

Vogle PEmails

From: Patel, Chandu
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To: Vogle PEmails
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Attachments: LAR 15-012 Completeness and Acceptability Review AI-GW 3-29-16.docx

This is to support the meeting on March 31, 2016 regarding LAR 15-012, Floor Module Connections.

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LAR 15-012 Completeness and Acceptability Review

Scope:

Licensing amendment related to support setting of steel floor modules at Elevation 107'-2"

Comments

Enclosure 1:

- 1- Page 3: last sentence: "Information is added to note that UFSAR Figure 3.8.3-17 is not representative of the connection of the operating deck floor to the walls of the refueling canal and other floor modules that rest on structural wall module." It is not clear what is the difference of operating deck floor (TOC: 135'-3") to the walls of the refueling canal and other floor modules that rest on structural wall module. And what are those "other floor modules that rest on structural wall module"? Similar statements are also provided on page 4, second paragraph, and last sentence, and in Enclosure 2, pages 2 and 3 last sentences in revised UFSAR Subsections 3.8.3.1.3 and 3.8.3.5.8.1.
- 2- Page 4, first paragraph, first sentence: "... UFSAR Subsection 3.8.3.1.4 include a revision to add shear studs and channels...." It is not clear whether the channels are added in the revised Figures, 3.8.3-3 and 3.8.3-17, in Enclosure 2.
- 3- Editorial, Page 4, third paragraph: for consistency, statement "...shear studs attached to the bottom steel plate of the module." should read "...shear studs attached **on top of** the bottom steel plate of the **floor** module."
- 4- Editorial, Page 8, item 18: for consistency, statement "Add shear studs attached to the bottom steel plate of the floor module...." should read "...shear studs attached **on top of** the bottom steel plate of the **floor** module."
- 5- Editorial, Page 8, item 19, sub-item a): "...El. 107'-2" and 135'-3"....." should read "...TOC EL. 107'-2" and 135'-3"....." Furthermore, Note 1 in Figure 3.8.3-17, Sheets 1 and 2 should add "TOC" as well as "maintenance floor" and "operating deck floor" may need be added, respectively, for clarification.
- 6- Page 9, first paragraph: states "The floor modules are seismic Category I structures and are design for dead, live, thermal, pressure, SSE and loads due to postulated pipe breaks." UFSAR Subsection 3.8.3.3, "Load and Load Combination," properly excludes "wind, tornado and precipitation loads," for the containment internal structures, and refers to UFSAR Subsection 3.8.4.3 for loads and load combinations of other Category I structures. It is not clear

whether all the loading conditions described in UFSAR Subsection 3.8.4.3 included in the design of the floor module.

- 7- Page 9, third paragraph: states “The connection of the floor to the structural wall modules are designed as fully fixed.” In the same paragraph, it was stated “Floor modules are design as simple supported....” It is not clear how fixed end moments at the floor-to-wall mechanical connections’ were calculated to determine the required reinforcement/structural steels at the floor-to-wall connections.
- 8- Page 9, third paragraph: states “The size of the reinforcement ranges from #7 and #11,” and in Notes 2 in Figures 3.8.3-17, Sheets 1 and 2, in Enclosure 2. However, revised Figure 3.8.3-3 on page 4 in Enclosure 2 identifies reinforcement of “#6@12” at upper sections of the cross sections. Furthermore, Figure 3.8.3-3 related to operating deck floor at elevation 135’-3”, not to the steel floor modules at Elevation 107’-2” (maintenance floor).

Enclosure 2:

- 1- Clarification - Page 2, UFSAR Subsections 3.8.3.1.3, “Structural Wall Modules,” mid paragraph: states “The module faceplate are thicker than **nominal**, up to 1.5 inch thick,...” It is not clear what is meant with “**nominal**.”
- 2- Page 2, UFSAR Subsections 3.8.3.1.4, “Structural Floor Modules,” states “The 107’-2” floors consist of shear studs, steel tee, wide flange, and channel sections, and welded to horizontal steel bottom plates stiffened by transverse stiffeners.” Figure 3.8.3-3, “Structural Floor Module,” does not show a “channel section.”
- 3- Clarification - Pages 2 and 3, UFSAR Subsections 3.8.3.1.3 and 3.8.3.5.8.1 revised information identify “seat plates, beam seats, clip angles, shear plates,” that needs to be pointed in Figure 3.8.3-17, Sheets 1 and 2.
- 4- Page 4: Figure 3.8.3-3, “Structural Floor Module,” TOC EL. 135’-3” refers to “Operating Deck Floor,” however, TOC EL. 107’-2” for “Maintenance Floor,” is missing. The scope of LAR 15-012 is related to steel floor modules at Elevation 107’-2”.
- 5- Page 4: Figure 3.8.3-3, “Structural Floor Module,” no Note(s) provided – minimum reinforcement size range, design requirements, etc. may need to be provided.
- 6- Pages 5 and 6: UFSAR Figures 3.8.3-17, Sheets 1nd 2, horizontal channels in the wall module are appeared to be extended next to the wall module plates. It is not clear whether the joint weld configurations between the channel and vertical structural member are changed? If changed, whether welding check was performed of the new weld joint configuration!

Furthermore, UFSAR Figure 3.8.3-8, Sheet 1 of 3, Detail 1, should also be revised to capture the change in length of the channel.

- 7- Pages 4-11: UFSAR Figures 3.8.3-3 and 3.8.3-17, Sheets 1 and 2: for consistency all of the weld symbols between the structural members may need to be show.
- 8- Pages 7 and 12: Note 1 refers to floor modules at EL. 107'-2" and 135'-3". However, in UFSAR Subsection 3.8.3.1.3, "Structural Wall Modules," revised information refers to the maintenance floor at elevation 107'-2" and the operating deck floor elevation 135'-3". Note 1 does not provide any information for the maintenance floor at elevation 107'-2".
- 9- Pages 5 and 11, UFSAT Figure 3.8.3-17, Sheets 1 and 2: Although, there may not be any code provision related to minimum distance for welding studs to structural members, in figures depicting studs placed next to angle section may not be possible to be implemented during the fabrication process. Therefore, a minimum distance between the studs and structural members may need to be provided.
- 10-UFSAR Figure 3.8.3-13, "Effective Sections for Floor Modules," – Are drawings and Notes in Figure 3.8.3-13 not affected?

Conclusion:

LAR 15-012 is related to support setting of steel floor modules at Elevation 107'-2" (maintenance floor). However, LAR includes information related to the steel floor modules at Elevation 135'-3" (operating deck elevation) also. Therefore, the LAR needs to discuss changes related to steel floor modules at Elevation 107'-2" only.