

## **Vogle PEmails**

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**From:** Patel, Chandu  
**Sent:** Wednesday, August 31, 2016 3:15 PM  
**To:** 'Jpredd@southernco.com'; Chamberlain, Amy Christine; Arice@Scana.com  
**Cc:** Vogle PEmails  
**Subject:** NRC Staff Comments on Vogle LAR 16-009R2  
**Attachments:** NRC Comment 16009R2 Vogle.docx

Hi Jason,

Please see our comments on your summary of questions from our meeting on last Thursday. Please let me know when you will be sending the supplement.

Thanks,

**Chandu Patel, Senior Project Manager**  
**U.S. NRC, Office of New Reactors**  
**NRC/NRO/DNRL/LB4,**  
**Washington, DC 20555-0001**  
**301.415.3025**  
**MS T6C20M**

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**From:** Patel, Chandu

**Created By:** Chandu.Patel@nrc.gov

**Recipients:**

"Vogtle PEmails" <Vogtle.PEmails@nrc.gov>  
Tracking Status: None  
"Jpredd@southernco.com" <Jpredd@southernco.com>  
Tracking Status: None  
"Chamberlain, Amy Christine" <ACCHAMBE@southernco.com>  
Tracking Status: None  
"Arice@Scana.com" <Arice@Scana.com>  
Tracking Status: None

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## NRC Comments from public meeting of August 25, 2016, regarding SNC LAR 2016-009R2 (LAR 90).

1. In UFSAR Table 3H.5-13 changes for SNC LAR-16-009R2,
  - 1A. NRC is seeking further information on why the Area changed from 1 to 2 in the Table heading. Licensee to provide reference to Area 1 identification in Subsection 3H.5.2.2 and Table 3H.5-11.
  - 1B. In the last bullet, the maximum spacing was replaced with design spacing. The NRC staff has concerns that the maximum spacing of studs is no longer defined for studs in the area of penetrations, openings, or other obstructions, they want to make sure it meets code requirements. Licensee to provide language to address NRC's concern, but does not plan to include specific values of spacing of studs around penetrations, openings, or other obstructions in the table that might not be appropriate for all situations.
  - 1C. The NRC staff mentioned the demand of negative moment shown in the second row is larger than the capacity in the third row. The Licensee clarified that the demand of negative moment shown in the second row is the maximum value of all finned floors, which controlled by connection at wall K; however, the capacity in the third row is corresponding to connection at wall 11. Licensee to consider adjusting the table to specify demand and capacity locations.

Comment is captured correctly. If the only change to the Table will be to specify the demand and capacity locations, a description will still be necessary for why capacity can be less than demand. Table needs to be clear (the demand and capacity should be for the same connection) and safety conclusion about the MCR design needs to be able to be made based on numbers and description provided.
  - 1D. The NRC staff raised the question regarding why the demand are different if the design of main control room has not been revised. Licensee to investigate and provide basis.
2. For the fire reinforcement references in SNC LAR-16-009R2,
  - 2A. The NRC staff raised the questions on why the fire reinforcement barrier is needed, and whether it has been considered in the original design. Licensee clarified that ~~this is~~ the LAR did not propose a new design change, only a documentation change to reflect the previously revised configuration. ~~proposed in the LAR.~~ NRC requested identification of the design change and corresponding evaluation documentation. Licensee to address.
  - 2B. The NRC staff asked whether the fire reinforcement is needed for all finned floors or the one on elevation 117'-6" only. If so, why only on elevation 117'-6"? On page 2 of 12 of SNC LAR-16-009R2 for Subsection 3.8.4.1.2 changes, there is a reference to the additional rebar for the fire protection purposes. It is not clear where this rebar is added. Licensee to address.
  - 2C. The NRC staff asked if the main control room habitability has been impacted by this fire protection related design change. Licensee to address.
  - 2D. For the relocation of HVAC penetrations, the NRC staff asked whether air-flow analysis has been performed since the HVAC penetrations have been moved to outside of the main control room. The NRC also questioned impact on flame and smoke spread in the MCR. Licensee to address.
  - 2E. For the gap shown on Figure 3H.5-9 Sheet 2, the NRC staff asked whether there will be any gap filler, and whether the gap filler is 3-hour fire rated. Licensee to address.
3. For SNC LAR-16-009R2, the NRC staff requested the licensee to provide more information regarding CA20 and finned floors use of shoring and brackets (and credit for shoring and brackets in loading) in

UFSAR text or figures. It is also not clear to NRC how the steel plates in the finned floors are supported during construction. Licensee to investigate and address use of, and credit taken, for shoring and brackets. **Since it is composite construction of the floors, UFSAR section 3H.5.2/3H 5.4 to address/revise composite steel plate/Finn floors construction (Shored or Un-shored) appropriately.**

Related topic - On SNC LAR-16-009R2 page 18 of 26, in the last sentence of last paragraph, "The floor to wall connection is considered to be a fully fixed connection. This is not changed in the seismic model for the proposed changes", the NRC staff asked for description of connection mechanism for CA20 floors regarding whether it is fixed or pinned.

4. For SNC LAR-16-009R2, the NRC staff requested to provide example comparisons of limiting demand vs capacity for one finned floor and for one CA20 floor **connection**; include **all steel members** that is credited for capacity **computation under the** most severe loading (location with greatest interaction ratio **or** least margin). **Cite values of demand/capacity at** each of the three zones shown during meeting of July 26. Licensee to provide the requested table of calculation results.
5. On SNC LAR-16-009R2 page 16 of 26, in the second paragraph last sentence, "the nominal clear distance between the dowels and shear studs is always less than 6 inches", the NRC staff asked for a source reference for the 6 inches (based on code?), and they asked how this is related to the studs spacing defined on page 18 of 26 in the fourth paragraph. Licensee clarified that the 6" spacing is following the code requirement for non-contact lap splice spacing although the bottom dowels do not constitute a non-contact lap splice. Licensee to consider revising the paragraphs to clarify the information, and link these discussions.

The Staff also noted that on Pg 18, in the last two sentences, there is a reference to a change of the spacing of the dowels. Licensee referenced this back to Change K.1 and Change Activity 5.

6. On SNC LAR-16-009R2 page 2 of 12 and page 3 of 12, the NRC staff requested for clarification of "design element", the NRC staff believes that it is not clear what the design elements are and think that the design elements should be described. **Is design element are different for Finn and no-Finn floors?** Licensee to provide this information.
7. On SNC LAR-16-009R2 page 17 of 26, in the second paragraph last sentence, the NRC staff asked why the latest edition of ACI-349 is mentioned, and suggested to remove it if not necessary. Licensee agrees the reference is not necessary and will remove it.
8. On SNC LAR-16-009R2 page 2 of 12, the NRC staff does not like "continue to meet" phrase. Licensee agrees to search for and remove "continue to" phrase.
9. On SNC LAR-16-009R2 page 10 of 12 and page 11 of 12, the NRC staff requested to add a note to explain the variation of hook orientation in CA20 floors and finned floors. The NRC staff asked the licensee to add hook orientation description in either LAR and UFSAR 3.8.4.4.1 changes or add Note to UFSAR Figure 3H.5-9 (Sheet 2 of 3) to allow for variation. Licensee will investigate.  
**The licensee should also add a description of the WT shapes and the brackets in either LAR or UFSAR 3.8.4.4.1 or add Note to Figure 3H.5-9 (Sheet 2 of 3) to allow for variation from the Figure for CA20 floors.**

10. The NRC staff commented that the SNC LAR-16-009R2 sequencing of Notes on separate sheets of a single figure (3H.5-9) may lead to confusion and suggested the Notes be similarly numbered on each sheet. Licensee to address.
11. On page 8 of 26 of SNC LAR-16-009R2 there is a statement that CA20 does not include stiffeners. However, there are stiffeners provided in CA20 floors such as WT. The use of stiffeners needs to be clarified in the LAR. Licensee to consider and address.
12. The NRC staff commented that the text description in SNC LAR-16-009R2 for change activities #2 and #5 appears to describe the change for only finned floors; these should likely also address how they are applicable to the CA20 floors as well. Licensee to investigate and address.