October 5, 2004

Dennis L. Koehl
Site Vice President
Point Beach Nuclear Plant
Nuclear Management Company, LLC
6590 Nuclear Road
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SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - COMPLETION OF LICENSING ACTION FOR GENERIC LETTER 96-06, "ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS" (TAC NOS. M96852 AND M96853)

Dear Mr. Koehl:

The Nuclear Regulatory Commission (NRC) staff issued Generic Letter (GL) 96-06, "Assurance of Equipment Operability and Containment Integrity During Design-Basis Accident Conditions," on September 30, 1996, to all holders of operating licenses for nuclear power reactors, except for those licenses that have been amended to possession-only status. GL 96-06 notified these licensees about two safety-significant issues that could affect containment integrity and equipment operability during accident conditions: (1) waterhammer and two-phase flow in the cooling water systems that serve the containment air coolers and (2) thermally-induced overpressurization of isolated water-filled piping sections in containment. GL 96-06 also requested the licensees to provide information to the NRC regarding these issues, implement appropriate corrective actions and provide information to the NRC regarding the implementation of those actions. Supplement 1 to GL 96-06 was issued November 13, 1997, to inform licensees about ongoing efforts and new developments and to provide additional guidance for completing corrective actions.

Both the Wisconsin Electric Power Company (WEPCO, the former licensee) and the Nuclear Management Company, LLC (NMC, the current licensee), provided responses to GL 96-06 for Point Beach Nuclear Plant, Units 1 and 2; WEPCO transferred operating authority of Point Beach to NMC on August 7, 2000, during resolution of the GL 96-06 issues for the plant. The following describes those responses and the results of the NRC staff's review.

Waterhammer and Two-Phase Flow

WEPCO provided the intial response regarding waterhammer and two-phase flow in its letters dated October 30, 1996, and January 28, 1997. These letters were supplemented by letters dated June 25 and December 18, 1997, as well as related correspondence dated July 23, August 30, September 9, and September 30, 1996. Per NRC staff's request, WEPCO, and later NMC, provided additional information in letters dated September 4, 1998, (WEPCO) and October 12, 2000, (NMC) while deferring some questions until after the Electric Power Research Institute (EPRI) developed an analytical methodology for analyzing the waterhammer

issue[1], a methodology that the NRC approved in an evaluation dated April 3, 2002. NMC then provided updated information regarding this issue to the NRC by letter dated July 30, 2002. However, NMC did not use the EPRI methodology per se. Additionally, NMC used computer codes that had not been reviewed nor approved by the NRC. Therefore, NMC provided, at NRC request, information to demonstrate its analyses were conservative relative to the approved EPRI methodology in its letters dated March 27 and November 3, 2003. The NRC staff has reviewed and is satisfied with NMC's evaluation of the waterhammer issue. The NRC staff finds that NMC's analyses are conservative relative to the EPRI methodology and that plant-specific risk considerations communicated to NRC in NMC's February 27, 2004, letter are consistent with the EPRI risk perspective.

NMC's February 27, 2004, letter also described the modifications and procedure changes that were made to resolve both the waterhammer and two-phase flow issues. Regarding the waterhammer issue, based on its analyses, NMC modified several service water system pipe supports to assure that design-basis stress criteria are not exceeded during a postulated waterhammer event. NMC also, to resolve both the waterhammer and the two-phase flow issues, made changes to the emergency operating and other plant procedures to include system performance and configuration considerations. Additional NMC action to resolve two-phase flow concerns included modifications to provide redundant automatic isolation of the major non-essential service water heat loads (except the turbine hall heat loads). These modifications were done to assure sufficient margin to boiling for the containment fan coolers. NMC also included instructions in the emergency operating procedures to isolate the non-essential turbine hall heat loads, as necessary, prior to establishing containment sump recirculation.

The NRC staff did not perform a detailed quantitative assessment of NMC's waterhammer and two-phase flow analyses. Nor did staff review NMC's use and application of computer codes for performing these analyses. Consequently, these areas could be the subject of future NRC audit or inspection activities. However, the NRC staff is satisfied with NMC's actions and considers the waterhammer and two-phase flow elements of GL 96-06 to be closed.

Thermally-Induced Overpressurization

WEPCO responded to the overpressurization issue in its January 28 and December 18,1997, and May 26 and October 23, 1998, letters to the NRC. In the January 28, 1997 submittal WEPCO identified seven penetrations on each unit as potentially vulnerable to a water solid volume that may be subjected to an increase in pressure due to heating of trapped fluid. The penetrations were: Reactor Coolant Pump Seal Water Return Lines, Containment Demineralized (DI) Water Supply Lines, Pressurizer Relief Tank Makeup Water Lines, Auxiliary Charging Lines, Containment Heating Ventilation and Air Conditioning (HVAC) Condensate Return Lines, Reactor Coolant System (RCS) Sample Lines, and Safety Injection Test Lines. In

[1]The EPRI methodology is documented in EPRI Technical Report (TR) 1003098, "Generic Letter 96-06 Waterhammer Issues Resolution: Technical Basis Report" (April 2002) and TR 1006456, "Generic Letter 96-06 Waterhammer Issues Resolution: User's Manual" (April 2002). These two reports were formally known as TR 113594, "Resolution of Generic Letter 96-06 Waterhammer Issues," Volumes 1 and 2 (December 2000).

the same submittal, WEPCO determined that these penetrations were operable based on the criteria in Appendix F of Section III of the American Society of Mechanical Engineers Code, the relief function of isolation valves or the draining of the line prior to returning the unit to operation.

For long term corrective action, WEPCO proposed installing pressure relief valves on the Reactor Coolant Pump Seal Water Return Lines and the RCS Sample Lines, cutting and capping the Containment HVAC Condensate Return Lines and revising the containment integrity checklist for the Containment DI Water Supply Lines to ensure that the piping is drained and the DI water supply is adequately isolated from the isolated piping section. WEPCO stated in the December 18, 1997 submittal that it had completed the first two proposed actions for Unit 2. WEPCO implemented corresponding Unit 1 modifications during the spring 1998 refueling outage. In the October 23, 1998, submittal, WEPCO informed the NRC that it had completed the proposed update of the containment integrity checklists for both Units 1 and 2. In the same submittal, WEPCO stated that it had added a valve and a drain on the supply side of the containment isolation valves to better isolate the containment piping from the water supply for Unit 1 - a change that WEPCO had proposed in the January 28, 1997, submittal. WEPCO also determined that Unit 2's different DI piping configuration allowed for an existing valve to be used to isolate DI water from the Unit's penetration isolation valves and that addition of a valve and drain were not necessary for Unit 2. The NRC staff concludes that WEPCO's corrective actions provide an acceptable resolution for the GL 96-06 issue of thermally-induced pressurization of piping runs penetrating the containment.

Finally, the staff concludes that all requested information has been provided; therefore, it considers GL 96-06 to be closed for Point Beach Nuclear Plant, Units 1 and 2.

Sincerely,

/RA/

Harold Chernoff, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

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