



January 15, 2004

10 CFR 50.90

U S Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Palisades Nuclear Plant  
Docket 50-255  
License No. DPR-20

License Amendment Request: Increase Rated Thermal Power— Response To Request  
For Additional Information (TAC NO. MB9469)

By letter dated June 3, 2003, Nuclear Management Company, LLC (NMC), requested Nuclear Regulatory Commission (NRC) review and approval of a license amendment for the Palisades Nuclear Plant. NMC proposed to revise Appendix A, Technical Specifications, to increase rated thermal power by 1.4% from 2530 megawatts thermal (MWt) to 2565.4 MWt.

In December 2003, the NRC provided a draft request for additional information (RAI) regarding the above license amendment request. Following phone conversations with the staff, NMC concurs with the request and is providing the response in the attached enclosure.

Summary of Commitments

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 15, 2004.

Daniel J. Malone  
Site Vice President, Palisades Nuclear Plant  
Nuclear Management Company, LLC

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Enclosure (1)

CC Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC

**ENCLOSURE 1**  
**ADDITIONAL INFORMATION FOR INCREASING RATED THERMAL POWER**  
**LICENSE AMENDMENT REQUEST**

**NUCLEAR REGULATORY COMMISSION (NRC) REQUEST**

10 CFR 50.36 requires that the Technical Specifications specify limiting safety system settings for those variables that have significant safety functions. Instrumentation Systems and Automation Society (ISA) standard ISA S67.04, "Setpoint for Nuclear Safety-Related Instrumentation" was issued in 1994 and was partially endorsed by the NRC staff in Regulatory Guide 1.105, revision 3, dated December 1999. In its endorsement, the NRC staff excludes Part II of the standard. Part II includes three methods for calculating an allowable value (AV) as required by 10 CFR 50.36. When using Methods 1 and 2, AVs are calculated that are sufficiently conservative and are acceptable to the NRC staff. However, the NRC staff is generally concerned that Method 3, used by some licensees, including the Palisades licensee, does not necessarily provide an adequate margin to assure that the analytical limit (AL) is not violated. In Method 3, the total loop uncertainty (TLU) value is subtracted from the AL to derive the trip setpoint value, and then the uncertainty associated with the instrument channel operational test or channel functional test (COT/CFT) is added back to derive the AV. The TLU is the statistical combination of all uncertainties of a given instrument channel. The COT/CFT uncertainty is the statistical combination of all uncertainties associated with those instrument channel components that would be tested during the COT/CFT, which may include instrument drift, instrument reference accuracy, and setting tolerance. The NRC staff's concern is that Method 3 may not account for all uncertainties not measured during COT/CFT. An acceptable method for deriving the AV would require an independent calculation that would assure that the margin between AV and AL included all the uncertainties not measured during COT/CFT.

By application dated June 3, 2003, as supplemented by letters dated October 6 and December 10, 2003<sup>1</sup>, you propose a license amendment to increase the rated thermal power (RTP) at Palisades by 1.4 percent. Your December 10, 2003, letter addresses your use of Method 3 with respect to the Thermal Margin/Low Pressure (TM/LP) trip setpoint at the increased RTP. The NRC staff requires additional information regarding the protective trips other than TM/LP. For example, your application dated June 3, 2003, proposes that the Variable High Power Level Trip (VHPLT) be changed from its current setting of no more than 111 percent RTP to no more than 109.4 percent RTP. Based on the NRC staff's above-stated concern for Method 3, the NRC staff requests that you provide assurance of the adequacy of the proposed setting for VHPLT, and for all other trip functions adversely affected by the proposed increase in RTP for which you use Method 3 to calculate the AV, by performing this calculation in a manner that accounts for all loop uncertainties that are not measured during the COT/CFT.

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<sup>1</sup> The December 10, 2003, letter supplements a separate application for amendment dated October 17, 2002, which proposes a change to the Thermal Margin/Low Pressure trip setpoint for this proposed power increase.

## Nuclear Management Company, LLC Response

Only trip functions that use Q power to determine the respective trip setpoint are affected by the proposed increase in RTP. Q power is the higher of nuclear instrumentation (NI) power from the power range NI drawer or primary calorimetric power ( $\Delta T$  power) based on primary coolant system hot leg and cold leg temperatures. Only the TM/LP trip and VHPLT use Q power to determine their respective trip setpoint. Therefore, none of the other reactor protective system trips are affected by the proposed increase in RTP.

The uncertainty analysis for the VHPLT is provided in a plant engineering analysis. The analysis determines the uncertainties associated with the instrument channel COT and also determines the non-COT uncertainties. As the non-COT errors are not random in nature, the TLU was conservatively determined based on an algebraic summation of the COT and non-COT errors. For the VHPLT, the COT and non-COT errors are not combined using the square root of the sum of the squares method. Thus, the TSP would have been the same as using Method 1. Although Method 3 of the ISA standard was then used to determine the AV, the resultant numerical AV value is the same as would have been determined using Method 1 or 2 of the ISA standard. Based on this, the staff concern related to use of Method 3 is not applicable to the determination of the VHPLT allowable value.