, Massachusetts 02203

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
BOSTON EDISON COMPANY	)	Docket No. 50-293
(Pilgrim Nuclear Power Station,	)	
Unit 1)	)	

ORDER FOR MODIFICATION OF LICENSE
AND GRANT OF EXTENSION OF EXEMPTION

I.

The Boston Edison Company (licensee), is the holder of Facility Operating License No. DPR-35 which authorizes the operation of the Pilgrim Nuclear Power Station, Unit 1, at steady state reactor power levels not in excess of 1998 megawatts (thermal) rated power. The facility consists of a boiling water reactor located at the licensee's site near Plymouth, Massachusetts.

II.

On February 28, 1978, the Commission granted to the licensee an interim exemption from the requirements of General Design Criterion 50, "Containment Design Basis," of Appendix A to 10 CFR Part 50 (Federal Register Vol. 43, No. 61, March 29, 1978). This exemption is related to the demonstrated safety margin of the Mark I containment system to withstand recently identified suppression pool hydrodynamic loads associated with postulated design basis loss-of-coolant accidents and primary system transients. Although there was a reduction in the margin of safety from that called for by

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General Design Criterion 50, the Commission found that a sufficient margin would exist to preclude undue risk to the health and safety of the public for an interim period while a more detailed review was being conducted.

The Commission's evaluation was documented in the NRC staff's "Mark I Containment Short-Term Program Safety Evaluation Report," NUREG-0408, dated December 1977, which concluded that the BWR facilities with the Mark I containment design could continue to operate without undue risk to the health and safety of the public while a more comprehensive Long-Term Program was being conducted. The purpose of the Long-Term Program was to define design basis (i.e., conservative) loads that are appropriate for the anticipated life (40 years) of each BWR/Mark I facility, and to restore the original intended design safety margins for each Mark I containment system. In order to provide uniform, consistent, and explicable acceptance criteria for the Long-Term Program, the Summer 1977 Addenda of the ASME Boiler and Pressure Vessel Code have been used as the basis for defining the intended margin of safety, rather than using the particular version of the ASME Code which was applicable to the initial licensing of each facility. In some instances, the allowable stresses are higher under the later edition of the Code. The basis for acceptance criteria is described in the "Mark I Containment Long-Term Program Safety Evaluation Report," NUREG-0661, dated July 1980.

As a result of our review of the extensive experimental and analytical programs conducted by the Mark I Owners Group, the NRC staff has concluded that the Owners Group's proposed load definition and structural assessment techniques, as set forth in the "Mark I Containment Program Load Definition Report," NEDO-21888, dated December 1978, and the "Mark I Containment Program

Criteria, will provide a conservative basis for determining whether any structural or other plant modifications are needed to restore the original intended margin of safety in the containment design. The staff's Acceptance Criteria are contained in Appendix A to NUREG-0661. The basis for the staff's requirements and conclusions is also described in NUREG-0661.

III.

In letters dated March 12, 1979, each BWR/Mark I licensee was requested by the NRC to submit a schedule for carrying out an assessment of the need for plant modifications for each of the licensee's BWR/Mark I units, based on the Owners Group's proposed generic load definition and assessment techniques, and for the subsequent installation of the plant modifications determined to be needed by such an assessment. In response to our letter, the licensee's letter dated August 15, 1980 indicated its commitment to undertake plant-unique assessments based on the Owners Group's generic assessment techniques, to modify the plant systems as needed, and also indicated that its schedule for this effort would result in a plant shutdown to complete the plant modifications by October 31, 1981.

On October 31, 1979, the staff issued an initial version of its acceptance criteria to the affected licensees. These criteria were subsequently revised in February 1980 to reflect acceptable alternative assessment techniques which would enhance the implementation of this program. Throughout the development of these acceptance criteria, the staff has worked closely with the Mark I Owners Group in order to encourage partial plant-unique assessments and modifications to be undertaken.

The modification schedules submitted in response to the March 12, 1979 letter have subsequently been revised to reflect the development of the acceptance criteria and additional information concerning plant modifications that will be needed to demonstrate conformance with those criteria. In consideration of the range of completion estimates reflected by all of the affected licensees and the staff's assessment of the nature of the effort involved in the reassessment work and in the design and installation of the needed plant modifications, the staff has concluded that the licensee's proposed completion schedule is both prompt and practicable.

Under the circumstances, the NRC staff has determined that the licensee's commitment to undertake the reassessment of suppression pool hydrodynamic loads and to design and complete installation of the plant modifications, if any, needed to conform to the generic acceptance criteria by October 31, 1981 should be confirmed and formalized by Order.

IV.

The Commission hereby extends the exemption from General Design Criterion 50 of Appendix A to 10 CFR Part 50 granted to the licensee on February 28, 1978, only for the time necessary to complete the actions required by Section V or VI of this Order. Substantial improvements have already been made in the margins of safety of the containment systems and will continue to be improved during this period whenever practicable, and, in any event, all needed improvements, if any, must be completed in accordance with the provisions of Section V or VI of this Order.

The Commission has determined that good cause exists for the extension of this exemption, that such exemption is authorized by law, will not endanger life or property or the common defense and security, and is in the public interest. The Commission has determined that the granting of this exemption 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 this action.

V.

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 50, IT IS HEREBY ORDERED THAT the license be amended to include the following conditions:

1. the licensee shall promptly assess the suppression pool hydrodynamic loads in accordance with NEDO-21888 and NEDO-24583-1 and the Acceptance Criteria contained in Appendix A to NUREG-0661.
2. any plant modifications needed to assure that the facility conforms to the Acceptance Criteria contained in Appendix A to NUREG-0661 shall be designed and its installation shall be completed not later than October 31, 1981 or, if the plant is shutdown on that date, before the resumption of power thereafter.

VI.

The licensee or any person whose interest may be affected by the Order set forth in Section V hereof may request a hearing within thirty days of the date of publication of this Order in the Federal Register. Any request for a hearing shall be addressed to the Director, Office of Nuclear Reactor Regulation, U. S. Nuclear

addressed to the Director, Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission, Washington, DC 20555, and to Ropes and Gray, 225 Franklin Street, Boston, Massachusetts 01581, attorneys for the licensee.

If a hearing is held concerning such Order, the issues to be considered at the hearing shall be:

1. whether the licensees should be required to promptly assess the suppression pool hydrodynamic loads in accordance with the requirements of Section V of this Order; and,
2. whether the licensee should be required, as set forth in Section V of this Order, to complete the design and installation of plant modifications, if any, needed to assure that the facility conforms to the Acceptance Criteria contained in Appendix A to NUREG-0661.

The Order set forth in Section V hereof will become effective on expiration of the period during which the licensees may request a hearing or, in the event a hearing is held, on the date specified in an order issued following further proceedings on this Order.

VII.

For further details concerning this action, refer to the following documents which are available for inspection at the Commission's Public Document Room at 1717 H Street, NW, Washington, DC 20555 or through the Commission's local public document room at the Plymouth Public Library, North Street, Plymouth, Massachusetts 02360.

1. "Mark I Containment Program Load Definition Report," General Electric Topical Report, NEDO-21888, December 1978.

2. "Mark I Containment Program Structural Acceptance Criteria Plant Unique Analysis Applications Guide," General Electric Topical Report, NEDO-24583-1, October 1979.

3. "Mark I Containment Long Term Program Safety Evaluation Report," NUREG-0661, July 1980.

4. Letter, G. Carl Andognini, Boston Edison Company, to D. G. Eisenhut, NRC, dated August 15, 1980.

5. Letter to licensee dated January 13, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Dated: January 13, 1981
Bethesda, Maryland