

January 19, 2005

LICENSEE: Nuclear Management Company, LLC

FACILITY: Point Beach Nuclear Plant, Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE HELD ON JANUARY 10, 2005, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND NUCLEAR MANAGEMENT COMPANY, LLC, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission staff (the staff) and representatives of Nuclear Management Company, LLC (NMC) held a telephone conference on January 10, 2005, to discuss and clarify the staff's requests for additional information (RAIs) concerning the Point Beach Nuclear Plant, Units 1 and 2, license renewal application. The conference call was useful in clarifying the intent of the staff's RAIs.

Enclosure 1 provides a listing of the meeting participants. Enclosure 2 contains a listing of the RAIs discussed with the applicant, including a brief description on the status of the items. Enclosure 3 contains draft responses provided by the applicant.

The applicant had an opportunity to comment on this summary.

/RA/

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License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosures: As stated

cc w/encls: See next page

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Summary of Telephone Conference Held on January 10, 2005

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TO DISCUSS THE POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION

JANUARY 10, 2005

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Nuclear Regulatory Commission
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Nuclear Regulatory Commission

DRAFT REQUESTS FOR ADDITIONAL INFORMATION (RAI)
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION

January 10, 2005

The U.S. Nuclear Regulatory Commission staff (the staff) and representatives of Nuclear Management Company, LLC (NMC) held a telephone conference call on January 10, 2005, to discuss and clarify the staff's requests for additional information (RAIs) concerning the Point Beach Nuclear Plant, Units 1 and 2, license renewal application (LRA). The following RAIs were discussed during the telephone conference call.

2.3.1.1 Class 1 Piping/Components System

RAI 2.3.1.1-1

In the LRA Tables 2.3.1-1, 2.3.1-6 and 2.3.3-1, heat exchangers have been identified as component type within the scope of license renewal. However, specifically for these heat exchangers, the pressure boundary was identified as the only intended function requiring aging management, but not their heat transfer function. The staff requests the applicant to clarify why the heat transfer function need not be identified as within scope requiring aging management.

Discussion: The applicant clarified their draft response. The applicant will provide their formal response in writing.

2.3.1.2 Reactor Vessel

RAI 2.3.1.2-1

Staff position on reactor vessel flange leak-off lines is that unless a plant specific justification is provided, the components should be in scope requiring aging management. Please confirm whether any of the component type listed in Table 2.3.1-2 (Reactor Vessel) or Table 2.3.1-6 (Non-Class 1 RCS Components System) of the LRA include the subject components. If not, then the subject components should be identified as within scope requiring aging management, or provide a plant specific justification.

Discussion: The applicant clarified their draft response. The applicant will provide their formal response in writing.

2.3.1.4 Pressurizer (PZR)

RAI 2.3.1.4-1

LRA Drawings 541F091 Sh.2 and 541F445 Sh.2 show that the pressurizer relief tank (PRT) is in scope; whereas its sub-components, such as the PRT spray, the rupture disk, and the associated pipings are shown to be outside the scope. The staff believes that failure of PRT spray, rupture disk, and/or the associated pipings can result in failure of the PRT itself to perform its intended function. The staff, therefore, requests the applicant to include the PRT spray, rupture disk, and the associated pipings within the scope of license renewal, or to

provide an explanation as to how failure of the PRT sub-components will not degrade the intended functions of the PRT.

Discussion: The applicant clarified their draft response. The applicant will provide their formal response in writing.

RAI 2.3.1.4-2

In Table 2.3.1-4 (Pressurizer) of the LRA, PZR spray head was not listed as a component type subject to an AMR. But the LRA drawings 541F091 Sh.1 and 541F445 Sh.1 show that the PZR spray head are in scope. Please clarify. The staff believes that loss of the spray head due to aging will result in the failure of the pressure control function of the PZR which may be relied upon during and following design-basis events (DBE) and/or regulated events. If the spray head was excluded from the scope, then the following additional information is requested:

a) The staff requests the applicant to justify how the components (spray head and associated pipings inside pressurizer) which are relied upon for pressure control function during plant transients, as stated in the LRA (page 2-79), do not require any aging management during the extended period of operation?

b) The staff requests the applicant to clarify if the current licensing basis (CLB) for fire protection(FP) complies with certain sections of Appendix R, particularly Section III.G, which provides the requirements for the fire protection safe shutdown capability. Discuss if the pressurizer spray head and associated piping are credited and relied upon in the fire protection safe shutdown analysis to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R. If it is credited in the fire protection safe shutdown analysis, the pressurizer spray head and associated piping would satisfy 10 CFR 50.48, Appendix R requirements; and therefore, should be included within the scope of license renewal. The specific intended function of the subject components which meets the 10 CFR 54.4(a)(3) requirements is the spray function, and the particular components which help perform this function are the section of piping and the spray head located inside the pressurizer. Note that the subject components do not have pressure boundary function. The staff requests the applicant to describe whether the loss of spray function can make it impossible to bring the plant to cold shutdown conditions within the given time for compliance with Appendix R. If so, then the staff requests that the spray head and the associated piping inside pressurizer having the spray function be included within the scope requiring aging management so that it should provide a reasonable assurance that an adequate spray function will be maintained inside the pressurizer during the extended period of operation.

Discussion: The applicant clarified their draft response. The applicant will provide their formal response in writing.

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION**

The following information is provided in response to the Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) regarding License Renewal Application (LRA).

The NRC staff's questions are restated below, with the Nuclear Management Company (NMC) response following.

NRC Question RAI 2.3.1.1-1:
Class 1 Piping/Components System

In the LRA Tables 2.3.1-1, 2.3.1-6 and 2.3.3-1, heat exchangers have been identified as component type within the scope of license renewal. However, specifically for these heat exchangers, the pressure boundary was identified as the only intended function requiring aging management, but not their heat transfer function. The staff requests the applicant to clarify why the heat transfer function need not be identified as within scope requiring aging management.

NMC Response:

Based on the PBNP Current Licensing Basis (CLB), none of the Heat Exchanger (HX) components represented in Tables 2.3.1-1, 2.3.1-6 and 2.3.3-1, have a license renewal intended function of heat transfer, and therefore heat transfer function was not listed, only the pressure boundary function was listed.

Table 2.3.1-1 refers to the Reactor Coolant Pump (RCP) Thermal Barrier Heat Exchangers (HXs). PBNP CLB shows that heat transfer from the thermal barrier is not a safety-related function (reference letter NPL 97-0401 from Wisconsin Electric to NRC), and therefore heat transfer is not an intended function for these HXs.

Table 2.3.1-6 refers to the RCP motor oil coolers. The RCPs are powered from non-safety related power supplies, and are assumed to be lost during some accident scenarios. Heat transfer from the motor oil coolers is not a safety-related function, and therefore heat transfer is not an intended function for these HXs.

Table 2.3.3-1 refers to miscellaneous HXs in the Chemical and Volume Control System (CVCS), including the regenerative HX, the non-regenerative HX, the excess letdown HX, the seal water HX, the boric acid evaporator, and the boric acid evaporator condensate HX. All of these HXs are non-essential loads and heat transfer from these HXs is not relied upon for any safety related function, and therefore the heat transfer function is not an intended function for these HXs.

NRC Question RAI 2.3.1.2-1:

Reactor Vessel

Staff position on reactor vessel flange leak-off lines is that unless a plant specific justification is provided, the components should be in scope requiring aging management. Please confirm whether any of the component type listed in Table 2.3.1-2 (Reactor Vessel) or Table 2.3.1-6 (Non-Class 1 Reactor Coolant System Components System) of the LRA include the subject components. If not, then the subject components should be identified as within scope requiring aging management, or provide a plant specific justification.

NMC Response:

The reactor vessel flange leak detection lines do not perform or support any license renewal system intended functions that satisfy the scoping criteria of 10 CFR 54.4 and, therefore, are not within the scope of license renewal.

Each of the reactor vessel flange leak detection lines includes a 3/16-inch diameter orifice in the Reactor Pressure Vessel (RPV) flange which would limit any potential Reactor Coolant System (RCS) leakage to within the capacity of a charging pump in the unlikely event of leakage past the inner O-ring. Since the leak detection lines are non safety-related, and their potential failure would not prevent satisfactory accomplishment of any safety-related functions, the leak detection lines do not perform or support any license renewal intended functions that meet the scoping criteria of 10 CFR 54.4(a) and thus an Aging Management Review (AMR) is not required.

NRC Question RAI 2.3.1.4-1:

Pressurizer (PZR)

LRA Drawings 541F091 Sh.2 and 541F445 Sh.2 show that the Pressurizer Relief Tank (PRT) is in scope; whereas its sub-components, such as the PRT spray, the rupture disk, and the associated pipings are shown to be outside the scope. The staff believes that failure of PRT spray, rupture disk, and/or the associated pipings can result in failure of the PRT itself to perform its intended function. The staff, therefore, requests the applicant to include the PRT spray, rupture disk, and the associated pipings within the scope of license renewal, or to provide an explanation as to how failure of the PRT sub-components will not degrade the intended functions of the PRT.

NMC Response:

The PRT was conservatively included in-scope, due to the PZR safety/Power Operated Relief Valve (PORV) discharge header being in scope for the 10 CFR 50.48 regulated event. The discharge header was included as an Appendix R flow boundary to assure availability of a PZR safety for Reactor Coolant Pressure Control. Since the discharge header terminates inside of the PRT, we conservatively included the PRT in-scope. Both the discharge header and the PRT are not Safety Related components.

The PRT is designed to accommodate leakoffs/flows from various relief valves inside of containment for cleanliness/contamination control concerns. It is also designed to handle a “design discharge” from a PZR safety valve, which equates to 110% of the steam volume above the full-power PZR water level setpoint. This steam volume was established as the design sizing basis because it corresponds to a reasonable occurrence and because it is not practical to design the tank to contain the largest conceivable discharge. If a discharge should occur that exceeds this limit, the relief device (rupture disk) on the tank would pass the discharge through the tank to containment. The rupture disk is fail-safe (it is designed to fail), and any age-related degradation could not prevent this function.

The PRT sub-components (PRT spray, the rupture disk, and other associated piping) were not included in-scope, as they do not meet any of the 10 CFR 50.54 scoping criteria. None of these subcomponents are safety related (Criterion 1). The PRT is non-SR, and therefore a failure of these subcomponents do not affect the function of any safety related components (Criterion 2). For the Appendix R scenario (regulated event - Criterion 3), none of these subcomponents are required to function in order to maintain the availability of the PZR safety. In the Appendix R scenario, the primary goal is to minimize loss of RCS inventory during cooldown, so boundary valves (like the PZR PORVs) are failed closed. The PZR safety valve is not expected to be used in this scenario, but only needs to be available to protect the integrity of the RCS in case the heat sink is lost.

Based on this reasoning, the PRT sub-components were determined to not be in-scope.

NRC Question RAI 2.3.1.4-2:

Pressurizer (PZR)

In Table 2.3.1-4 (Pressurizer) of the LRA, PZR spray head was not listed as a component type subject to an AMR. But the LRA drawings 541F091 Sh.1 and 541F445 Sh.1 show that the PZR spray head are in scope. Please clarify. The staff believes that loss of the spray head due to aging will result in the failure of the pressure control function of the PZR which may be relied upon during and following design-basis events (DBE) and/or regulated events. If the spray head was excluded from the scope, then the following additional information is requested:

- a) The staff requests the applicant to justify how the components (spray head and associated pipings inside pressurizer) which are relied upon for pressure control function during plant transients, as stated in the LRA (page 2-79), do not require any aging management during the extended period of operation?
- b) The staff requests the applicant to clarify if the current licensing basis (CLB) for fire protection (FP) complies with certain sections of Appendix R, particularly Section III.G, which provides the requirements for the fire protection safe shutdown capability. Discuss if the pressurizer spray head and associated piping are credited and relied upon in the fire protection safe shutdown analysis to bring the plant to cold shutdown conditions within a given time for compliance with Appendix R. If it is credited in the fire protection safe shutdown analysis, the pressurizer spray head and associated piping would satisfy 10 CFR 50.48, Appendix R requirements; and therefore, should be included within the scope of license renewal. The specific intended function of the subject components which meets the 10 CFR 54.4(a)(3) requirements is the spray function, and the particular components which help perform this function are the section of piping and the spray head located inside the pressurizer. Note that

the subject components do not have pressure boundary function. The staff requests the applicant to describe whether the loss of spray function can make it impossible to bring the plant to cold shutdown conditions within the given time for compliance with Appendix R. If so, then the staff requests that the spray head and the associated piping inside pressurizer having the spray function be included within the scope requiring aging management so that it should provide a reasonable assurance that an adequate spray function will be maintained inside the pressurizer during the extended period of operation.

NMC Response:

The spray head (austenitic stainless steel casting) is a non-pressure boundary subcomponent and is secured in place by a locking bar (18-8 type 304). This subcomponent was initially placed within the scope of license renewal due to its affiliation with the PZR, but was determined not to require aging management because it does not serve a pressurizer component intended function.

The pressurizer spray function is necessary for RCS pressurizer pressure control. As noted in WCAP-14574-A, "Aging Management Evaluation for Pressurizers", the RCS pressure control function of the pressurizer is not relied on to prevent or mitigate any of the consequences of design basis events. The pressurizer spray function is credited in the Appendix R safe shutdown analysis to cool and depressurize the RCS at 25 degrees F per hour using auxiliary spray.

Since the Fire Protection 10 CFR Part 50 Appendix R criteria allow up to 72 hours to achieve cold shutdown, this spray function is not required.

The spray heads are attached to the spray nozzles inside the pressurizers and do not perform a pressure boundary function. The function of the pressurizer spray heads is to enhance the efficiency (i.e., RCS pressure control response time) of pressurizer spray during plant transients by dispersing the spray flow in the pressurizer steam space, thereby maximizing condensation of the steam bubble.

It should be recognized that the design pressurizer spray flow is 400 gallon per minute (gpm), whereas auxiliary spray flow with one charging pump is only 30 gpm. Therefore, the effectiveness of the spray head is diminished during its use in the auxiliary spray mode.

Failure of the spray head would not prohibit the 120^oF spray water from entering the pressurizer, condensing a portion of the steam, and cooling the bulk pressurizer liquid volume.

As previously mentioned, the flow rate of auxiliary spray using one charging pump is 30 gpm. Assuming the anticipated liquid level of the pressurizer for the Appendix R fire scenario condition (30%), the entire pressurizer liquid volume (approximately 2500 gallons) could be replaced in less than 1.5 hours during a plant cooldown.

During the Appendix R fire scenario time period, this volume could be replaced multiple times, if required. This injection of cold water into the pressurizer, in combination with securing the normally energized proportional heaters, will result in significant cooling of the lower pressurizer shell. As a result, the lower pressurizer shell will act as a heat sink and cool the upper portion of the shell by direct conduction, in addition to its heat losses to the containment environment. Condensation of the steam will occur by heat transfer to the internal walls of the pressurizer and

to the liquid surface at the vapor/water interface. Although some temperature stratification of the liquid volume may occur near the surface (i.e., vapor/water interface) as the steam condenses, the introduction of cold water into the top of the pressurizer will provide for mixing as the bulk fluid is drawn out of the bottom of the pressurizer through the surge line. The pressurizer heat losses to the containment environment are compensated for by the proportional heaters which have a rated capacity of >123 Kilowatts (KW). Approximately 25 KW of this capacity is required to make up for the ambient heat losses. Thus, the pressurizer ambient heat losses are approximately 100,000 Btu/Hr. This further supports the conclusion that the Appendix R fire scenario time period provides ample time to reduce pressurizer pressure.

The use of auxiliary pressurizer spray is the preferred procedural method for RCS pressure reduction in an Appendix R fire scenario. An alternate method is also available to accommodate RCS pressure reduction. In the alternate approach, the pressurizer is taken to solid conditions, and pressure control is established using the CVCS system directly. Use of auxiliary spray for pressure control is not credited in the alternate method.

The pressurizer spray heads at PBNP are not relied on to demonstrate compliance with Appendix R postulated fire events, therefore the spray heads have no intended function for license renewal.