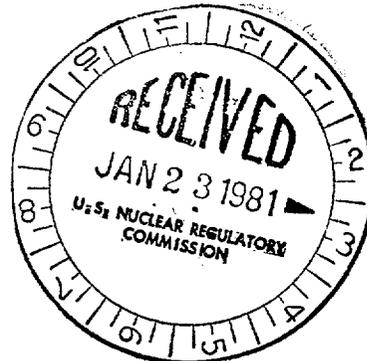


REGULATORY DOCKET FILE COPY
January 13, 1981

Docket

Docket Nos. 50-237
50-249
50-254
and 50-265



Mr. J. S. Abel
Director of Nuclear Licensing
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Abel:

The Commission has issued the enclosed Orders for Modification of Licenses and Grant of Extension of Exemptions for the Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2. The Orders require 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 January 31, 1983 for Dresden Unit 2, July 31, 1982 for Dresden Unit 3, December 31, 1982 for Quad Cities Unit 1 and July 31, 1982 for Quad Cities Unit 2 or, if the plant is shutdown on that date, before the resumption of power operation 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 facilities 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 these Orders provides an extension of the exemption from General Design Criterion 50 of Appendix A to 10 CFR Part 50, previously granted to the affected licensees on February 28, 1978. These exemptions concern 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 Orders 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 Orders is being filed with the Office of the Federal Register for publication.

Sincerely,

Original Signed by *[Signature]* Original Signed by
 T. A. Ippolito T. A. Ippolito

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

Enclosure:
 Orders

cc w/encl: See next page

Pwoc

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SURNAME	<i>[Signature]</i>	RBevan	TAIppolito	TMNovak	DGEI Semut		
DATE	1/9/81	1/9/81:cb	1/12/81	1/12/81	1/13/81		

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Docket

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

January 13, 1981

Docket Nos. 50-237
50-249
50-254
and 50-265

Mr. J. S. Abel
Director of Nuclear Licensing
Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dear Mr. Abel:

The Commission has issued the enclosed Orders for Modification of Licenses and Grant of Extension of Exemptions for the Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2. The Orders require 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 January 31, 1983 for Dresden Unit 2, July 31, 1982 for Dresden Unit 3, December 31, 1982 for Quad Cities Unit 1 and July 31, 1982 for Quad Cities Unit 2 or, if the plant is shutdown on that date, before the resumption of power operation 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 facilities 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 these Orders provides an extension of the exemption from General Design Criterion 50 of Appendix A to 10 CFR Part 50, previously granted to the affected licensees on February 28, 1978. These exemptions concern the minimum margins of safety in the containment design. As part of the Mark I Containment Short-Term Program (STP), the staff determined

Mr. J. S. Abel

- 2 -

January 13, 1981

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 Orders 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 Orders 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:
Orders

cc w/encl: See next page

Mr. J. S. Abel

cc:

Mr. John W. Rowe
Isham, Lincoln & Beale
Counselors at Law
One First National Plaza, 42nd Floor
Chicago, Illinois 60603

Mr. B. B. Stephenson
Plant Superintendent
Dresden Nuclear Power Station
Rural Route #1
Morris, Illinois 60450

Morris Public Library
604 Liberty Street
Morris, Illinois 60451

Illinois Department of Public Health
ATTN: Chief, Division of Nuclear
Safety
535 West Jefferson
Springfield, Illinois 62761

Mr. William Waters
Chairman, Board of Supervisors
of Grundy County
Grundy County Courthouse
Morris, Illinois 60450

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

U. S. Environmental Protection Agency
Federal Activities Branch
Region V Office
ATTN: EIS COORDINATOR
230 South Dearborn Street
Chicago, Illinois 60604

Susan N. Sekuler
Assistant Attorney General
Environmental Control Division
188 W. Randolph Street
Suite 2315
Chicago, Illinois 60601

U. S. Nuclear Regulatory Commission
Resident Inspector's Office
Dresden Station
RR #1
Morris, Illinois 60450

John F. Wolfe, Esq.
3409 Shepherd Street
Chevy Chase, Maryland 20015

Dr. Linda W. Little
500 Hermitage Drive
Raleigh, North Carolina 27612

Dr. Forrest J. Remick
305 East Hamilton Avenue
State College, Pennsylvania 16801

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

In the Matter of)
 COMMONWEALTH EDISON COMPANY)
 (Dresden Nuclear Power Station,) Docket No. 50-237
 Unit 2))
)

ORDER FOR MODIFICATION OF LICENSE
 AND GRANT OF EXTENSION OF EXEMPTION

I.

Commonwealth Edison Company (the licensee) is the holder of Provisional Operating License No. DPR-19 which authorizes the operation of the Dresden Nuclear Power Station, Unit 2 at steady state reactor power levels not in excess of 2527 megawatts thermal (rated power). The facility consists of a boiling water reactor located at the licensee's site in Grundy County, Illinois.

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 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 Structural Acceptance Criteria Plant Unique Analysis Application Guide," NEDO-24583-1, dated October 1979, (subsequently referred to as NEDO-21888 and NEDO-24583-1) and as modified in certain details by the staff's Acceptance

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 letters dated May 11, 1979 and July 2, 1980 indicated a 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 January 31, 1983.

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 January 31, 1983 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 Commissions 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 January 31, 1983 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

Regulatory Commission, Washington, DC 20555, and to Isham, Lincoln & Beale, Counselors at Law, One First National Plaza, 42nd Floor, Chicago, Illinois 60603, attorney for the licensee.

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

1. whether the licensee 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 licensee 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 Morris Public Library, 604 Liberty Street, Morris, Illinois 60451.

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 from C. Reed, CECO, to D. G. Eisenhower, NRC, dated May 11, 1979.
5. Letter from C. Reed, CECO, to D. G. Eisenhower, NRC, dated July 2, 1980.
6. Letter to licensee dated January 13, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Dated: January 13, 1981
Bethesda, Maryland

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

In the Matter of)
 COMMONWEALTH EDISON COMPANY)
 (Dresden Nuclear Power Station,) Docket No. 50-249
 Unit 3))
)

ORDER FOR MODIFICATION OF LICENSE
 AND GRANT OF EXTENSION OF EXEMPTION

I.

Commonwealth Edison Company (the licensee) is the holder of Facility Operating License No. DPR-25 which authorizes the operation of the Dresden Nuclear Power Station, Unit 3 at steady state reactor power levels not in excess of 2527 megawatts thermal (rated power). The facility consists of a boiling water reactor located at the licensee's site in Grundy County, Illinois.

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 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 Structural Acceptance Criteria Plant Unique Analysis Application Guide," NEDO-24583-1, dated October 1979, (subsequently referred to as NEDO-21888 and NEDO-24583-1) and as modified in certain details by the staff's Acceptance

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 letters dated May 11, 1979 and July 2, 1980 indicated a 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 July 31, 1982.

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 July 31, 1982 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 Commissions 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 July 31, 1982 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

Regulatory Commission, Washington, DC 20555, and to Isham, Lincoln & Beale, Counselors at Law, One First National Plaza, 42nd Floor, Chicago, Illinois 60603, attorney for the licensee.

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

1. whether the licensee 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 licensee 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.

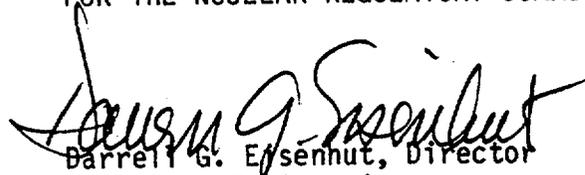
VII.

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 Morris Public Library, 604 Liberty Street, Morris, Illinois 60451.

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 from C. Reed, CECO, to D. G. Eisenhower, NRC, dated May 11, 1979.
5. Letter from C. Reed, CECO, to D. G. Eisenhower, NRC, dated July 2, 1980.
6. Letter to licensee dated January 13, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION


Barrett G. Eisenhower, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Dated: January 13, 1981
Bethesda, Maryland

UNITED STATES OF AMERICA
 NUCLEAR REGULATORY COMMISSION

In the Matter of)
 COMMONWEALTH EDISON COMPANY AND)
 IOWA-ILLINOIS GAS & ELECTRIC)
 COMPANY)
 (Quad Cities Nuclear Power)
 Station, Unit 1)

Docket No. 50-254

ORDER FOR MODIFICATION OF LICENSE
 AND GRANT OF EXTENSION OF EXEMPTION

I.

The Commonwealth Edison Company, et al (the licensee) is the holder of Facility Operating License No. DPR-29 which authorizes the operation of the Quad Cities Nuclear Power Station, Unit 1 at steady state reactor power levels not in excess of 2511 megawatts thermal (rated power). The facility consists of a boiling water reactor located at the licensee's site near Cordova, Illinois.

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 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 Structural Acceptance Criteria Plant Unique Analysis Application Guide," NEDO-24583-1, dated October 1979, (subsequently referred to as NEDO-21888 and NEDO-24583-1) and as modified in certain details by the staff's Acceptance

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 letters dated May 11, 1979 and July 2, 1980 indicated a 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 December 31, 1982.

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 December 31, 1982 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 the 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 Commissions 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 December 31, 1982 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

Regulatory Commission, Washington, DC 20555, and to Isham, Lincoln & Beale, Counselors at Law, One First National Plaza, 42nd Floor, Chicago, Illinois 60603, 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 licensee 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 licensee 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.

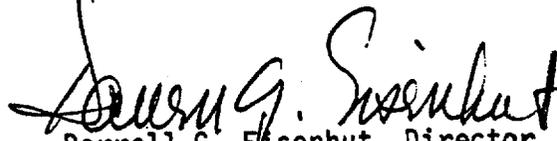
VII.

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 Moline Public Library, 504-17th Street, Moline, Illinois.

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 from C. Reed, CECO, to D. G. Eisenhut, NRC, dated May 11, 1979.
5. Letter from C. Reed, CECO, to D. G. Eisenhut, NRC, dated July 2, 1980.
6. 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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
COMMONWEALTH EDISON COMPANY AND)
IOWA-ILLINOIS GAS & ELECTRIC)
COMPANY)
(Quad Cities Nuclear Power)
Station, Unit 2)

Docket No. 50-265

ORDER FOR MODIFICATION OF LICENSE
AND GRANT OF EXTENSION OF EXEMPTION

I.

The Commonwealth Edison Company, et al (the licensee) is the holder of Facility Operating License No. DPR-30 which authorizes the operation of the Quad Cities Nuclear Power Station, Unit 1 at steady state reactor power levels not in excess of 2511 megawatts thermal (rated power). The facility consists of a boiling water reactor located at the licensee's site near Cordova, Illinois.

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 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.

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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 Structural Acceptance Criteria Plant Unique Analysis Application Guide," NEDO-24583-1, dated October 1979, (subsequently referred to as NEDO-21888 and NEDO-24583-1) and as modified in certain details by the staff's Acceptance

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 letters dated May 11, 1979 and July 2, 1980 indicated a 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 July 31, 1982.

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 July 31, 1982 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 Commissions 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 July 31, 1982 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

Regulatory Commission, Washington, DC 20555, and to Isham, Lincoln & Beale, Counselors at Law, One First National Plaza, 42nd Floor, Chicago, Illinois 60603, 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 licensee 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 licensee 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.

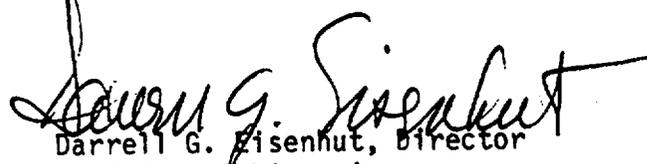
VII.

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 Moline Public Library, 504-17th Street, Moline, Illinois.

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FOR THE NUCLEAR REGULATORY COMMISSION


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

Dated: January 13, 1981
Bethesda, Maryland