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Donnie Ashley

From: john.hufnagel@exeloncorp.com
Sent: Friday, April 18, 2008 10:31 AM
To: Donnie Ashley
Subject: RE: draft metal fatigue RAIs -
Attachments: RAI 4 draft mark-up.doc; Scan001.PDF

Follow Up Flag: Follow up
Flag Status: Flagged

Donnie,

We believe we understand the questions. Just a couple of minor suggested changes, that you should be able to see in the attached Microsoft Word file. I also attached a PDF mark-up, in case Word doesn't behave. You should see four suggested changes. Please call with any questions, or let us know if the Staff had any non-editorial changes. Thanks.

- John.

-----Original Message-----

From: Donnie Ashley [mailto:Donnie.Ashley@nrc.gov]
Sent: Thursday, April 17, 2008 4:19 PM
To: Hufnagel Jr, John G; Polaski, Frederick W; Guthrie, Michael W.; Gallagher, Michael P
Subject: draft metal fatigue RAIs -

All-

Here are the subject questions.

Please review and comment on these items. The RAI may change based on review and comments from the staff as well.

RAI 4.3.4-1

The staff identified a concern regarding the methodology used by license renewal applicants to demonstrate the ability of nuclear power plant components to withstand the cyclic loads associated with plant transient operations for the period of extended operation. The analysis methodology of concern focused on the use of a Green's function to calculate stresses used in calculating the fatigue cumulative usage factor (CUF). It involves a simplified input for applying the Green's function in which only one value of stress is used to represent the stress field of actual plant transients. The use of this methodology requires a great deal of engineering judgment by the analyst to assure the simplification still provides conservative results. The staff understands that this methodology was used to calculate the environmentally impacted CUF for the Oyster Creek reactor recirculation outlet nozzle. The staff requests that OGCS perform

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an additional stress analysis of the recirculation outlet nozzle in accordance with the ASME Code, Section III, Subsection NB-3200 methodology (all six stress components are retained in the analysis) to confirm that the results of the previous Green's function evaluation is acceptable. Provide a summary of the results which includes the following information:

- A comparison of the calculated stresses and fatigue usage factors using the Green's function evaluation and the additional confirmatory analysis for each plant transient and transient pairs that contributed to the CUF.
- The environmental factor, F_{en} , used to evaluate each transient pair.
- A discussion of any differences in the analysis input parameters and analysis assumptions between the Green's function evaluation and the confirmatory analysis.

RAI 4.3.4-2

It is the staff's understanding that the reactor recirculation outlet nozzle was the only location where the Green's function methodology was used to evaluate the fatigue CUF for license renewal. Confirm that this is the case.

Donnie Ashley

Senior Project Manager
Division of License Renewal
301-415-3191