

November 22, 2005

10 CFR 50.90

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

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

Response to Request for Additional Information Related to License Amendment  
Request for One-Time Extension to the Technical Specification Action Completion Time  
for Restoration of a Service Water Train to Operable Status

By letter dated April 1, 2005, Nuclear Management Company, LLC (NMC) requested Nuclear Regulatory Commission (NRC) review and approval of the subject license amendment for the Palisades Nuclear Plant. After subsequent discussions with the NRC staff, it was determined that a supplement was necessary, and by letter dated May 26, 2005, NMC submitted the supplement.

By letter dated July 29, 2005, the NRC issued a request for additional information (RAI) and NMC responded to the RAI by letter dated August 25, 2005.

By email dated September 22, 2005, the NRC issued an additional request for information. Enclosure 1 contains the response to the September 22, 2005 request.

A copy of this response has been provided to the designated representative of the State of Michigan.

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 November 22, 2005.



Paul A. Harden  
Site Vice President, Palisades Nuclear Plant  
Nuclear Management Company, LLC

Enclosure (1)

CC

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

**ENCLOSURE 1**  
**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION**  
**PALISADES NUCLEAR PLANT**

***NRC Request***

*We have identified an area where additional information (hopefully clarification, only) is needed from you on the above subject [Question on Palisades 1-Time Service Water AOT Request].*

*In your estimate of the risk from fires, NMC reviewed the fire areas and grouped them into three categories. NMC then looked at the potential risk impact for each category. We noted that you did not explicitly consider scenarios that would not only fail a SW pump, but also fail the ability to isolate portions of the headers, as required to meet the success criteria.*

*The following scenarios illustrate the issue; in each case, sufficient service water may not be available for success:*

*A fire that fails (SW pump P-7B or SW pump P-7A) AND (fails the circuitry for closing valve CV-1359). A fire that fails (SW pump P-7B or SW pump P-7A) AND (fails the circuitry for closing valve CV-0824 OR CV-0847).*

*Please confirm that there are no fire scenarios that would impact the ability of the operators to isolate service water to containment, or to isolate service water to the non-critical header that would also result in a plant transient and fail one of the remaining service water pumps.*

***NMC Response***

The circuits for the service water pumps (P-7A and P-7B) and the air-operated valves (CV-1359, CV-0824 and CV-0847) were re-examined. The results of the re-examination of circuits was compared with Appendix R Fire Safe Shutdown Analysis and confirmed to be consistent. Supporting information from the IPEEE for these components was evaluated and found to be consistent with circuit analysis and Appendix R information. The evaluations determined that there are several areas in the plant where a fire could result in failure of the circuits to one of the remaining operating service water pumps (P-7A or P-7B) and one of the air-operated valves (CV-1359, CV-0824 or CV-0847).

The areas are Fire Area 1 (Control Room), Fire Area 2 (Cable Spreading Room), Fire Area 4 (Bus 1C Switchgear Room), Fire Area 3 (Bus 1D Switchgear Room), Fire Area 9 (Screenhouse), Fire Area 13 (Auxiliary Building 590 Area), Fire Area 16 (Component Cooling Water Room) and Fire Area 34 (Manhole #1). For the areas identified there is a subset (fire areas 1, 2, 9 and 34) identified in a prior submittal where a fire could result in failure of all three service water pumps. For these areas, the failure of all three pumps would preclude the benefit of isolating

portions of the service water flow to allow cooling from one pump to equipment necessary for core heat removal. These areas which would fail all three pumps are excluded from further consideration since they would not result in a change in the core damage frequency as calculated in the IPEEE for the condition with pump P-7C removed from service.

NMC performed an evaluation and determined the increase in core damage frequency for the remaining areas, where a fire could fail one of the operating service water pumps, and one of the air-operated valves, given that pump P-7C is out-of-service. The initiating event frequencies used in the IPEEE for fires in these areas was used in this core damage assessment. All three air-operated valves and one operating service water pump were assumed to be failed due to the fire. The core damage assessment was performed using the transient event tree in the current plant PRA model. Since the assumed conditions were the same for all fire areas, the fire initiating event frequencies for the individual fire areas were aggregated into one initiating event frequency. The resultant core damage frequency for these fire areas is  $2.1\text{E-}07$ . The ICCDP for the change from 72 hours to 198 hours is  $2.2\text{E-}09$ . The ICLERP for the change is  $7.5\text{E-}12$ . These values, in combination with the previously reported values of ICCDP and ICLERP, would still be considered small changes with respect to the guidance.