Northern States Power Company
Prairie Island Nuclear Generating Plant
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November 3, 1999

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

Comments on Preliminary Accident Sequence Precursor
Analysis of Operational Event (TAC NO. MA6561)

A preliminary Accident Sequence Precursor (ASP) analysis of an operational event that occurred at Prairie Island Nuclear Generating Plant, Unit 1, on January 5, 1999 (LER No. 282/99-001) was prepared by an NRC contractor, the Oak Ridge National Laboratory (ORNL). The results of the preliminary analysis indicated that this event may be a precursor for 1999. On September 28, 1999, the NRC sent a letter together with a copy of the preliminary ASP analysis to NSP for review and comment on the technical adequacy of the preliminary ASP analysis.

We basically agree with the accident sequences (or cut sets) obtained from the preliminary ASP analysis, but we do believe that the value of AFW pump common cause failure (CCF) probability used in the preliminary ASP analysis is overly conservative. According to NUREG/CR-5500, Vol. 1, Appendix E published in August 1998, four types of CCFs are normally included in the AFW system model. They are: a) failure of motor trains to start; b) pump-related failures to run, cross train type; c) failures in feed control segment; and d) failures on turbine steam supplies. The CCF group in this case involved Unit 1 MDAFW pump, Unit 1 TDAFW pump and Unit 2 MDAFW pump. The CCF types considered in this analysis should be limited to the pump-related CCF type only (not motor or other CCF types). The corresponding CCF probability for 3 AFW pumps (2 MDAFW pumps and 1 TDAFW pump) is less than 5.0E-6 according to NUREG/CR-5500. This value is much less than that used in the

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preliminary ASP analysis, 2.1E-4 for AFW-PMP-CF-ALL (Common-Cause Failure of AFW pumps). The 5.0E-6 AFW pump CCF probability will decrease the CCDP to 4.5E-7. Not only is this much less than 3.5E-6 obtained from the preliminary ASP analysis, but it is also less than the ASP cutoff value 1.0E-6.

Dr. Yu Shen, the Prairie Island PRA project manager, discussed the issues related to the preliminary ASP analysis with Dr. P. D. O'Reilly, ASP Program project manager of NRC on October 15. Dr. O'Reilly verified that ORNL did model the AFW system cross-tie capability between the two units in the preliminary ASP analysis (Unit 1 MDAFW pump, Unit 1 TDAFW pump and Unit 2 MDAFW pump), but the corresponding AFW pump CCF probability used in this analysis was not consistent with the model. Since the AFW pump CCF (AFW-PMP-CF-ALL) played a key role in this analysis, we believe that the value for AFW pump CCF used in the preliminary ASP analysis is overly conservative and should be corrected.

In this letter we have made no new Nuclear Regulatory Commission commitments. Please contact Jack Leveille (651-388-1121, Ext. 4142) if you have any questions related to this letter.

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