

December 21, 2007

Mr. Michael Balduzzi
Sr. Vice President, Regional Operations NE
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

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 PALISADES NUCLEAR PLANT (TAC NO. MC4701)

Dear Mr. Balduzzi:

The Nuclear Regulatory Commission (NRC) staff has evaluated the information provided in the Entergy Nuclear Operations, Inc. (ENO) letter dated December 3, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML073371169), and an e-mail from Mr. James L. Kuemin of ENO dated December 13, 2007 (ADAMS Accession No. ML073520134), supporting a request for an extension of the Palisades Nuclear Plant (PNP) 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 June 30, 2008.

The NRC staff has determined that it is acceptable for PNP to extend the due date for completion of the chemical effects testing, debris transport analysis and testing, ex-vessel downstream effects evaluation and in-vessel effects evaluations, as described in the enclosure, until June 30, 2008. Enclosed is the NRC staff evaluation.

It is also acceptable for ENO to withdraw a commitment made by the previous licensee of PNP (Nuclear Management Company, LLC) to submit a license amendment request no later than September 1, 2006, on the refueling water storage tank volume. This acceptance is based on ENO's statement that the amendment request is no longer needed. 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 No. 50-255

Enclosure: Staff Evaluation

cc w/encls: See next page

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*Safety Evaluation by memo dated 12/17/07

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EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

APPROVAL OF EXTENSION REQUEST

GENERIC SAFETY ISSUE-191/GENERIC LETTER 2004-02

PALISADES NUCLEAR PLANT

DOCKET NO. 50-255

In a letter dated December 3, 2007, (Agencywide Document Access and Management System (ADAMS) Accession No. ML073371169) Entergy Nuclear Operations, Inc. (ENO) requested an extension to the corrective action due date of December 31, 2007, stated in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" for the Palisades Nuclear Plant (PNP). In its letter, ENO stated that PNP has taken actions toward bringing PNP into compliance with GL 2004-02. PNP has replaced the 52 square feet (ft²) sump screens with a 3500 ft² passive sump strainers sized for the bounding loss of coolant accident debris load, installed new containment spray isolation valves with throttling capability, replaced the trisodium phosphate buffer with sodium tetraborate, and replaced the mechanical seals and seal coolers on the high pressure safety injection pumps. However, debris transport analyses, strainer testing for chemical effects and debris transport, evaluation of downstream effects to address revised Westinghouse Commercial Atomic Power (WCAP)-16406-P, Rev. 1, and in-vessel effects analyses to address WCAP 16530-NP have 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 NRC 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, ENO has a plant-specific plan, with milestones and schedules, to complete the PNP GL 2004-02 required corrective actions by June 30, 2008. Specifically, ENO plans to complete the debris transport computational fluid dynamics calculations, in-vessel analysis and downstream effects analysis by the end of first-quarter 2008 and complete chemical effects strainer testing by the end of second-quarter

2008. ENO has committed to completing GL 2004-02 corrective actions by June 30, 2008. In a December 13, 2007, e-mail from Mr. James L. Kuemin of ENO it was stated that in June, 2008, ENO would review the May, 2007 chemical effects strainer test results and develop documentation to form a basis for stating that GL 2004-02 corrective actions had been completed at PNP. In regard to the second criterion for approving an extension, ENO has stated that the following modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at PNP, minimizing the risk of degraded ECCS and CSS functions during the extension period:

1. ENO stated that the GL 2004-02 modifications previously communicated to the NRC have been implemented (as described above). Also, strainer debris head-loss testing and strainer bypass testing have been conducted.
2. ENO stated that PNP has implemented compensatory measures to reduce the risk which may be associated with potentially degraded or nonconforming ECCS and CSS recirculation functions. The most notable of these are:
 - Training for licensed operators on sump clogging,
 - Plant off-normal procedure with lowered unidentified leakage thresholds for Technical Specification corrective actions,
 - Procedure to provide specific direction for injecting water into the primary coolant system for alternate water source,
 - Steps to refill the reactor water storage tank,
 - Guidance on symptoms and identification of containment sump blockage with contingency actions in response to a blockage, loss of pump suction, and pump cavitation,
 - Procedure for securing one containment spray pump before the system is in alignment for recirculation, and
 - Procedures for cleanliness control of containment.

The NRC believes that ENO has a reasonable plan, as described herein, that should result in demonstration of acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that ENO has put mitigation measures in place to adequately reduce risk for the 6-month extension period. Therefore, it is acceptable for ENO to complete its PNP testing, analyses and corrective actions documentation by June 30, 2008.

While the NRC accepts the revised completion date above as reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects ENO to place a high priority on completing remaining actions and updating the licensing bases for PNP as soon as possible.

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Date: December 21, 2007

Palisades Plant

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