

March 30, 2006

C. N. Swenson
Site Vice President
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P.O. Box 388
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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
OYSTER CREEK NUCLEAR GENERATING STATION, LICENSE RENEWAL
APPLICATION (TAC NO. MC7624)

Dear Mr. Swenson:

By letter dated July 22, 2005, AmerGen Energy Company, LLC (AmerGen or the applicant) submitted to the U.S. Nuclear Regulatory Commission (NRC or the staff) an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54), to renew the operating license for Oyster Creek Nuclear Generating Station. The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review.

These questions were discussed with members of your staff during several conference calls throughout February and March 2006. A mutually agreeable date for a response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-3191 or via e-mail at DJA1@nrc.gov.

Sincerely,

/RA/

Donnie J. Ashley, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure:
As stated

cc w/encl: See next page

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Oyster Creek Nuclear Generating Station

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DISTRIBUTION: Ltr. to C.N. Swenson from Donnie Ashley dated: March 30, 2006

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Adams Accession No.: MI060890395

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**OYSTER CREEK NUCLEAR GENERATING STATION
LICENSE RENEWAL APPLICATION (LRA)
REQUEST FOR ADDITIONAL INFORMATION (RAI)**

RAI 4.3-1

Section 4.3.1 of the license renewal application indicates that the fatigue usage (based on the use of projected cycles for 60-years) for the reactor vessel closure studs, the vessel support skirt and the basin seal skirt to vessel flange junction was predicted to exceed the Oyster Creek acceptance limit of 0.8. The application also indicates that the fatigue usage of these components was shown to be acceptable by using more refined analysis methods. Describe the more refined analyses that were performed for these components.

RAI 4.3-2

Section 4.3.1 of the license renewal application indicates that the reactor vessel feedwater nozzles were reanalyzed to account for the effects of rapid thermal cycling. The application also indicates that the analysis satisfied the original Oyster Creek reactor vessel design limits. However, Table 4.3.1-2 of the license renewal application indicates that the 40-year fatigue usage of the feedwater nozzle was 0.952. Clarify whether the reanalysis of the feedwater nozzle for the rapid thermal cycling satisfied the original Oyster Creek reactor vessel design fatigue limit of 0.8. Also, indicate when the analysis that calculated the fatigue usage of 0.952 was performed and provide the basis for its acceptance.

RAI 4.3-3

Section 4.3.3.2 of the license renewal application discusses the fatigue evaluation of the isolation condenser. Provide the following information regarding the evaluation:

- a. The application indicates that a fatigue analysis was not performed as part of the original component design. The application also indicates that a later evaluation was performed for the tube bundle replacement in 1998. The application further indicates that the design life of the tube bundle replacement is 1500 cycles. Explain how the design life of 1500 cycles was determined. Provide the fatigue usage based on the peak stresses calculated for the Oyster Creek tube bundle replacement.
- b. The application references the fatigue analysis of the Nine Mile Point Unit 1 isolation condenser. The application indicates that the Nine Mile Point, Unit 1 isolation condenser stress and fatigue results are considered bounding for Oyster Creek. Provide a detailed discussion of how it was determined that the Nine Mile Point, Unit 1 analysis was bounding for Oyster Creek. The discussion should include a comparison of the isolation condenser sizes and the sub-component materials, geometries and thicknesses. The discussion should also address the tube and shell thermal transients and flow rates.
- c. The application indicates that the isolation condenser piping outside of the containment was evaluated for fatigue as part of a leak-before-break (LBB) analysis completed in 1991. The application also indicates that the piping outside the drywell was replaced in 1992. Provide the design criteria that was used to evaluate the

replacement piping, including the number and types of thermal transients analyzed. Provide the maximum calculated fatigue usage for the replacement piping.

RAI 4.3-4

Section 4.3.4 of the license renewal application discusses the evaluation of the effects of the reactor coolant environment on the fatigue life of components and piping. Table 4.3.4-1 provides the overall environmental fatigue multipliers for the components analyzed. Provide the calculation of the environmental factors for the RPV inlet and outlet nozzles and the feedwater nozzle. Explain how each parameter used in the calculation was determined.

RAI 4.6-1

Section 4.6 of the license renewal application discusses the fatigue of the primary containment. The application indicates that a structural evaluation of drywell thinning at various locations was performed in 1986 and 1987. Describe the structural evaluation that was performed and indicate whether the evaluation involved any TLAAAs.

RAI 4.7.3-1

The staff needs the following additional information to complete its review of this TLAA:

- a. An explanatory figure of the equipment pool and the reactor cavity wall areas affected by the rebar corrosion and leakages.
- b. The extent of areas of walls affected by the corrosion and leakages.
- c. Calculated maximum stresses in the affected rebars during (1) normal operating condition, (2) the postulated accident condition, and (3) during the postulated seismic event for which the walls are designed.
- d. The effect of the 60-year corrosion on the stresses calculated in Item c. above.

RAI 4.7.3-2

The staff requests the applicant to provide (1) the bases for the corrosion rate established in the analysis, (2) assertions that these rates will not be exceeded during the period of extended operation, and (3) a summary of the program for monitoring the actual corrosion of the rebar during the period of extended operation.

RAI 4.7.3-3

The staff requests the applicant to provide the quantitative aspect (i.e., corrosion rate and amount of corrosion predicted) in Section A.5.3 of the UFSAR Supplement.