

December 21, 2007

Mr. Michael D. Wadley
Site Vice President
Prairie Island Nuclear Generating Plant
Nuclear Management Company, LLC
1717 Wakonade Drive East
Welch, MN 55089

SUBJECT: GENERIC LETTER 2004-02 "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED WATER REACTORS" EXTENSION REQUEST APPROVAL FOR PRAIRIE ISLAND UNITS 1 AND 2 (TAC NOS. MC4707 AND MC4708)

Dear Mr. Wadley:

The Nuclear Regulatory Commission (NRC) staff has evaluated the information provided in Nuclear Management Company, LLC's letter dated December 5, 2007, supporting a request for an extension of the Prairie Island Nuclear Generating Plant Unit 1 and Unit 2 (PINGP) sump clogging corrective actions due date of December 31, 2007, stated in Generic Letter 2004-02 "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" to March 31, 2008.

The NRC staff has determined that it is acceptable for PINGP to extend the due date for completion of the ex-vessel downstream effects and in-vessel effects evaluations, as described in the enclosed staff evaluation of the extension request, until March 31, 2008. If you have any questions, please do not hesitate to call me at 301-415-8371.

Sincerely,

/RA/

Mahesh L. Chawla, Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

Enclosure: Staff Evaluation

cc w/encls: See next page

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EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
GENERIC SAFETY ISSUE-191/GENERIC LETTER 2004-02
APPROVAL OF EXTENSION REQUEST
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2
DOCKET NOS. 50-282, 50-306

In a letter dated December 5, 2007, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073400458) Nuclear Management Company, LLC (NMC) requested an extension to the corrective action due date of December 31, 2007, stated in NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" for the Prairie Island Nuclear Generating Plant Units 1 and 2 (PINGP). In its letter, NMC stated that PINGP has taken actions toward bringing PINGP into compliance with GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the spring and fall 2006 refueling outages. However, re-evaluation of downstream effects to address revised Westinghouse Commercial Atomic Power (WCAP)-16406-P, Rev. 1, and in-vessel effects analyses has not been completed. Therefore, an extension to the compliance due date of December 31, 2007 was requested to allow time for completion of these activities.

As stated in SECY-06-0078, proposed extensions to permit changes at the next outage of opportunity after December 2007 may be granted if, based on the licensee's request, the staff determines that:

1. the licensee has a plant-specific technical/experimental plan with milestones and schedules to address outstanding technical issues with enough margin to account for uncertainties, and
2. the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

In regard to the first criterion for approving an extension, NMC has a plant-specific plan, with milestones and schedules, to complete the PINGP GL 2004-02 required corrective actions by March 31, 2008. Specifically, NMC plans to complete its in-vessel and downstream effects analyses and provide the final submittal for resolution of GL-2004-02 by March 31, 2008. NMC has committed to evaluate and modify, as appropriate, the PINGP ECCS to support long-term decay heat removal and resolve the issues identified in GL 2004-02 by March 31, 2008.

In regard to the second criterion for approving an extension, NMC has stated that the following modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at PINGP, minimizing the risk of degraded ECCS and CSS functions during the extension period:

1. NMC stated that both Units at PINGP have in place new sump strainers. The new strainers increase the effective surface area from approximately 60 square feet (ft²) to 827.3 ft² for each unit. The strainers are designed to limit head loss to 10 ft during the post loss-of-coolant accident (LOCA) design conditions and to provide suitable ECCS pump suction head margin with the design-basis debris loading.
2. NMC stated that PINGP has implemented the following compensatory measures to reduce the risk which may be associated with potentially degraded or nonconforming ECCS and CSS recirculation functions:
 - Conducted training for operations and technical personnel to ensure that they are aware of Generic Safety Issue-191 issues and the plant changes implemented to address these issues,
 - Implemented procedural actions to provide clear direction to the operations and technical support staff for monitoring post-LOCA long term recirculation operation,
 - Increased minimum level in the refueling water storage tank,
 - Implemented measures to provide more aggressive requirements for containment closeout and foreign material controls.
3. NMC noted various considerations that indicate risk of inadequate sump performance is low, such as low probability of a large break LOCA and a 14-minute delay after such a LOCA before shift to recirculation occurs. This delay would provide some time for debris to settle in containment.

The NRC has confidence that NMC's plan, as described herein, will result in the installation of final GSI-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that NMC has put mitigation measures in place to adequately reduce risk for the 3-month extension period. Therefore, it is acceptable for NMC to complete its PINGP in-vessel effects and ex-vessel downstream effects analyses and update the PINGP licensing basis to reflect resolution of GSI-191 issues (completion of all GL 2004-02 corrective actions) by March 31, 2008.

Consistent with NRC's letter to the Nuclear Energy Institute dated November 30, 2007 (ADAMS Accession No. ML073320176), and as discussed in NMC's submittal, NMC should submit a supplemental response to GL 2004-02 by February 29, 2008. A final response should be submitted after all corrective actions for GL 2004-02 are complete.

Principal Contributor: E. Geiger, NRR

Date: December 21, 2007

Prairie Island Nuclear Generating Plant, Units 1 and 2

cc:

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July 2006