From: "Fallin, Michael" <Michael.Fallin@constellation.com>
To: "Ngoc Le" <NBL@nrc.gov>
Date: 4/18/06 2:05PM
Subject: Drywell Supplemental Inspection Questions

Tommy,

Per our conference call, here are the responses to the additional questions on our NMP1 Drywell Supplemental Inspection Program that you need for clarification to address the Containment Open Item.

(A) The staff has the following comments on the NMP1 Drywell Supplemental Inspection Program described in your letter date 4/4/06:

1. In the "background" information provided before the description of the program, the applicant should clarify three thicknesses; (1) the nominal thickness of the wall at the places of degradation, (2) the minimum required thickness so that the drywell can withstand the postulated load combinations, (3) 90% of the nominal wall thickness as the minimum acceptable in the localized areas of degradation (IWE-3122.3). Corrosion, and corrosion rate values should be indicated with respect to the nominal thickness. The Table provided in element "Acceptance Criteria" should be modified, if necessary, to follow this process.

In NMP letter NMP1L 2037, dated April 3rd, 2006, relative to the NMP1 Drywell Supplemental Inspection Program, in addition to the measured shell thicknesses that we determined via UT, we indicated that the shell minimum design thickness was 1.049". What we didn't include in the letter was that the shell nominal thickness in the areas of increased corrosion is 1.090". ASME Section XI IWE identifies actions relative to localized degradation at 90% of the shell nominal wall thickness, which for NMP1 is 0.981". For NMP1's Drywell Supplemental Inspection Program, since this thickness is below the shell minimum design thickness of 1.049", it is not used in the supplemental program. NMP1 is going to ensure through the supplemental program, that the minimum design thickness of 1.049" is not compromised. Therefore, the criteria of the thicknesses that we are measuring and the shell thicknesses to which we are controlling are tighter than is defined in IWE-3122.3. That is why we have the multi-action point plan that escalates the inspection requirements if the shell thickness decreases to the point where the next successive action point is required. If this continues, the supplemental program requires, once the appropriate action point is reached, that mitigative actions be taken (these will be determined based on an engineering evaluation at the time that the appropriate action point is reached). As such, the approach of the NMP1 supplemental program is to determine the difference in shell thickness between the 2003 and 2007 UT measurements, calculate the actual corrosion rate of the drywell shell, and use the last column from the Acceptance Criteria table in NMP1L 2037to determine the supplemental program actions required beyond the IWE requirements. With this approach, we are ensuring that the shell minimum design thickness will not be challenged. Appropriate corrective action will be taken before that can occur.

In the Acceptance Criteria table from NMP1L 2037, the 2nd column of the table indicates the projected shell wall thickness at the end of the PEO based on the corrosion rate in the 1st column and the initial measured minimum wall thickness, in 2003, of 1.106".

2. Protective Coating of the inside of the drywell (see GALL AMP XI.S8) can be considered as "Preventive Action," if the applicant is planning it before the PEO.

The use of a protective coating is one of the mitigative options that is available to NMP if and when an action point is reached that requires mitigative action. Consistent with the rest of the NMP ALRA, however, the application of such a coating would not be credited, in LR space, as a 'Preventive Action' to mitigate corrosion. Additionally, the application of a coating would not necessarily be considered prior to entry into the PEO unless an appropriate augmented program action point is reached.

3. The junction of the base concrete slab with the drywell shell is a potential area of water/moisture accumulation, particularly, if the clean-up activity, or inside pipe leakage has been shown to be probable. Based on the experience at certain other plants (PWRs, and Brunswick), the staff has found this area to be suspect for corrosion, particularly, when the shell is not coated. The element "Parameters Monitored" should be supplemented with commitment to perform VT-3/VT-1 examination of these areas.

The junction of the drywell shell with the base concrete slab contains a moisture barrier that is inspected per the requirements of the IWE Program. As a result of those inspections, although NMP does not have a problem with pooling of water in this area, there have been some repairs made consistent with the requirements of the IWE Program. Since degradation in this area has not been a persistent issue, as in some plants, and since the degradation that did occur has not been characterized in the same manner as the Elevation 225 corrosion, NMP does not see the need to include this area in the supplemental inspection program. If future IWE inspections reveal significant corrosion or degradation in this area, the NMP Corrective Action Program and the requirements of IWE would dictate whether an action plan similar to the one in the supplemental inspection program would be required.

4. Please provide a compilation of the programs that are being credited for NMP1 Containment aging management and the design features that are being utilized to monitor conditions that could result in containment shell degradation.

The AMPs that have been credited for NMP1 Containment aging management are as follows:

* Structures Monitoring Program - specifically monitors the sand cushion drains and inspects the refueling cavity seal to ensure that there are no leaks
* ASME Section XI Subsection IWE Program
* 10 CFR 50 Appendix J Program
* NMP1 Drywell Supplemental Inspection Program

In addition to these AMPs, the drain line from the reactor cavity shelf under the refueling cavity seal is instrumented to determine a flow rate through this piping should a seal leak occur. Additionally, there is a flow rate alarm at 2.5 gpm. This is well above the flow capacity of the drain line that would have to be exceeded to potentially result in the overflow of the reactor cavity shelf into the air gap on the outside of the drywell shell.

If you have any further questions on this issue, let us know. Thank you.

Michael R. Fallin
Technical Consultant
Constellation Generation Group
1997 Annapolis Exchange Parkway
Suite 500
Annapolis, MD 21401
(410)897-5165 (ph.)
(315)349-7020 (NMP ph.)
(410)382-4399 (cell)
(410)897-5110 (fax)
michael.fallin@constellation.com

CC: "Dellario, David" <David.Dellario@constellation.com>, "Mazzaferro, Peter A" <Peter.Mazzaferro@constellation.com>

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From: "Fallin, Michael" <Michael.Fallin@constellation.com>

Created By: Michael.Fallin@constellation.com

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