

DCS MS-016

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Docket Nos. 50-282
and 50-306

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Mr. D. M. Musolf
Nuclear Support Services
Northern States Power Company
414 Nicollet Mall - 8th Floor
Minneapolis, Minnesota 55401

Dear Mr. Musolf:

The Commission has issued the enclosed Amendment Nos. 58 and 50 to Facility Operating Licenses Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2, respectively in response to your application dated June 14, 1982.

The amendments revise the Appendix A Technical Specifications concerned with the peak burnup limits shown in Figure TS 3.10-7. The peak burnup limit is increased from 41,850 to 47,000 MWD/MTU.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by

Dominic C. DiIanni, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosures:

1. Amendment No. 58 to DPR-42
2. Amendment No. 50 to DPR-60
3. Safety Evaluation
4. Notice of Issuance

cc: w/enclosures
See next page

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SURNAME	PMKreutzer	DCDiIanni/pn	RAClark	TMJovak			
DATE	7/9/82	7/12/82	7/1/82	7/1/82	7/1/82		



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

DISTRIBUTION:
Docket File
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PMKreutzer

Docket No. 50-282/50-306

Docketing and Service Section
Office of the Secretary of the Commission

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS NOS. 1&2,
NORTHERN STATES POWER COMPANY

Two signed originals of the Federal Register Notice identified below are enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies (12) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Availability of Applicant's Environmental Report.
- Notice of Proposed Issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).

Other: Amendment Nos. 56 and 50
Referenced documents have been provided PDR.

Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

OFFICE →	ORB#3:DL					
SURNAME →	PMKreutzer/pn					
DATE →	7/19/82					

Northern States Power Company

cc:

Gerald Charnoff, Esquire
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N.W.
Washington, D. C. 20036

Mr. Louis J. Breimhurst
Executive Director
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113

The Environmental Conservation Library
Minneapolis Public Library
300 Nicollet Mall
Minneapolis, Minnesota 55401

Mr. F. P. Tierney, Plant Manager
Prairie Island Nuclear Generating Plant
Northern States Power Company
Route 2
Welch, Minnesota 55089

Jocelyn F. Olson, Esquire
Special Assistant Attorney General
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
Route #2, Box 500A
Welch, Minnesota 55089

Regional Administrator
Nuclear Regulatory Commission, Region III
Office of Executive Director for Operations
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. R. L. Tanner
County Auditor
Red Wing, Minnesota 55066

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



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-282

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56
License No. DPR-42

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated June 14, 1982, 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.

DESIGNATED ORIGINAL

Certified By

Patricia J. Moore

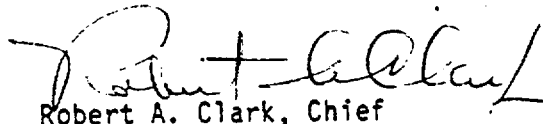
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-60 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 56, 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



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 16, 1982 .



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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-306

PRAIRIE ISLAND NUCLEAR GENERATING PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 50
License No. DPR-60

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated June 14, 1982, 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.

DESIGNATED ORIGINAL

Certified By

Patricia J. Norson

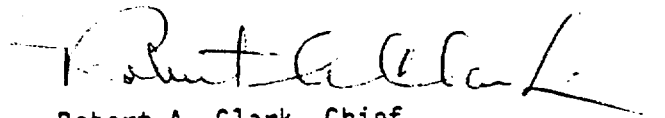
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-42 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A as revised through Amendment No. 50, 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



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 16, 1982

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. DPR-42

AMENDMENT NO. 50 TO FACILITY OPERATING LICENSE NO. DPR-60

DOCKET NOS. 50-282 AND 50-306

Replace the following page of the Appendix A. Technical Specifications with the enclosed page as indicated. The revised page is identified by amendment number and contains vertical lines indicating the area of change.

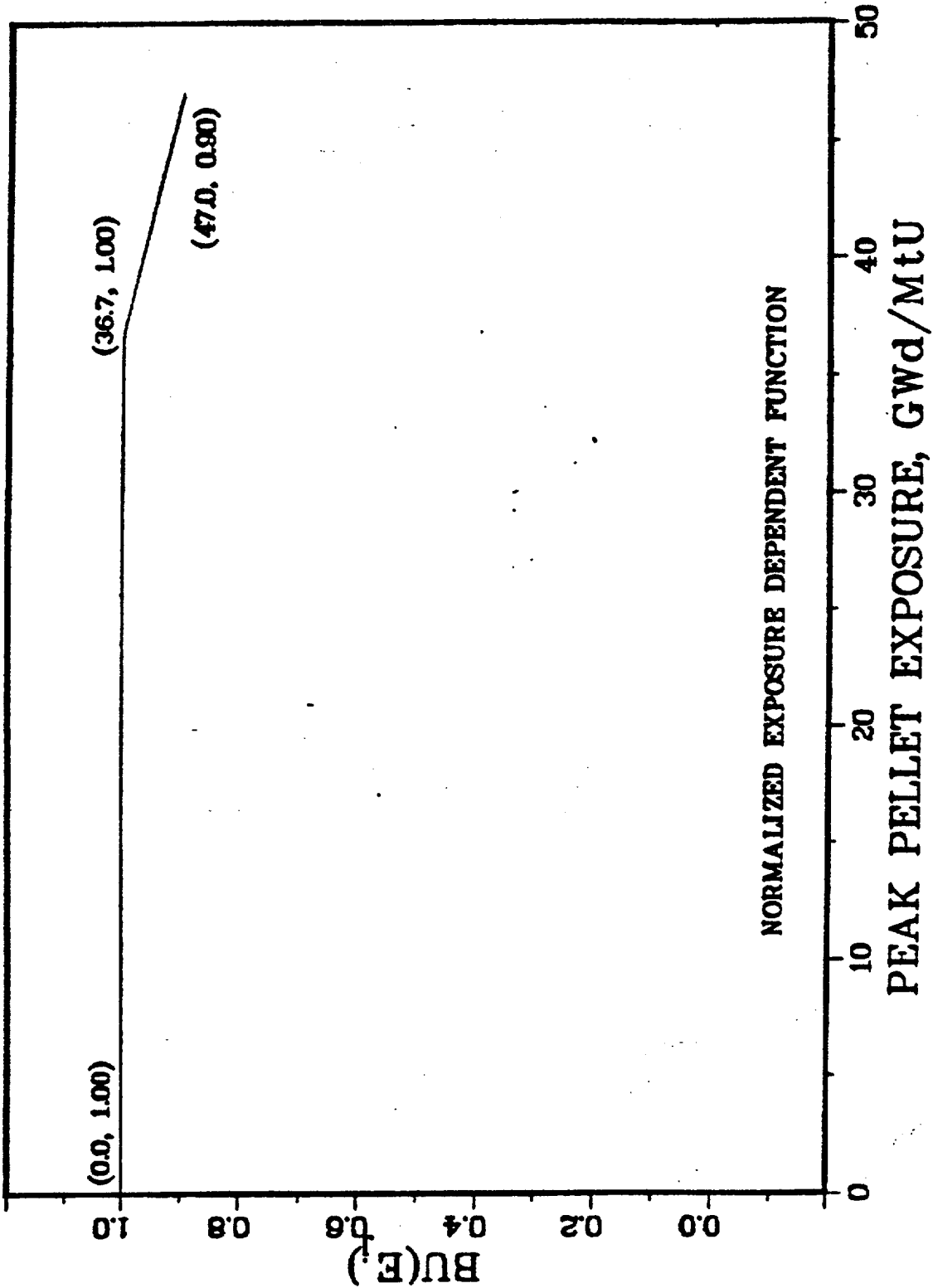
Remove

Fig. TS.3.10-7

Insert

Fig. TS.3.10-7

PRAIRIE ISLAND



Prairie Island Unit 1 - Amendment No. 29, 44, 56
Prairie Island Unit 2 - Amendment No. 23, 38, 50



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. DPR-42
AND AMENDMENT NO. 50 TO FACILITY OPERATING LICENSE NO. DPR-60
NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-282 AND 50-306

1 Introduction

By letter dated June 14, 1982 (Ref. 1), Northern States Power Company made application to amend the Technical Specifications for Prairie Island Nuclear Generating Plant, Units 1 and 2, in order to continue the current Cycle 7 operation of Unit 1 to higher fuel exposure. The change involves an exposure-dependent power peaking factor limit now contained in the Technical Specifications. The limit is currently defined over a range of 0 to 41,850 Mwd/MtU peak pellet exposure. The change would expand the range of burnups over which the limit is defined to accommodate anticipated exposures in Prairie Island.

2 Evaluation

We have examined the supporting document (Ref. 2) for this request, which describes a LOCA reanalysis by Exxon. Most of the methods employed have been previously reviewed and approved by the staff and are therefore acceptable for this application. Three exceptions to this general conclusions are (1) cladding swelling and rupture behavior, (2) improved neutronics input, and (3) application of analytical methods at high burnup.

The first issue concerns cladding swelling and rupture models employed in ECCS analyses. This issue was identified in November of 1979, at which time the NRC requested (Ref. 3) an assessment of the impact of revised cladding swelling and rupture models (Ref. 4) on the safety analysis of all operating light

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Certified By Patricia J. Moran

water reactors. Northern States Power Company responded (Ref. 5) to this request by stating that the Prairie Island analysis continued to demonstrate compliance with 10 CFR 50.46 with the revised cladding models. For the proposed Technical Specification change, which required a reanalysis of the ECCS performance, the licensee has stated (Ref. 6) that the acceptance criteria of 10 CFR 50.46 continue to be met with the revised cladding swelling and rupture models. The first issue has thus been adequately addressed.

The second issue concerns those changes to the ECCS analysis which result in extending the break point in F_0 to higher burnups. This extension was unexpected because the original and revised ECCS analyses rely on essentially the same models. Exxon's description (Ref. 2) of the analysis performed states that the extension is due to the benefit of improved neutronics input to the model. Specifically, these refinements were made to the input moderator density reactivity and the U-238 capture/fission ratio used in the analysis. These improvements to the LOCA model input have been accepted for other applications (e.g., D.C. Cook, Kewaunee) and we continue to find them acceptable for Prairie Island.

The third issue involves the application of analytical methods at high burnup, where the models may not have been verified. There are several related limiting curves referenced in this evaluation. The first is the normalized exposure dependent function, $BU(E_j)$, currently in the Prairie Island Technical Specifications. As stated previously, this curve is defined for peak pellet exposures up to 41,850 MWd/MtU. A second curve, obtained by extrapolating the existing Technical Specification limit to 47,000 MWd/MtU, is currently being administratively adhered to by the licensee until the amendment is approved. A third curve, generated by Exxon Nuclear Company (Ref. 2) to supplement the amendment request, is also defined for peak pellet exposures up to 47,000 MWd/MtU. A fourth curve, proposed by the licensee as part of this submittal, is defined for peak pellet exposures up to 50,000 MWd/MtU. For exposures at which all curves are defined (e.g., 40,000 MWd/MtU), they are not necessarily identical.

The F_Q limit developed by Exxon (Ref. 2) for this submittal (the third curve) has been determined for peak pellet exposures of up to 47,000 MWd/MtU. Assuming a peaking factor of 1.3, this exposure corresponds to a batch average discharge burnup of 36,000 MWd/MtU. We note that batch average discharge burnups of 35,700 and 36,100 MWd/MtU have been achieved for Unit 1 Cycle 5 and Unit 2 Cycle 3 fuel, respectively. An exposure dependent function, as required for the Prairie Island Technical Specifications, is shown in Figure 1. This exposure dependent function is based on the third curve rather than the fourth curve. Analyses to support further extensions of this function were not submitted by the licensee.

3 Conclusions

We have examined the licensee's request for an extension of the exposure-dependent power peaking factor at Prairie Island Unit Nos. 1 and 2. The licensee's proposed Figure TS.3.10-7 allows a peak pellet exposure to 50,000 MWd/MtU. However, our review is based on the licensee's documentation supporting operation to 47,000 MWd/MtU. On this basis we find the proposed change acceptable for both Units to a peak pellet exposure of 47,000 MWd/MtU, as shown in the revised Figure TS 3.10-7. The revision to the Figure TS 3.10-7 was discussed with and agreed to by the licensee.

Environmental Consideration

We have determined that the amendments do 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 amendments

involve 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 these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated, do not create the possibility of an accident of a type different from any evaluated previously, and do not involve a significant reduction in a margin of safety, the amendments do 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: July 16, 1982

REFERENCES

1. D. Musolf (NSP) letter to the Director, Office of Nuclear Reactor Regulation (NRC) on "License Amendment Request", dated June 14, 1982.
2. "LOCA ECCS Limiting Break and Exposure Sensitivity Analysis for ENC XN1 and XN2 Reloads at Prairie Island Unit 1 with 5 Percent Steam Generator Tubes Plugged Using ENC WREM IIA PWR Evaluation Model," Exxon Nuclear Company Report XN-NF-81-06 dated February 6, 1981 and transmitted by D. Musolf (NSP) letter to the Director, Office of Nuclear Reactor Regulation (NRC) dated June 15, 1982.
3. D. G. Eisenhut (NRC) letter to All Operating LWRs dated November 9, 1979.
4. D. A. Powers and R. O. Meyer, "Cladding Swelling and Rupture Models for LOCA Analysis," U.S. Nuclear Regulatory Commission Draft Report NUREG-0630, November 1979.
5. L. O. Mayer (NSP) letter to Director, Office of Nuclear Reactor Regulation (NRC) dated January 8, 1980.
6. D. Musolf (NSP) letter to the Director, Office of Nuclear Reactor Regulation (NRC) dated July 7, 1982.
7. M. J. Ades, "Qualification of Exxon Nuclear Fuel for Extended Burnup," Exxon Nuclear Company Report XN-NF-82-06, March 1982.

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NOS. 50-282 AND 50-306NORTHERN STATES POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

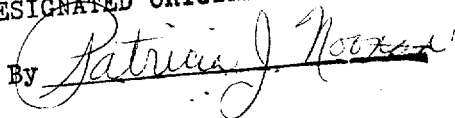
The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 56 and 50 to Facility Operating License Nos. DPR-42 and DPR-60 issued to Northern States Power Company (the licensee), which revised Technical Specifications for operation of Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2 (the facilities) located in Goodhue County, Minnesota. The amendments are effective as of the date of issuance.

The amendments revise the Appendix A Technical Specifications concerned with the peak burnup limits shown in Figure TS.3.10-7. The peak burnup limit is increased from 41,850 to 47,000 MWD/MTU.

The application for the amendments 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 amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

DESIGNATED ORIGINAL

Certified By



- 2 -

The Commission has determined that the issuance of these amendments 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 these amendments.

For further details with respect to this action, see (1) the application for amendments dated June 14, 1982, (2) Amendment Nos. 56 and 50 to License Nos. DPR-42 and DPR-60, 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 Environmental Conservation Library, 300 Nicollet Mall, Minneapolis, Minnesota 55401. A 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 Licensing.

Dated at Bethesda, Maryland, this 16th day of July, 1982.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing