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Docket Nos. 50-282
and 50-306

Northern States Power Company
ATTN: Mr. L. O. Mayer, Manager
Nuclear Support Services
414 Nicollet Mall - Eighth Floor
Minneapolis, Minnesota 55401

Gentlemen:

DISTRIBUTION
 Docket Files 50-282 B. Grimes
 and 50-306 ACRS (16)
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 B. Harless

The Commission has filed the enclosed "Notice of Proposed Issuance of Amendments to Facility Operating Licenses" with the Office of the Federal Register for publication. The notice relates to your request dated September 8, 1978 for Amendments to DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Station, Unit Nos. 1 and 2. The request relates to refueling of the Prairie Island Unit Nos. 1 and 2 with fuel manufactured by the Exxon Nuclear Co. Inc. for operating Cycles 5 through 8 at each unit.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosure:
Notice

cc: w/enclosure
See next page

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[Signature]
11/16/78

OFFICE	DOR:ORB1	DOR:ORB1		OELD	DOR:ORB1
SURNAME	MGrotenhuis	CParrish		ESF	ASchwencer
DATE	10/25/78:jd	10/27/78		11/16/78	11/19/78

cc: Gerald Charnoff, Esquire
Shaw, Pittman Potts & Trowbridge
1800 M Street, NW
Washington, D.C. 20036

Sandra S. Gardebring
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

Bernard M. Cranum
Bureau of Indian Affairs, DOI
831 Second Avenue South
Minneapolis, Minnesota 55402

Mr. John C. Davidson, Chairman
Goodhue County Board of Commissioners
321 West Third Street
Red Wing, Minnesota 55066

State Department of Health
ATTN: Secretary & Executive Officer
University Campus
Minneapolis, Minnesota 55440

Chairman, Public Service Commission
of Wisconsin
Hill Farms State Office Building
Madison, Wisconsin 53702

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U.S. Environmental Protection Agency
Room 645, East Tower
401 M Street, SW
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

Mr. F. P. Tierney, Plant Manager
Prairie Island Nuclear Generating
Plant

Northern States Power Company
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Welch, Minnesota 55089

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

Robert L. Nybo, Jr., Chairman
Minnesota-Wisconsin Boundary
Area Commission
619 Second Street
Hudson, Wisconsin 54016

PRELIMINARY DETERMINATION
NOTICING OF PROPOSED LICENSING AMENDMENT

LICENSEE: Northern States Power Company (NSP)

REQUEST FOR: Core Reload for Cycles 5-8 operation of Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP) using Exxon fuel; ECCS analysis by Exxon.

REQUEST DATE: September 8, 1978

PROPOSED ACTION: (X) Pre-notice Recommended
() Post-notice Recommended
() Determination delayed pending completion of Safety Evaluation

BASIS FOR DECISION: On September 8, 1978, NSP submitted a plan for the reloading of both PINGP, Units 1 and 2 for Cycles 5 through 8 of each plant with fuel manufactured by the Exxon Nuclear Company, Inc. The Technical Specifications (TS) changes are expected to be submitted in December 1978 in time for use in Unit 1 Cycle 5 operation. Unit 1 Cycle 5 reloading is planned to occur during the Spring of 1979. Unit 2 Cycle 5 reloading is planned for the fall of 1979.

The Technical Specifications (TS) changes (details to be submitted in December 1978) are proposed to cover the following:

- (a) Permit use of gadolinium as a burnable poison (not now permitted)
- (b) Redefine the temperature coefficient limit to permit greater operational flexibility
- (c) Add power distribution control requirements applicable to Exxon fuel, and
- (d) To account for exposure dependency of F_Q for Exxon fuel.

Gadolinium Use as a Burnable Poison

TS Section: 5.3.A

This section describes the Borosilicate glass Burnable Poison Rod Assembly (BPRA) supplied for the initial Unit 1 and 2 cores. Subsequent cores

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have not used burnable poisons except in the two source and two core symmetrical assemblies. These burnable poisons have been used only as needed to obtain a negative moderator temperature coefficient by reducing the reactor coolant system boron concentration.

The licensee plans to introduce a different burnable poison, gadolinium. Gadolinium will be used as a one percent by weight oxide dispersion in a uranium dioxide matrix in 64 fuel rods (total) in 8 of the 40 reload assemblies.

The use of gadolinium as a burnable poison has been approved for other reactors (e.g., Monticello and Palisades).

The Technical Specification change proposed to permit gadolinium is to delete the present reference to specific burnable poisons. If approved this would allow flexibility in selection of burnable poisons while not requiring a separate Technical Specification change for each reload where burnable poisons may be changed.

Temperature Coefficient

TS Section: 3.1.F.1

This section restricts criticality to reactor coolant temperatures at or above which the moderator temperature coefficient is negative and remains negative for any temperature increase. The requested change if approved would require only that the isothermal temperature coefficient be negative. Safety analyses will be provided which justify the change.

This change is being requested to allow greater flexibility at beginning of life (BOL) and to permit longer cycle lengths with the Exxon fuel than could be realized with the existing requirements.

Other plants have been allowed to operate with a positive moderator temperature coefficient, e.g., Maine Yankee.

Power Distribution Control (PDC)

TS Section: 3.10

This section currently describes power distribution control requirements specifically applicable to Westinghouse fuel. Current F_Q limits are set based on Westinghouse constant axial offset control method. Exxon's PDC 2 control method which has been submitted for our evaluation and provides the basis for the Technical Specification change request. The report describing the Exxon methodology was SX-NF-77-57, "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors - Phase II", January 1978 was submitted January 17, 1978 and is currently under review.

Peaking Factor F_Q Limits

TS Section: 3.10.B.1

Current Technical Specifications impose a constant F_Q limit and a variable $F_{\Delta H}$ with burnup. It is expected that this section will be changed to require the F_Q limit to vary with fuel assembly burnup also.

In addition, Exxon Nuclear has developed a modified ECCS evaluation model which will be used to perform the ECCS analyses for Prairie Island Unit 1. This model is described in Topical Report XN-NF-78-30, "Exxon Nuclear Company WREM Based G-neric PWR ECCS Evaluation Model Update WREM IIA", August 1978, and was submitted to us on August 15, 1978. This Topical Report is currently under review.

Although a detailed review will be required to determine whether the proposed changes involve a significant hazards consideration, early pre-noticing at this time is recommended because:

1. This is the first instance of use of Exxon fuel in these reactors;
2. New ECCS evaluation model approval is involved;
3. Delay in pre-noticing until after our review is complete would likely result in a delay in Cycle 5 operation of Prairie Island Unit 2.

PROPOSED NEPA ACTION: () EIS Required
() ND & EID Required
(X) No EIS, ND, or EIS Required
() Determination delayed pending completion of EPA

BASIS FOR DECISION: No EIA (and ND) is required because the change will not involve a change in power level or in the type or quantity of effluents previously considered and there will be no change in any environmental impact previously evaluated.

Guide

CONCURRENCES:

- 1. M. Grotenhuis 10/26/78
- 2. A. Schwencer 11/9/78
- 3. D. Eisenhut 11/6/78
- 4. OELD* 11/06/78

*OELD concurred in Notice of Proposed Issuance of Amendment

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NUMBERS 50-282 AND 50-306

NORTHERN STATES POWER COMPANY

NOTICE OF PROPOSED ISSUANCE OF AMENDMENT TO

FACILITY OPERATING LICENSE

The United States Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License Nos. DPR-42 and DPR-60 issued to Northern States Power Company (the licensee), for operation of the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2 located in Goodhue County, Minnesota.

The amendments would revise the provisions in the Technical Specifications relating to the use of fuel manufactured by the Exxon Nuclear Company, Inc. in Cycles 5 through 8 in accordance with the licensee's application for amendment dated September 8, 1978.

Prior to issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

By December 22, 1978, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the

proceeding must file a written petition for leave to intervene. Requests for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR §2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial; or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who

has been admitted as a party may amend his petition, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, the petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene, become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

A request for a hearing or a petition for leave to intervene shall be filed with the Secretary of the Commission, United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Docketing and Service Section, or may be delivered to the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner or representative for the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at (800) 325-6000 (in Missouri (800) 342-6700). The Western Union operator should be given Datagram

Identification Number 3737 and the following message addressed to A. Schwencer: (Petitioner's Name and Telephone Number); (Date Petition was Mailed); (Prairie Island Nuclear Generating Plant, Unit No. 1 and 2); and (Publication Date and Page Number of this FEDERAL REGISTER Notice). A copy of the petition should also be sent to the Executive Legal Director, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, and to Gerald Charnoff, Esquire, Shaw, Pittman, Potts and Trowbridge, 1800 M Street, NW, Washington, D. C. 20036, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board designated to rule on the petition and/or request, that the petitioner has made a substantial showing of good cause for the granting of a late petition and/or request. That determination will be based upon a balancing of the factors specified in 10 CFR §2.714(a)(i)-(v) and §2.714(d).

Dated at Bethesda, Maryland, this 9th day of November, 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors