UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT **DOCKET Nos. 50-282**
50-306

REQUEST FOR AMENDMENT TO
OPERATING LICENSES DPR-42 & DPR-60

LICENSE AMENDMENT REQUEST DATED January 29, 1997
Amendment of Cooling Water System Emergency Intake Design Bases

Northern States Power Company, a Minnesota corporation, by this letter dated October 1, 1998, with its attachment provides supplemental information in support of the subject license amendment request dated January 29, 1997. Attachment 1 provides a replacement paragraph for USAR Page 10.4-7 and Page 10.4-7 annotated showing which paragraph is replaced.

This letter and its attachments contain no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By Joel P. Sorensen
Joel P. Sorensen
Plant Manager
Prairie Island Nuclear Generating Plant

On this 1st day of October 1998 before me a notary public in and for said County, personally appeared, Joel P. Sorensen, 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.

Dale M. Vincent

DALE M. VINCENT
NOTARY PUBLIC-MINNESOTA
DAKOTA COUNTY
My Commission Expires Jan. 31, 2000

ATTACHMENT 1

SUPPLEMENT 16
to

LICENSE AMENDMENT REQUEST DATED January 29, 1997
Amendment of Cooling Water System Emergency Intake Design Bases

Replacement paragraph for Updated Safety Analysis Report Page 10.4-7 and annotated USAR Page 10.4-7 showing where the paragraph is replaced.

Replacement paragraph for USAR page 10.4-7
(see attached page for paragraph this replaces)

An evaluation was performed (Reference E) comparing the minimum water volume of the Intake Canal required for operator action to the minimum water volume of the Intake Canal available post-DBE. The minimum water volume available in the Intake Canal after a DBE, for both the design basis and bounding analysis cases, is two to three times the minimum volume required for operator action. This demonstrates a significant operating margin.

supply. There is an additional 2000 gpm demand from the diesel fire pump. Initially, the supply to the safeguards cooling water pumps is from both the intake canal and the emergency intake line. The stability of the intake canal banks has been evaluated (References B & C). The evaluations demonstrate that the intake canal will support the safeguards function of the cooling water system. The volume in the intake canal provides approximately 4.8 hours for a flow demand of 31750 gpm (Reference D).

Assuming no make up from the river to the intake canal, the volume in the intake canal is depleted in approximately 4.8 hours. After this time, the emergency intake line will be the sole supply of water to the cooling water pumps. It is necessary for the operators to reduce the cooling water system flow demand to a value within the capacity of the emergency intake line. Procedural guidance directs the operator which cooling water system loads to secure to reduce demand. Instrumentation provides the operator with cooling water header flow and pressure. The procedure ensures components needed to maintain safe shutdown are available.

An evaluation was performed (Reference E) comparing the minimum water volume of the Intake Canal required for operator action to the minimum water volume of the Intake Canal available post-DBE. In terms of percentage of total Intake Canal volume, 26.9% is the minimum required volume for operator action. The minimum water volume available in the Intake Canal after a design basis earthquake is 99.5% for the design basis case and 94.1% for the bounding analysis. This demonstrates a significant operating margin.

See replacement paragraph

The capacity of the EIL must support the minimum equipment required for safe shutdown. As stated above, it is assumed the equipment that is not qualified to seismic criteria does not function. Therefore, off-site power is lost and the instrument air system is not available. The following is the minimum equipment for safe shutdown and the design flow rate.

1 - Unit 1 Emergency Diesel Generator	900 gpm
2 - Auxiliary Feedwater Pumps (1 per unit)	440 gpm
2 - Component Cooling Heat Exchangers (1 per unit)	3600 gpm
1 - Control Room Chiller	320 gpm
2 - Containment Fan Coil Units (1 per unit)	900 gpm
Total	6160 gpm

Taken by itself, this would be the minimum required flow capacity of the EIL. However, cooling water system loads that are not isolated from the control room must also be considered as cooling water system demand. Also, a postulated crack in each non-safety related cooling water pipe off of the main header will increase the cooling water system demand. The cracks are postulated to be a result of the seismic event. The size is determined using the moderate energy line break methodology, that is, a circular opening of area equal to that of rectangle one-half pipe diameter in length and one half pipe wall thickness in width. (Reference F). The design flow information, the non-isolated loads and the leakage due to cracks in non-safety related pipes have been evaluated using a thermal-hydraulic computer model. The output of the model calculates that this configuration would result in a cooling water system flow demand of 10,643 gpm