

February 25, 2005

NRC 2005-0019
10 CFR 54

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

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
License Nos. DPR-24 and DPR-27

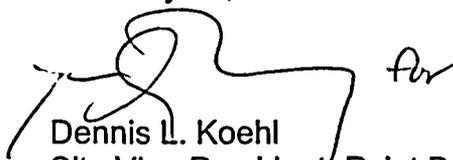
Response to Request for Additional Information
Regarding the Point Beach Nuclear Plant License Renewal Application
(TAC Nos. MC2099 and MC2100)

By letter dated February 25, 2004, Nuclear Management Company, LLC (NMC), submitted the Point Beach Nuclear Plant (PBNP) Units 1 and 2 License Renewal Application (LRA). On January 26, 2005, the Nuclear Regulatory Commission (NRC) requested additional information regarding the Scoping and Screening Results; Structures (Section 2.4 of the LRA). The enclosure to this letter contains NMC's response to the staff's questions.

Should you have any questions concerning this submittal, please contact Mr. James E. Knorr at (920) 755-6863.

This letter contains no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the forgoing is true and correct. Executed on February 25, 2005.



Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

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cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE

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 the Point Beach Nuclear Plant (PBNP) License Renewal Application (LRA).

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

Section 2.4 - Scoping and Screening Results; Structures

NRC Question RAI 2.4-1

After the listing of each component group in LRA Section 2.4, the word "All" is indicated. What is the intent from the usage of the word "all" as depicted in your application?

NMC Response

The intent of "ALL" at the end of each component group was to signify that all of the material/environment items associated with the component group were included. No further meaning or intent was implied.

NRC Question RAI 2.4-2

The LRA Section 2.4 does not appear to contain information about tanks and their foundations. Provide a list of all tanks and their foundations for each unit. Identify the tanks and their foundations that are or should be in scope and define their intended functions. Identify the tanks and their foundations that are not or should not be in scope and the basis for their exclusion. Specify where the AMR for each in-scope tank and tank foundation is or should be located in the LRA.

NMC Response

Tanks are associated with the system in which they reside. They are addressed and scoped in the mechanical section of the LRA, Section 2.3. The tables in LRA Section 2.3 have a component group, "Tanks." The license renewal drawings for the systems are listed and tanks that are in-scope are highlighted on the drawings. Tanks are not individually identified by component number in the LRA but the LRA basis documentation does contain individual component information which is available for review on-site.

Tank foundations are scoped in LRA Section 2.4 and are typically constructed of concrete or steel. Tanks foundations and intended functions are typically presented in LRA Section 2.4.8, "Yard Structures," Section 2.4.10, "Component Supports Commodity Group," or individual section for the building. Tank and tank foundation AMR information is contained in the corresponding Sections 3.1 through 3.5 of the LRA.

NRC Question RAI 2.4-3

The LRA Section 2.4 does not appear to contain information about thermal insulations on piping and/or structures that performs an intended function. The staff is aware that the concrete temperatures around the main steam and feed water lines were found to be about 380°F for an unknown period of time. Thermal insulation is usually used between the hot piping and concrete to maintain the maximum temperature of concrete below the threshold levels of 150°F for general areas and 200°F for local areas around hot penetrations. Thermal insulation is passive and long-lived, and serves an intended function in accordance with 10 CFR 54.4(a)(2). Therefore, the applicant is requested to (1) identify the locations of the thermal insulations that serve an intended function in accordance with 10 CFR 54.4(a)(2), (2) describe plant-specific operating experience related to the degradation of thermal insulation, and (3) describe the scoping and screening results of thermal insulations and provide technical bases for their exclusion.

NMC Response

Thermal insulation for structures is discussed in Section 2.1.3.1.2, page 2-45, of the LRA.

2.1.3.1.2 Screening of Thermal Insulation

In response to NRC staff requests for additional information (RAI) on other license renewal applications, a screening review has been performed of thermal insulation. The review identified only one location where thermal insulation is within the scope of license renewal. Insulation is installed on the main steam and main feedwater containment penetrations, and is needed to maintain steady-state concrete temperatures less than 150 degrees F. This insulation is enclosed in the annulus and is not subject to wetting, and there are no plausible aging effects that could warrant aging management.

The insulation for the containment penetrations is considered to be in-scope but having no intended functions or aging effects. The initial request for plant-specific operating experience regarding the degradation of thermal insulation on the containment penetrations was contained in RAI 3.5-3. The operating experience was provided by NMC letter dated August 26, 2004. In that letter, NMC committed to inspect the penetrations that exhibited the high temperature (i.e., greater than 150°F).

NRC Question RAI 2.4-4

LRA Table 2.4.2-1 lists wood/outdoor as a component group in scope and missile barrier as the intended function for the control building structure. Explain what this wood/outdoor component is and why and how the wood component serves as a missile barrier.

NMC Response

The emergency diesel generator air-intake louvers are protected by a missile barrier. The missile of concern is from environmental sources. The missile barrier is constructed from structural steel and the outside face is made from C-channels. Treated wood timbers are bolted to the C-channels and are part of the missile barrier along with the steel C-channel.

NRC Question RAI 2.4-5

LRA Section 2.4.3 states that the intake crib and the discharge flumes are connected to the forebay and the CW pumphouse structures and provide functions for water intake and discharge, respectively. However, only the forebay and the circulating water pumphouse structures are in scope. Provide your rationale for excluding the intake crib and the discharge flumes from license renewal.

NMC Response

The intake crib is located 1750 ft. from the shore in a water depth of 22 ft. Water flows from the intake crib to the pumphouse forebay via two 14 ft. diameter, corrugated, galvanized, structural plate pipes buried to a minimum depth of 3 ft. below the lake bed. The water flows from a common Unit 1 and Unit 2 forebay through bar grates and traveling screens (8) to the suction of the CW service water, and firewater pumps. The water exits the plant through the two discharge flumes.

The Circulating Water Pumphouse is a Seismic Class I structure common to Unit 1 and Unit 2. It houses the firewater and service water pumps in addition to the CW pumps. The intake crib, intake pipes, forebay bar grates, discharge flumes, and traveling screens are non-safety related, non-QA, seismic class III structures and components.

There are four separate and independent flow paths into the forebay. Included are two 14-ft. diameter offshore intake pipes and backflow from two CW discharge flow paths. The CW discharge flow paths consist of backflow from the discharge flume into the surge chamber via the sealwell. Any one of the four independent flow paths will provide substantially more flow than the firewater and service water pump supply requirements. The service water and firewater system need to pass less than 5% of the Circulating Water Pumphouse total design capacity (i.e., 712,000 gpm). No credible simultaneous failure of the four independent flow paths could occur to preclude lake water from reaching the firewater and service water pumps.

AEC Safety Evaluation dated July 15, 1970, has evaluated the failure of both 14-ft. diameter offshore intake pipes. In this event, it was concluded that lake water for service water pumps can be provided directly to the seal well from the CW discharge flume. AOP-13A, "Circulating Water System Malfunction," provides this guidance in the event of blockage of the intake crib and dropping forebay level.

In conclusion the non-safety related, non-QA, and seismic class III intake crib, intake pipes, and discharge flumes do not affect any safety-related system structure or component (SSC) intended functions in accordance with 10 CFR 54.4(a)(2) and therefore are not within the scope of license renewal.

NRC Question RAI 2.4-6

The staff was unable to identify whether the traveling water screens, as shown in the License Renewal drawing LR-M-212-SH-2, are included in scope. If they are in scope, please indicate where in the LRA they are discussed. If not, provide your rationale for their exclusion.

NMC Response

The traveling water screens are not within the scope of license renewal. The forebay bar grates and traveling screens are non-safety related, non-QA, seismic class III structures and components.

The service water and firewater pumps are the essential plant equipment that always require a water supply. The Circulating Water Pumphouse structures and components are designed/sized for a maximum CW flow rate of 712,000 gpm (both units or 178,000 gpm per CW pump) plus the flow rates of the service water and firewater pumps. Typical flow rates for the service water system in accident conditions vary, up to a maximum of 21,000 gpm (one unit in normal operation, second unit experiencing a design basis accident). The flow rates of the service water and firewater pumps represent less than 5% of the total design flow (i.e., 712,000 gpm) into the forebay.

Neither the non-safety related forebay bar grates (gross filtration) or traveling screens (finer filtration) could prevent passing the less than 5% total design flow rate from reaching the suction of the firewater or service water pumps. It is not credible that a total blockage condition could develop, (i.e., a non-safety affecting safety condition). The bar grates and traveling screens are not relied on in a safety analyses or plant evaluations to perform a function that demonstrates compliance with the NRC's regulations for fire protection (FP).

In conclusion, the non safety-related, non-QA, seismic class III traveling screens are out-of-scope of license renewal. Substantial clogging of these components will not prevent the firewater or service water pumps from obtaining minimum supply requirements.

NRC Question RAI 2.4-7

LRA Table 2.4.4-1 lists crane rails supports as a component group in scope. Explain whether the crane, rails, hoists, and lifting devices are also in scope. If not, provide your rational for their exclusion.

NMC Response

The boundary between the building structures and their associated cranes is at the rail support / rail interface, (i.e., all components from the rail and above) are associated with the crane. The rail support system is considered part of the building structure. Table 2.4.4-1, "Diesel Generator Building Structure," contains the Component Group, "Structural Carbon Steel/Indoor-All," which includes the structural steel that supports the crane rails.

Cranes are discussed in Section 2.4.9, "Cranes, Hoists, and Lifting Devices System," of the LRA. The specific components comprising this license renewal system are the passive load-bearing structural members (bridge and trolley), and/or structural beams, and girders of these cranes, hoists, and lifting devices, including the crane rails and hardware. Therefore, these passive components are considered in-scope.

All other components of the crane or hoist are considered active or have no component-level intended functions. This includes, but is not limited to, control panels, lights, switches, terminal boxes, motors, cameras, brakes, gears, and cables. These components and subcomponents are considered out-of-scope.

NRC Question RAI 2.4-8

LRA Section 2.4.8 states that yard transformer and tower concrete foundations, and transformer fire walls are not in scope. Explain the function of each item listed above and provide your rational for their exclusion.

NMC Response

The license renewal electrical power distribution drawing depicting the in-scope systems/components are shown on LR drawing LR-Electrical-E1. The corresponding civil structures that support the power distribution are depicted on LR drawing LR-E-100, Sheet 1. An example of a yard transformer that is not in-scope would be the Unit Auxiliary Transformers (X02s). Consequently, the foundation for the X02s would not be in-scope. The High Voltage Station Auxiliary Transformers (X03s) and their corresponding foundations are an example of an in-scope transformer.

Four high voltage transmission line towers provide power to the switchyard. Each tower has a concrete foundation. These towers are outside the in-scope area as defined by the portions of the switchyard that are part of the PBNP current licensing basis for SBO

in accordance with 10 CFR 50.63. As depicted on LRA drawing LR-Electrical-E1, these towers and their associated foundations are not in-scope.

The transformer firewall is a structure constructed between the two Low Voltage Station Auxiliary Transformers (X04s). The firewall was installed in 1991 as a result of a weakness from a property loss stand point and reliability of offsite power as cited by Nuclear Mutual Limited Insurance (NML). This wall is not installed to comply with 10 CFR 50.48. Therefore, the firewall is not within the scope of license renewal.

NRC Question RAI 2.4-9

LRA Section 2.4.9 states that the reactor cavity manipulator cranes and the SFP bridge crane are not in scope. Provide evidence that their collapse would not damage any safe shutdown equipment.

NMC Response

At the end of refueling operations, the reactor cavity manipulator crane is stowed and shutdown. By operating instruction, OI 23, "Containment Fuel Transfer Equipment," the manipulator crane is parked in its storage location and all power is removed. When properly stowed during normal operations the manipulator crane is not considered a seismic non-safety related affecting safety-related hazard. This crane is parked in a location such that no safety-related equipment would be affected by structural failure of the crane.

The SFP bridge crane does not interface with or impact any safety-related component. In addition the bridge assembly is designed with hold down bars fitted around the rail to prevent any type of tipping. The SFP bridge hoist handles fuel. The potential radiological consequences for the postulated fuel handling accident as described in FSAR Chapter 14.2.1 are well within the dose guidelines of 10 CFR 100.

NRC Question RAI 2.4-10

LRA Section 2.4.12 states that the reinforced concrete foundation slab and switchgear anchors are in scope, but the remaining portions of the 13.8 KV switchgear building structure are not in scope. Is the foundation slab supported by foundation footings? If so, the foundation footings should also be in scope. Since the interior walls, exterior masonry block and concrete walls, and the roof are not in scope, provide evidence that their collapse would not damage any safe shutdown equipment.

NMC Response

The 13.8 KV switchgear building slab is supported by foundation footings that are considered in-scope. Specific scoping basis is applied to buildings and structures associated with equipment of the regulated events of 10 CFR 54.4(a)(3). For the civil discipline, the regulated events of concern include station blackout (SBO) and FP. Refer to the LRA Section 2.4.12, "System Function Listing" for additional information. The foundation and footings for the 13.8 KV switchgear building are listed in LRA Table 2.4.12-1, "13.8 KV Switchgear Building Structure" "CONCRETE/OUTDOOR - ALL: FOUNDATION - SPREAD FOOTING AND BASEMAT" Component Group.

A detailed explanation of the regulated events scoping basis is presented in the NMC response to RAI 2.4-12 in this letter.

Note that the superstructure of the 13.8 KV Switchgear Building is managed as part of the routine preventative maintenance practices at PBNP.

In conclusion, the collapse of the superstructure of the 13.8KV building would not damage any safe shutdown equipment.

NRC Question RAI 2.4-11

LRA Section 2.4.13 states that the above grade block wall portion of the superstructure, including the roof, of the fuel oil pumphouse structure is not in scope. Provide evidence that their collapse would not damage any safe shutdown equipment.

NMC Response

The SSCs in the Fuel Oil Pump House are not safety-related and do not support safe shutdown equipment.

Specific scoping basis is applied to buildings and structures associated with equipment of the regulated events of 10 CFR 54.4(a)(3). For the civil discipline, the regulated events of concern include SBO and FP. Refer to the LRA Section 2.4.13, "System Function Listing" for additional information. A detailed explanation of the regulated events scoping basis is presented in the NMC response to RAI 2.4-12 in this letter.

It should be noted that the superstructure of the Fuel Oil Pumphouse structure is managed as part of the routine preventative maintenance practices at PBNP.

In conclusion, the collapse of the Fuel Oil Pump House superstructure will not damage any safe shutdown equipment.

NRC Question RAI 2.4-12

LRA Section 2.4.14 states that turbine generator G05 and its associated mechanical and electrical equipment is housed in the gas turbine building structure, and is relied upon as the alternate AC power source during a SBO. It is also relied upon to supply power to safe shutdown loads through the alternate shutdown equipment during a fire in the 4160 VAC switchgear. LRA Section 2.4.14 further states that only the concrete foundation slab and the turbine-generator concrete equipment pedestals are in scope, and the remaining portions of the structure, which include the steel superstructure, are not in-scope. Provide evidence that the functions of turbine generator G05 and its associated mechanical and electrical equipment will not be impaired due to the collapse of the remaining portions of the gas turbine building structure.

NMC Response

Presented below is the basis for scoping buildings and structures associated with equipment of the regulated events of 10 CFR 54.4(a)(3). In particular, for the civil discipline, this pertains to SBO and FP.

The following are selected excerpts from the license renewal standard review plan NUREG 1800, Section 2.1.3.1.3, dealing with regulated events scoping methodology.

"...Systems, structures, and components (SSCs) relied on in safety analyses or plant evaluations to perform functions that demonstrate compliance with the requirements of the fire protection, environmental qualification, pressurized thermal shock (PTS), anticipated transients without scram (ATWS), and station blackout (SBO) regulations are identified."

NUREG 1800 continues with: "The scoping criteria in 10 CFR 54.4(a)(3) require an applicant to consider *"[a]ll SSC relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the [specified] Commission regulations[.]"* In addition, the Statement of Considerations (SOC), Section III. c. (iii) states that the Commission intended to limit the potential for unnecessary expansion of the review for SSCs that meet the scoping criteria under 10 CFR 54.4(a)(3), and provides additional guidance that qualifies what is meant by *"those SSCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission regulations. . ."* in the following statement:

"...the Commission intends that this [referring to 10 CFR 54.4(a)(3)] scoping category include all systems, structures, and components whose function is relied upon to demonstrate compliance with these Commission's regulations."

Therefore, all SSCs that are relied upon in the plant's CLB (as defined in 10 CFR 54.3), plant specific experience, industry-wide experience (as appropriate), and safety analyses or plant evaluations to perform a function that demonstrates compliance with the NRC's regulations identified under 10 CFR 54.4(a)(3) are required to be included

within the scope of the rule. For example, if a non-safety related diesel generator is required for safe shutdown under the FP plan, the diesel generator and all SSCs specifically required for that diesel to comply with and operate within the Commission's regulations based on the applicant's design specifications for that diesel shall be included within the scope of license renewal under 10 CFR 54.4(a)(3). This may include, but should not be limited to, the cooling water system or systems required for operability, the diesel support pedestal, and any applicable power supply cable specifically required for safe shutdown in the event of a fire.

In addition, the last sentence of the second paragraph in the SOC, Section III. c. (iii) provides the following guidance for limiting the scoping criteria under 10 CFR 54.4(a)(3) as it applies to the use of hypothetical failures:

"Consideration of hypothetical failures that could result from system interdependencies, that are not part of the current licensing bases and that have not been previously experienced is not required."

The SOC does not provide any additional guidance relating to the use of hypothetical failures or the need to consider second-, third-, or fourth-level support systems for scoping under 10 CFR 54.4(a)(3). Therefore, in the absence of this guidance, hypothetical failures or second-, third-, or fourth-level support systems need not be considered in determining the SSCs within the scope of the rule under 10 CFR 54.4(a)(3). For example, if a non safety-related diesel generator is relied upon only to remain functional to demonstrate compliance with the NRC SBO regulations, the applicant need not consider the following SSCs: (1) an alternate/backup cooling water system, (2) non-seismically-qualified building walls, or (3) an overhead segment of non-seismically qualified piping (in a Seismic II/I configuration). This guidance is not intended to exclude any support system (identified by an applicant's CLB, actual plant-specific experience, industry-wide experience, as applicable, safety analyses or plant evaluations) that is specifically required for compliance with or operation within the applicable NRC regulation.

The applicant is required to identify the systems, structures, and components whose functions are relied on to demonstrate compliance with these regulated events (that is, whose functions were credited in the analysis or evaluation). Mere mention of a system, structure, or component in the analysis or evaluation does not constitute support of an intended function as required by the regulation.

PBNP uses the non safety-related gas turbine generator G-05 as the Alternate AC (AAC) source in response to the SBO event. G-05 support systems and structures, all non-safety related include but are not limited to:

- G-05 foundation and building.
- G-05 fuel oil, tank and tank foundation, fuel oil piping.
- G-05 cooling water, pipe, tank and foundation (a closed system).
- G-05 electrical cable, conduit, tray and duct banks
- G-05 associated electrical distribution equipment and their foundations.

G-05 and its direct support systems are within the scope of license renewal. Direct support systems/structures are those that are essential to the operability of the specific SSCs that are relied upon to perform the required functions for the regulated event. Those systems and structures that are not essential, nor provide direct support, are considered the second, or third-level support systems/structures.

The PBNP CLB contains no safety analyses or plant evaluations that credits the building or requires second or third level failure analysis for G-05 or its building. Based on this and the scoping methodology described above, the building superstructure is not within the scope of license renewal. The concrete pedestal/foundation that supports G-05 is within the scope of license renewal, for it provides direct support and is essential to the operation of G-05. This same logic is applied to the fuel oil tank foundation, fuel oil transfer pump foundation, electrical distribution equipment foundations, and the duct banks. The Fuel Oil Pumphouse and 13.8 KV Switchgear buildings (but not their superstructures) are therefore in-scope.

In conclusion, the building foundations that support G-05 and its support equipment are in-scope. The building superstructure is out-of-scope of license renewal. Refer to LRA Section 2.4.14, "System Function Listing" for additional information.

Note that the superstructure of the Gas Turbine Building Structure is managed as part of the routine preventative maintenance practices at PBNP (i.e., good building maintenance or life-cycle management).