PMSTPCOL PEmails

From: Head, Scott [smhead@STPEGS.COM]
Sent: Thursday, February 17, 2011 4:33 PM
To: Tonacci, Mark; Wunder, George; Tai, Tom
Subject: FW: codes
Attachments: Use of Newer Codes and standards.doc

Mark

Here is our White Paper on the Code issue.

Thanks

Scott

Hearing Identifier: SouthTexas34Public_EX
Email Number: 2652

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Subject: FW: codes
Sent Date: 2/17/2011 4:32:48 PM
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From: Head, Scott

Created By: smhead@STPEGS.COM

Recipients:
"Tonacci, Mark" <Mark.Tonacci@nrc.gov>
Tracking Status: None
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Use of Newer Codes and standards.doc	33344	

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Revision in the ACI 349 and ASME Section III Division 2 Versions

The following provides a summary of the history and current status of the questions raised by the NRC Staff about the justification for a departure to apply newer revisions of the ACI 349 and ASME Section III Division 2 to the ABWR DCD structures.

- September, 2008 - Initial submittal of departure STD DEP 1.8-1 to revises DCD Tables 1.8-20 and 21 to use more current codes and Regulatory Guides (RG), including:
    - ACI 349-1997 and RG 1.142, Rev. 2, which endorses ACI 349-1997, instead of ACI 349-1980 and RG-1.142, Rev. 1; and
    - ASME Code, Section III, Division 2, 2001 edition with 2003 Addenda, and RG 1.136, rev. 3, which endorses this edition and addenda, instead of the 1989 edition of Division 2 and RG 1.136, rev. 2.
- August, 2010 - RAI 03.08.04-33 requested a comparison of the new and old code provisions and justification of the differences.
- September, 2010 - Response to RAI 03.08.04-33 compared the two revisions of both Codes/RGs, and concluded that some of the changes are more restrictive, and would increase design margins.
- October, 2010 - During the NRC structural audit NRC noted that it was shown that the code changes either do not apply to ABWR standard plant design or do not reduce the design margins for the ABWR standard design. However, it was noted that in certain instances the newer code may be more restrictive, and result in a more robust design. NRC noted that this will be followed up with the applicant for clarification regarding how the existing design will accommodate these provisions of the newer code.
- February 2-3, 2011 - In a meeting with the NRC staff, NINA explained that the majority of the differences between the ACI-349 code revisions apply to design of reinforcement to address local stresses and detailing requirements. These code changes are not expected to affect member dimensions or total area of primary or shear reinforcing steel for any elements, but this cannot be confirmed without completing the detailed design. Similarly, for ASME Section III, Division 2, the differences between the code revisions are in the detailing or minimum reinforcement requirements. With the high postulated design accident pressure, temperature, and hydrodynamic loads, the ABWR RCCV design in general is not governed by the minimum requirements. No changes to member (section) sizes or main reinforcement and shear tie requirements reported in the DCD are expected due to these code changes, but this also cannot be confirmed without completing the detailed design.
- February 9, 2011 - In a telephone conference the NRC stated that its position is that NINA must demonstrate that the newer version of the Codes will not have any adverse impact on the DCD design.

- **NINA's Position**

  No question has been raised about our conclusion that comparison of the code versions shows that use of the newer codes and RGs proposed in departure STD 1.8-1 will not result in decreased design margins. The Staff's question asks us to show that application of these newer codes will not have an adverse effect on compliance with the DCD. At present, NINA has not identified any need for a new departure from design details provided in the DCD as a result of using the newer codes. The engineering judgment of NINA and its contractor, Sargent & Lundy, is that use of the newer codes is likely to result is some changes in detailing of the reinforcement, but is not likely to require changes to the dimensions of members shown in the DCD. NINA acknowledges that as the detailed design progresses, it may identify conflicts between the DCD and use of the newer codes. This possibility is similar to the possibility of a conflict between Tier 1 and Tier 2, which is discussed in 10 CFR Part 52, Appendix A, section III.C, or a conflict between the DCD and the older revisions of these same codes. In all such cases, NINA will comply with the processes for changes and departures in Part 52, Appendix A, VIII, and apply the guidance in ISG 11 to determine whether the new departure should be deferred until after COL issuance, or promptly reported to the NRC.

- **Conclusion**

  Use of the newer code versions is adequately supported by the assessments already conducted, and does not require a detailed review of DCD details that could conceivably be affected.

- **Schedule Impact:**

  The schedule impact will depend on the actions required to resolve the NRC concern**.**