



**Northern States Power  
Company**

**Prairie Island Nuclear Generating Plant**

1717 Wakonade Dr. East  
Welch, Minnesota 55089

May 13, 1996

NRC Bulletin 96-02

U S Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

**PRAIRIE ISLAND NUCLEAR GENERATING PLANT**  
Docket Nos. 50-282 License Nos. DPR-42  
50-306 DPR-60

Response to NRC Bulletin 96-02  
Movement of Heavy Loads over Spent Fuel, over Fuel in  
the Reactor Core, or over Safety-Related Equipment

NRC Bulletin 96-02 requested a review of our plans and capabilities for handling heavy loads. Attached is our report outlining the results of our review to date. The detailed review has not been completed as we discuss in the attachment but will be completed expeditiously.

In this letter we have made new Nuclear Regulatory Commission commitments indicated as the italicized statements in the attachment.

Please contact Jack Leveille (612-388-1121, Ext. 4662) if you have any questions related to this letter.

*Michael D Wadley*

Michael D Wadley  
Plant Manager  
Prairie Island Nuclear Generating Plant

c: (see next page)

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NORTHERN STATES POWER COMPANY

c: Regional Administrator - Region III, NRC  
Senior Resident Inspector, NRC  
NRR Project Manager, NRC  
J E Silberg

Attachments:

1. Affidavit
2. Response to NRC Bulletin 96-02

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

DOCKET NO. 50-282  
50-306

BULLETIN 96-02, MOVEMENT OF HEAVY LOADS OVER SPENT FUEL, OVER  
FUEL IN THE REACTOR CORE, OR OVER SAFETY-RELATED EQUIPMENT

Northern States Power Company, a Minnesota corporation, with this letter is submitting information requested by NRC Bulletin 96-02.

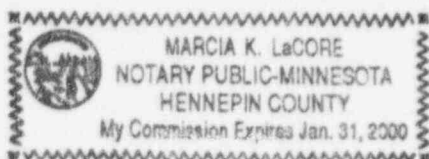
This letter contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

BY Michael D Wadley  
Michael D Wadley  
Plant Manager  
Prairie Island Nuclear Generating Plant

On this 13<sup>th</sup> day of May 1996 before me a notary public in and for said County, personally appeared Michael D Wadley, Plant Manager, Prairie Island Nuclear Generating Plant; and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true and that it is not interposed for delay.

Marcia K. LaCore



## RESPONSE TO NRC BULLETIN 96-02

### Bulletin 30-day Required Response:

For licensees planning to implement activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment within the next 2 years from the date of this bulletin, provide the following:

- A report, within 30 days of the date of this bulletin, that addresses the licensee's review of its plans and capabilities to handle heavy loads while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) in accordance with existing regulatory guidelines. The report should also indicate whether the activities are within the licensing basis and should include, if necessary, a schedule for submission of a license amendment request. Additionally, the report should indicate whether changes to Technical Specification will be required.

### PRAIRIE ISLAND REPORT:

Our Configuration Management group prepared a "Heavy Loads" Design Basis Document (HL DBD) document in 1990 which evaluated the design and licensing criteria against the plant configuration and administrative processes. Discrepancies found during this process were dispositioned in accordance with the Configuration Management procedures. The initial DBD was verified in depth (in 1990). The objectives of the verification were to verify that: (1) design bases information pertaining to the Heavy Loads Program was accurately reflected in Revision 0 of the HL DBD, (2) the implementation of the HL Program conforms to NRC requirements and NSP commitments, and (3) sufficient programmatic controls are in place to ensure continual compliance with regulatory requirements and NSP commitments.

Since 1990, the DBD has been revised twice. These revisions have focused on the changes that have taken place since the initial issuance of the HL DBD (e.g., upgrading the auxiliary building crane for the handling of spent fuel storage casks) and have not re-verified the details which were verified in depth in 1990. For the review requested by this bulletin, we are performing a verification in depth.

To date, we have performed the requested review to a level of detail to allow us to provide a response to the request for information with a reasonable level of assurance of its accuracy. Since the review has not been completed to the level of detail that we deem prudent (due to the resources necessary to complete such a review and the short reporting schedule specified in the bulletin), *we will continue the review of our heavy loads handling against the regulatory guidance and our licensing basis and communicate the results of the review.*

We have determined that, heavy loads are handled as described in the correspondence between the NRC and NSP in response to the December 22, 1980 letter from Darrell Eisenhut, Director of Licensing, NRR, to all licensees of operating plants, titled "Control of Heavy Loads" with two notable differences.

1. The Prairie Island auxiliary building crane was upgraded to meet the single-failure-proof criteria of Section 5.1.6 and Appendix C of NUREG-0612 in anticipation of handling spent fuel dry storage casks. Prior to handling the first dry storage cask, submittals to the NRC in support of Technical Specification changes regarding the use of the upgraded crane were made (see details starting on page 3).
2. A construction gantry crane can be temporarily installed for the purpose of installing or removing temporary spent fuel storage racks in Pool #1. The heavy load handling considerations utilizing this crane has been discussed in docketed correspondence with respect to a fuel pool re-rack modification. This correspondence occurred at roughly the same time period as that of the generic heavy load issue discussions. Since, at the time, this crane was thought of as temporary (just to be used during these modifications) it was never considered during our responses to the generic issues. In fact, the temporary racks were removed once using this crane and utilizing the heavy loads handling process reviewed by the NRC for the re-rack project. Also, the racks were installed and removed once using the upgraded auxiliary building crane. During this evolution, the rack movements were controlled by procedures which met heavy loads handling generic requirements but the rack movements have not been incorporated into the formal plant heavy loads handling program. Therefore, we need to determine the compliance of our use of the gantry crane with all aspects of NUREG-0612 and incorporate these potential movements into the plant heavy loads handling program. *We will ensure compliance with NUREG-0612, Section 5.1 prior to the next use of the gantry crane within the spent fuel pool enclosure or submit correspondence detailing any necessary exception and its basis.*

#### Licensing Basis

Our review to date has determined that we are in compliance with our current licensing basis with the exceptions of two Updated Safety Analysis Report (USAR) mis-statements. One mis-statement is of the plant configuration with respect to the clearance above the spent fuel pool enclosure roof and the auxiliary building crane. The other error is the weight given for the spent fuel pool protective covers; the USAR states a weight of 3700 pounds per cover (which is the weight that the design drawing designated) whereas the weight has been determined to be 4550 pounds. These mis-statements do not affect our compliance with NUREG-0612 and we anticipate correcting the errors through the 10CFR50.59 process.

### Technical Specifications

In addition, our review has determined that no Technical Specification changes will be required.

### License Amendment Requests

Because the discrepancies are likely remedied through the 50.50 process and there are no Technical Specification changes required, no license amendment requests need to be submitted.

Details regarding the upgraded auxiliary building crane follow:

### Prairie Island Cask Handling System

#### Design

In preparation for the dry cask storage project, the Prairie Island auxiliary building crane was upgraded in 1992 to meet the single-failure-proof criteria of Section 5.1.6 and Appendix C of NUREG-0612. The upgrade involved replacement the existing trolley structure and hoist with an Ederer, Inc. designed trolley and hoist. The Ederer single-failure-proof design is described in Revision 3, Amendment 3, to Generic Licensing topical Report EDR-1(P)-A, "Ederer Nuclear Safety-Related Extra Safety and monitoring (X-SAM) Cranes", dated October 8, 1982. The report describes the design and testing of the single-failure-proof features which are included in Ederer's X-SAM cranes intended for handling spent fuel casks and other safety related loads in a nuclear power plant. NRC staff approval of the report was documented in a Safety Evaluation transmitted by NRC letter dated August 26, 1983.

#### Licensing

NSP submitted the crane upgrade for approval to the NRC via letter dated October 4, 1991, as supplemented by letter dated December 16, 1991.

The NRC approved the license amendment request and issued License Amendment Nos. 99 and 92 to Facility Operating License Nos. DPR-42 and DPR-60 on July 9, 1992.

As requested in the July 9, 1992 approval, NSP submitted additional information to the NRC on January 25, 1993. This information was reviewed and found acceptable by the NRC on May 3, 1993.

In addition to the crane upgrade, the TN-40 cask and lifting system are designed to meet the single-failure proof requirements of NUREG-0612. The lift beam is designed, fabricated and tested in accordance with ANSI N14.6-1986. The cask trunnions are designed with an increased safety factor, as required by section 5.1.6 (3) of NUREG-0612.

The cask and lift beam design were reviewed as part of the dry cask storage Part 72 application. This cask design was approved and issued NRC license SNM-2506 on October 19, 1993.

The pre-operational load test of the cask trunnions was a subject of a separate NRC SER, dated June 12, 1995.

#### NRC Pre-Operational Inspection

Cask and lift beam fabrication, as well as load handling procedures and practices were reviewed by the NRC prior to initial cask loading during a special NRC inspection from January 24 through May 11, 1995. This inspection was documented in Inspection Report 50-282/95002(DRP); 50-306/95002; 72-10/95002(DRP), June 30, 1995. This inspection concluded:

The licensee satisfied all of the design and testing requirements specified in established industry standards for the control of heavy loads, such as dry cask storage.

Section 2 of this inspection report discussed the inspector's review of the Prairie island cask handling system, and included the areas of auxiliary building crane modification, post modification testing, load testing of the TN-40 lift beam, load testing of the auxiliary building crane, load testing of the cask trunnions, auxiliary building crane hook load test, cask transport vehicle route, special lifting device configuration, rated load of the auxiliary building crane, lid lift shank hook and rigging, NDE of the lid lifting bridle, and cask handling in the spent fuel pool.