

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 a conference call on March 8, 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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Oyster Creek Nuclear Generating Station -2-

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

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Adams accession no.: ML060890412

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

RAI 3.2-1

In LRA Table 3.2.2.1.3 the applicant states that for stainless steel closure bolting in indoor air (external) environment there are no aging effects requiring management (AERMs). The staff requests the applicant to provide the following information:

- a. Justification for excluding loss of preload and loss of closure integrity as aging mechanisms.
- b. Specific industry guidance for ventilation closure bolting relating to AERMs (e.g., EPRI documents, published reports, operating experience etc.).
- c. Sizes and locations of the bolting.

RAI 3.2-2

In LRA Table 3.2.2.1.3 the applicant states that loss of material in a number of components is managed by the Periodic Inspection of Ventilation Systems (B.2.4) aging management program. The staff requests the applicant to provide the specific tests and inspections including frequency and methods of inspections, preventive actions, parameters monitored and inspected, detection of aging effects, acceptance criteria and operating experience in the applicant's aging management program (B.2.4) that relate to each of the following line items in the standby gas treatment system:

- a. Loss of material in aluminum duct work in an external soil environment.
- b. Loss of material in brass piping and fitting in an outdoor air (external) environment. In addition, identify the specific brass composition.
- c. Loss of material in copper piping and fittings in an outdoor air (external) environment. In addition, identify the specific copper composition.

RAI 3.2-3

In LRA Table 3.2.2.1.3 the applicant identified no AERMs for plexiglass duct work in an internal and external indoor air environment. The staff requests the applicant to discuss its current maintenance practices for plexiglass in this environment as well as vendor recommendations in this regard. In addition, the staff requests the applicant to identify the specific composition of this plexiglass material and its operating experience at Oyster Creek.

RAI 3.4-1

In LRA Table 3.4.2.1.2 the applicant states that loss of material of buried aluminum piping and fittings in an external soil environment will be managed by the Buried Piping Inspection Program (B.1.26). The staff requests the applicant to provide the following information regarding the management of the aging effects:

- a. Identify the type of loss of material which is expected to occur (pitting, cracking, general corrosion etc.).
- b. Operating experience with this material in this environment.
- c. Type of external coatings and wrappings which will be used and the preventive measures to keep them in place.

RAI 3.4-2

In LRA Table 3.4.2.1.2 the applicant states that loss of material of aluminum tanks in an air (internal and external) and external soil environments will be managed by the Aboveground Outdoor Tanks Program (B.1.21). The staff requests the applicant to provide the following information relative to the tanks:

- a. Specific alloy composition of the tank material.
- b. Description of the tank supports.
- c. Aging management of the sealant or coatings on the tank bottom, if any.
- d. Operating experience with the tanks.
- e. Purpose of the tanks (including a description of the services performed) and any other material in contact with its internal and external surfaces, such as expansion joints, piping connections etc.
- f. Specific tests, wall thickness measurements and inspections which assure that the leak tightness of the tanks is maintained in the internal and external outdoor air and soil environments.

RAI 3.4-3

In LRA Table 3.4.2.1.2 the applicant states that loss of material in stainless steel tanks in internal and external outdoor air environments is managed by the Aboveground Outdoor Tanks Program (B.1.21). The staff requests the applicant to provide the following information:

- a. Description of the tanks including supports and other connecting piping.
- b. Specific tests and inspections (including wall thickness measurements) in the Aboveground Outdoor Tanks Program (B.1.21), which are performed relative to these tanks to assure structural integrity.
- c. Operating history of these tanks.

RAI 3.4-4

In LRA Table 3.4.2.1.3 the applicant states that carbon and low alloy steel piping and fittings in containment atmosphere (external) have no aging effects. According to the applicant the aging effect in the GALL Report for this component, material and environment combination is not applicable (Note I). The applicant cites a previous staff evaluation in which the staff had concluded that loss of material is not an aging effect for carbon steel components in a containment nitrogen environment, because of negligible amounts of free oxygen (less than 4 percent by volume) during normal operation.

The staff believes that due to leakage of moisture and presence of oxygen during plant shutdown, the potential for degradation of carbon steel components cannot be ruled out over an extended period of time. Therefore, there is a need for a one-time inspection prior to the period of extended operation, unless the applicant can provide additional assurance in support of its position (e.g., monitored data from the Oyster Creek containment nitrogen environment to indicate that the free oxygen levels have been continuously maintained below threshold levels and would continue to be maintained during the period of extended operation). The staff requests the applicant to justify its position or alternately, commit to a one-time inspection of these components prior to the period of extended operation.

RAI 3.4-5

In LRA Table 3.4.2.1.3 the applicant states that for carbon and low alloy steel valve bodies, in external containment air and treated water environments, there are no AERMs. The staff requests the applicant to address the concerns described in RAI 3.4-4, as they are also applicable to carbon and low alloy steel valve bodies. The staff requests the applicant to justify and provide basis for its response.

RAI 3.4-6

In LRA Table 3.4.2.1.4 the applicant states that there are no AERMs for the following main condenser subcomponents:

- a. Carbon and low alloy steel main condenser shell in indoor air (external) and steam (internal) environments,
- b. Titanium main condenser tubes in a raw salt water (internal) and steam (external) environment, and
- c. Aluminum/bronze tubesheet in a raw salt water (internal) and steam (external) environment.

The applicant further states that aging management of the main condenser is not based on analysis of materials, environments and aging effects. Condenser integrity required to perform the post accident intended function (holdup and plate out of MSIV leakage) is continuously confirmed by normal plant operation. Therefore, the applicant states that no traditional aging

management review or aging management is required. The staff requests the applicant to provide the following information relating to the main condenser at Oyster Creek or provide justification that this information does not apply:

- a. Operational and maintenance history of the main condenser, summarizing the significant abnormal conditions or events which may have occurred in the past. This summary should include a brief discussion of the root cause determination and evaluation of these events, if available. The staff is particularly interested in events related to fouling, insulation failure, tube ruptures or major leaks, expansion joint failures, condenser air in-leakage and condenser tube microbiologically induced corrosion.
- b. Discuss any concerns related to condenser capacity under power uprate conditions.

RAI 3.4-7

In LRA Table 3.4.2.1.6 the applicant states that for carbon and low alloy steel expansion joints, flow element and thermowells, in an internal and external containment atmosphere environment, there are no AERMs. As discussed in RAI 3.4-4 above, the staff considers a one-time inspection prior to the period of extended operation to be appropriate for these components. The staff requests the applicant to respond to these concerns as they relate to the main steam system and justify its position.

RAI 3.4-8

In LRA Table 3.4.2.1.6 the applicant states that for carbon and low alloy steel piping and fittings and valve bodies in internal and external containment air and internal treated water environments, the applicant has identified no AERMs. As discussed in RAI 3.4-4 above, the staff considers a one-time inspection prior to the period of extended operation to be appropriate for these components. The staff requests the applicant to respond to the above concerns as they relate to the main steam system and justify its position.

RAI 4.7.1-1

The staff requests the applicant to discuss any major repairs, modifications or replacements done in the past which affected the original design basis of the reactor building, turbine and heater bay cranes at Oyster Creek. Also identify any lifts at or in excess of the capacity of these cranes which have occurred in the past.

RAI 4.7.1-2

The staff requests the applicant to discuss the operational history of the three cranes within the scope of license renewal.

RAI B.2.1-1

The staff requests the applicant to discuss any aging mechanisms for the piping support materials in the containment air environment. In addition provide the bases for identifying these aging mechanisms or identifying no aging mechanism for the environment and material combination.

RAI B.2.1-2

As stated in the LRA, the applicant conducts flow tests with air rather than water. The staff believes that since the reaction forces on the supports and the spray nozzles are substantially less with air flow versus water flow, the periodic flow tests simply assure that there is no clogging of the spray nozzles but do not test the structural integrity of the spray system under actual operating conditions. The staff's concern is that the piping supports and nozzles may not be able to withstand the forces exerted during accident conditions when water is turned on and potentially result in a failure of the spray system. Therefore, the staff requests the applicant to provide justification to assure that the structural integrity of the system under accident conditions will be maintained during the period of extended operation.

RAI B.2.4-1

In LRA Section B.2.4 the applicant states that existing ventilation system periodic preventive maintenance activities will be enhanced as follows:

“Instrument piping and valves, restricting orifices and flow elements, thermowells and Standby Gas Treatment System ducts exposed to soil will be added to the scope of the plant implementation documents.”

The staff requests the applicant to provide a listing of the line items in the LRA AMR Tables which would be within the scope of this AMP and would be credited.

RAI B.2.4-2

In LRA Section B.2.4, the applicant states that existing ventilation system periodic preventive maintenance activities will be enhanced as follows:

“Specific guidance for identification of applicable aging effects will be added to preventive maintenance documents.”

The information in the LRA suggests that the identification of the aging effects is currently based on qualitative acceptance criteria. The staff requests the applicant to discuss in detail the enhancements to indicate whether or not any aging effects would be identified on the basis of quantitative acceptance criteria such as durometer reading limits for identification of aging effects in elastomers.