From: D. Ashley
To: John Hufnagel
Date: 11/06/2006 8:18:04 AM
Subject: Fwd: Questions

John-

Attached are the questions from ACRS.

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regards,

Donnie Ashley
NRR/DLR/RLRA
Oyster Creek
License Renewal Project Manger
301-415-3191
dja1@nrc.gov

>>> Cayetano Santos 11/06/2006 >>>
Donnie,

Attached are the list of questions that the staff and AmerGen should be prepared to address during the January 2007 subcommittee meeting for the Oyster Creek license renewal. Please forward them on to John Hufnagel.

Thanks,
Tanny

CC: Hansraj Ashar; Louise Lund; Michael Modes; Noel Dudley; Richard Conte; Sujit Samaddar

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ACRS Plant License Renewal Subcommittee
Questions Regarding Oyster Creek License Renewal Application

1. Describe in detail the current condition of the entire drywell (including the embedded and sand bed regions). How were these individual measurements averaged? What are the uncertainties in the UT thickness measurements? How was measurement uncertainty addressed? What were the results of any statistical analyses of UT measurement data? What is the lowest measured thickness of the drywell? Where is this located? How extensive is this thinned region? What thicknesses were assumed for those areas that were not measured (including the embedded region)? What are the bases for these assumptions? How do the measured thicknesses compare to the minimum required thicknesses and design thicknesses? How much margin is left in the drywell?
   a. Provide a map showing the locations of all UT measurements of the drywell. Provide spreadsheets showing all UT data taken on the drywell (segregate data by year and provide comments on data validity).
   b. Provide scatter charts for each data set (by year taken and by bay).
   c. Provide a statistical analysis of each of these data sets. Identify best fit statistical distributions and provide means, minimums and 95/95 confidence limits.
   d. Combine data sets into 90 degree sectors, 180 degree sectors, and a full 360 degrees. Identify best fit statistical distributions, means, minimums and 95/95 confidence limits for each data set.

2. Discuss the UT measurement results and other findings from the October 2006 inspections. Was any leakage identified? Where was the water found? How much water was found? What was the source of leakage? How does this water effect corrosion of the drywell in the embedded region? How will these findings impact the aging management programs and commitments for license renewal? Provide a copy of the staff's inspection report.

3. Water leakage to the drywell **should be stopped**. Mitigating the effects of water leakage without addressing the source of leakage is unacceptable and inconsistent with the Generic Aging Lessons Learned Report. Describe actions and plans for **preventing** water from draining down and wetting the external surface of the drywell liner. If water leakage does occur, what analyses were performed to ensure that leakage would flow to the ends of the drain lines and not evaporate or collect in another location?

   a. After the strippable coating applied to the reactor cavity liner, what leakage monitoring activities are performed? What leak rates are observed?

4. Describe the condition of the exterior surface of the drywell and the sand bed floor. Include photographs if available.

5. Provide an expert corrosion analysis of the expected corrosion phenomenon in the embedded region for three pH levels (basic, neutral, and acidic). Identify corrosion rates for each case as a function of depth into the embedded region.

6. Describe the original drywell analysis performed by GE in the early 1990s. Provide copies of this report.

7. Describe the bases for the drywell thicknesses assumed in the Sandia finite element model? What changes were made as a result of the October 2006 UT inspections? What UT measurement data was used? How was this data averaged? How would these results change as a result of different assumed thicknesses (sensitivity study)? Resolve the discrepancies between the thicknesses reported by the applicant and those used in Sandia's finite element model. Provide copies of the final Sandia report.

8. Sandia's model included locally thinned areas of the drywell directly below the vent lines. What effect would moving these locally thinned areas to different locations have on the results (sensitivity studies)?

9. How does corrosion and removal of the sand affect the loads and seismic response of the drywell?

10. Provide a buckling analysis of the drywell liner in the embedded region taking into account the strengthening effect of the concrete above and below. Assume no damage, as well as damage equal to the worse case send bed region. Identify the most vulnerable area of the embedded region (most likely the interface between the sand bed and embedded regions).

11. How is the air gap between the concrete and drywell created? What are the dimensions of this air gap? What is the function of Firebar D? What are its properties and chemical composition? What species could be leached out of Firebar D as a result of water leakage from the refueling cavity? What species were found in the sand after it was removed? What were the concentrations of these species? What effects did these chemicals have on corrosion of the drywell?

12. Was any pitting found in the drywell or torus?

13. Given the problems with implementing commitments in the past (monitoring for water), what assurances are there that the commitments made during license renewal will be implemented?