Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401
Telephone (612) 330-5500

April 26, 1985

Director
Office of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

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

Supplemental Information Concerning License Amendment
Amendment Request dated July 11, 1984

Item No. 4 of the July 11, 1984 License Amendment Request, concerned the replacement of the 2000 ppm Boron concentration limit with a 10% deltaK/K limit. This letter responds to an NRC Staff request for additional information concerning the suggested 10% deltaK/K limit.

Prior to each refueling, our Nuclear Analysis Department prepares a Startup and Operations Report. Contained in this report is the boron concentration required to maintain the reactor shutdown by 10% deltaK/K with the "new" core loaded with all rods in, pressure 0 psig and the most limiting temperature between 68 and 140 degrees F. The boron concentration is calculated by our nodal code DP5, described in NADNSP 8101P Revision 1 (submitted to the NRC on 12/13/82). A bias, determined from hot zero power benchmarks, and a bounding reliability factor are added to the boron concentration calculated by DP5. The bounding reliability factor is 100 ppm (approximately 1% deltaK/K). The standard deviation for best estimate hot zero power calculations is 27 ppm, suggesting that the 100 ppm is conservative. The last three boron concentrations Nuclear Analysis Department reported to the plant are: 2154 ppm (Unit 1 Cycle 10), 2090 ppm (Unit 2 Cycle 9) and 2150 ppm (Unit 1 Cycle 9). The plant nuclear engineer places this boron concentration into plant procedures to ensure that this limit is met.

Please call if you have further questions.

David Musolf
Manager - Nuclear Support Services

DMM/TMP/tp

c: Regional Administrator-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
MPCA
Attn: F W Ferman
G Charnoff

A001
1/0