



Northern States Power Company

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March 16, 1988

PRIORITY ROUTING

First	Second
RC	RC
ETC	ETC
SCA	SCA
NI	NI
PL	PL
OR	OR
FILE	FILE

FILE *[Signature]*

Mr Charles E Norelius, Director  
Division of Reactor Projects  
U S Nuclear Regulatory Commission Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

PRAIRIE ISLAND NUCLEAR GENERATING PLANT  
Docket Nos. 50-282 License No. DPR-42  
50-306 DPR-60

Additional Information Related to Startup Physics Program

Reference: Letter dated December 31, 1987 from Charles E Norelius,  
NRC Region III, to C E Larson, NSP

The purpose of this letter is to provide additional information re-  
lated to the adequacy of corrective actions taken in response to Vio-  
lation No. 2 in NRC Region III Inspection Reports 50-282/87012 and 50-  
306/87011. This additional information was requested in your letter  
of December 31, 1987.

Frequency of Actual Power versus Indication Power Measurements

During power escalation, comparisons between the actual versus indi-  
cated power are made at several different power levels. Comparisons  
start at a point where the system is stable up through full power.  
Calorimetric measurements are performed at 20%, 35%, 60%, 90%, and  
100% power. In addition, the reactor power as measured by loop delta  
T is compared to the nuclear instrumentation system measured power  
during the escalation to full power.

A direct measurement of actual power versus indicated power is not  
possible during heatup.

Inaccuracies in Calculated Neutron Leakage

The prediction of excore detector responses were developed to give a  
general indication of expected response only. While our model gives a  
general idea of the relative response from cycle to cycle, it has sev-  
eral limitations in that it does not explicitly model such factors as  
downcomer boron concentration and temperature.

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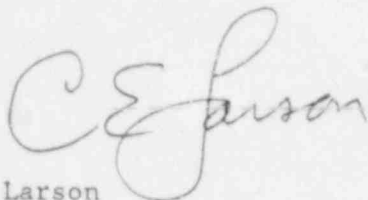
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By necessity, this model must make assumptions concerning the position of the control rods, which may or may not be valid when the excore responses are calibrated.

We are in the process of benchmarking this modeling technique to determine if uncertainties can be reduced. We believe that some model improvements can be made relatively easily to better predict excore detector response. These efforts will be completed prior to the restart from the next Unit No. 1 refueling outage this autumn.

Please contact us if you have any questions related to the additional information we have provided.



C E Larson  
Vice President Nuclear Generation

c: Regional Administrator, Region III, NRC  
Sr Resident Inspector, NRC  
Sr Project Manager, NRC  
G Charnoff