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U S Nuclear Regulatory Commission  
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Prairie Island Nuclear Generating Plant Unit 1  
Dockets 50-282  
License No. DPR-42

Northern States Power Company, a Minnesota Corporation (NSPM), Position on a Green Non-Cited Violation

Reference: 1) Letter from NRC to Mr. Michael D. Wadley, "Prairie Island Nuclear Generating Plant, Units 1 and 2, NRC Integrated Inspection Report 05000282/2009002; 05000306/2009002," dated May 14, 2009 (ADAMS Accession Number ML091350187).

In Reference 1, the NRC 2009 first quarter integrated inspection report identified a green self-revealed finding and a Non-Cited Violation of the Prairie Island Nuclear Generating Plant Operating License due to the failure to maintain Unit 1 reactor power below the thermal power limitation stated in the facility operating license.

NSPM understands the obligation to comply with the operating license and the associated licensed power limit at all times, and believes that compliance was maintained during the evolution discussed in the non-cited violation; the basis for denial is included in Enclosure 1.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Michael D. Wadley  
Site Vice President, Prairie Island Nuclear Generating Plant  
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC  
Director, Office of Enforcement, USNRC  
Resident Inspector, Prairie Island, USNRC

## ENCLOSURE 1

### **NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION (NSPM), POSITION ON A GREEN NON-CITED VIOLATION IN NRC INSPECTION REPORT NUMBER 05000282/2009002; ITEM 05000306/2009002-04 FAILURE TO ADHERE TO LICENSED POWER LEVEL SPECIFIED IN OPERATING LICENSE**

NSPM's intent is to always comply with the terms of the operating licenses granted by the Nuclear Regulatory Commission.

Over the last several years, the issue of compliance with the licensed power limit (LPL) has been the subject of a cooperative effort between the NRC and the Nuclear Energy Institute (NEI). This effort produced the NEI position statement, "Guidance to Licensees on Complying with the Licensed Power Limit." The NRC performed a safety evaluation of the NEI guidance for adhering to the licensed thermal power limit and endorsed this guidance via Regulatory Issue Summary (RIS) 2007-21, Revision 1, "Adherence to Licensed Power Limits." These documents form the basis for the following discussion and the conclusion that Prairie Island Nuclear Generating Plant (PINGP), Unit 1 maintained reactor power below the thermal power limitations stated in the facility operating license.

The NEI position statement, "Guidance to Licensees on Complying with the Licensed Power Limit" states that "No actions are allowed that would intentionally raise core thermal power above the LPL for any period of time. Small, short-term fluctuations in power that are not under the direct control of a license reactor operator (e.g., fluctuations caused by bi-stable flow in some boiling water reactors and secondary-side control valve oscillations for PWRs) are not considered intentional."

The NRC's safety evaluation states that, "Small, short-term fluctuations in power that are not under the direct control of a licensed reactor operator (e.g., fluctuations caused by bi-stable flow in some BWRs and secondary-side control valve oscillations for PWRs) are not considered intentional. RIS 2007-21 states that slight changes in thermal power may occur due to expected variances in plant parameters." The NRC safety evaluation also states that "Additionally, the maximum thermal power licensed limit is not considered to be exceeded when the short duration peaks are normal fluctuations inherent in the design of the controlling system as long as the average thermal power level is at or below the maximum thermal power licensed limit."

Two key points are highlighted in the NRC's safety evaluation endorsing the NEI's position paper. First, indicated reactor power will oscillate due to normal fluctuation inherent in the design of the controlling system. Second, the maximum thermal power licensed limit is not considered to be exceeded when the short duration peaks are normal fluctuations inherent in the design of the controlling system as long as the average thermal power level is at or below the maximum thermal power licensed limit.

During the time in question on January 2, 2009, a pre-planned evolution was performed that placed the 11 turbine-driven auxiliary feedwater pump in operation for testing. Feedwater flow was under automatic control during this evolution.

In order to obtain an average value for power that incorporates both peak high and low values, NSPM evaluated reactor power by averaging power over one oscillation period. For the calculation, an average period of 3 minutes, 29 seconds was used. The average power over one period is an acceptable method of calculating average power because then only one complete oscillation is included. If no value of average power over one period exceeds the LPL, then no larger spans of average power would exceed the LPL. Figure 1 provides reactor power as a running average over one period and compares the result to the Emergency Response Computer System data for the one minute averaged reactor power (1U0217A).

Considering the discussion above and Figure 1 in relation to the January 2, 2009 testing of the 11 turbine-driven auxiliary feedwater pump, NSPM draws the following conclusions:

- only the peaks of the one minute average oscillations exceeded the nominal 100% reactor power,
- the oscillations were due to automatic operation of the feedwater control system,
- the oscillations were not under direct control of a licensed reactor operator,
- the NEI position statement indicates that these oscillations are not considered intentional, and
- the average power, as measured by any means, including the shortest reasonable period (the period of one oscillation) never exceeded 100% reactor power.

Therefore, the maximum thermal power licensed limit was not exceeded because the short duration peaks were fluctuations inherent in the design of the controlling system and the average thermal power level was below the maximum thermal power licensed limit.

Figure 1: Unit 1 Average Power on 01/02/09

