SummerRAIsPEm Resource

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Attachments: LAR-135 PSM Presentation 20170323.pdf

Attached is the LAR 135 material which will be used March 23, 2017. This presentation contains no SUNSI information.

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Reconciliation of Tolerance Deviations of As-built Wall, Floor, and Roof Thicknesses

(Public Meeting)

March 23, 2017

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Meeting Outline & Objective

Outline

- Recap previous interaction
- Proposed resolution
- Path forward

Objective

- Review the revised draft LAR markups and address questions/feedback prior to submittal.

Recap Previous Interaction

Held Pre-submittal Meeting on February 9, 2017

- Discussed how deviations from thicknesses (including tolerances) require a License Amendment Request to be submitted and approved by the NRC; or costly and time consuming repairs made with no safety value added.
- A more efficient means of safely addressing potential future deviations in wall thickness is needed
- Proposed any deviation in wall, floor, or roof thickness outside design tolerance is evaluated and dispositioned in accordance with Nonconformance and Disposition Report process.
- The Staff provided design change concerns and reduction in radiation shielding feedback

Avoid costly and time consuming repairs with no safety value added.

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Proposed Resolution

Table 3.3-1
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building[1]

Wall or Section Description	Column Lines[7]	Floor Elevation or Elevation Range[7][8]	Concrete Thickness[2][3][4][5][6][9][10][11][12]	Applicable Radiation Shielding Wall (Yes/No)
Containment Building Internal Structure				
Shield Wall between Reactor Vessel Cavity and RCDT Room	E-W wall parallel with column line 7 (Inside face is 3'-0" north of column line 7. Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 71'-6" to 83'-0"	3'-0"[11]	Yes
West Reactor Vessel Cavity Wall	N-S wall parallel with column line N (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	7'-6"[11]	Yes
North Reactor Vessel Cavity Wall	E-W wall parallel with column line 7 (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	9'-0"[11]	Yes
East Reactor Vessel Cavity Wall	N-S wall parallel with column line N (Width of wall section with stated thickness is defined by inside wall of reactor vessel cavity.)	From 83'-0" to 98'-0"	7'-6"[11]	Yes
West Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
North Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
East Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
South Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
South wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes
West wall of west steam generator compartment	N-S wall parallel with column line N	From 103'-0" to 153'-0"	2'-6"	Yes
North wall of west steam generator compartment	Not Applicable	From 103'-0" to 153'-0"	2'-6"	Yes

1. The column lines and floor elevations are identified and included on Figures 3.3-1 through 3.3-13.
2. These wall (and floor) thicknesses have a construction tolerance of ± 1 inch, except as noted and for exterior walls below grade where the tolerance is +12 inches, - 1 inch. These tolerances are not applicable to the nuclear island basemat.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates. Where faceplates with a nominal thickness of 0.5 inches are used in the construction of the wall modules, the wall thicknesses in this column apply. Where faceplates thicker than the nominal 0.5 inches are used in the construction of the structural wall modules, the wall thicknesses in the area of the thicker faceplates are greater than indicated in this column by the amount of faceplate thickness increase over the nominal 0.5 inches. Overlay plates are not considered part of the faceplates, and thus are not considered in the wall thicknesses identified in this column.
4. For floors with steel surface plates, the concrete thickness also includes the plate thickness.
5. Where a wall (or a floor) has openings, the concrete thickness does not apply at the opening.
6. The elevation ranges for the shield building items are rounded to the nearest inch.
7. The Wall or Section Description, Column Line information, and Floor Elevation or Elevation Ranges are provided as reference points to define the general location. The concrete thickness of an item intersecting other walls, roofs or floors at a designated location (e.g., column line) is not intended to be measured to the stated column line, but only to the point where the intersection occurs.
8. Where applicable, the upper wall portions extend to their associated roofs, which may vary in elevation, e.g., sloped roofs.
9. From one wall/floor section to another, the concrete thickness transitions from one thickness to another, consistent with the configurations in Figures 3.3-1 through 3.3-14.
10. This wall thickness has a tolerance of ±1-1/4 inch.
11. These wall thicknesses have a tolerance of ±1-5/8 inch.
12. These wall thicknesses have a tolerance of -1 inch and +4 inch for a length of 24 inches at the interface of these reinforced concrete walls to structural module connections.

Add NOTE 13 to apply to Concrete Thickness Column

13. Deviations in concrete thicknesses are allowed beyond the stated thickness tolerance. These deviations must be reconciled in accordance with ITAAC 3.3.00.02a.i.a, 3.3.00.02a.i.b, 3.3.00.02a.i.c, 3.3.00.02a.i.d, 3.3.00.02a.ii.e, or 3.3.00.02a.ii.f. Negative tolerance deviations are not permitted for walls identified as radiation shielding walls.

    This note cannot be used to change the nominal (as stated) wall, floor or roof concrete thickness.

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Proposed Resolution

- Modify ITAAC 3.3.00.02a.ii.e and ITAAC 3.3.00.02a.ii.f to allow for reconciliation in the Annex and Turbine Buildings.
- For any wall/floor identified as a Radiation Shielding Wall, only positive deviations are allowed.

768	3.3.00.02a.ii.e	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	ii) An inspection of the as-built concrete thickness will be performed.	~~ii.e) A report exists that concludes that the as-built concrete thicknesses of the annex building sections conform with the building sections defined in Table 3.3-1.~~

Deviations from the design conditions will be analyzed using the design basis loads.

A report exists and concludes reconciliation of construction deviations from the critical dimensions and tolerances specified in Table 3.3-1 demonstrates the as-built annex building sections withstand the design basis loads as specified in the Design Description, without loss of structural integrity or the safety-related functions.

769	3.3.00.02a.ii.f	2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	ii) An inspection of the as-built concrete thickness will be performed.	~~ii.f) A report exists that concludes that the as-built concrete thicknesses of the turbine building sections conform to the building sections defined in Table 3.3-1.~~

Deviations from the design conditions will be analyzed using the design basis loads.

A report exists and concludes reconciliation of construction deviations from the critical dimensions and tolerances specified in Table 3.3-1 demonstrates the as-built turbine building sections withstand the design basis loads as specified in the Design Description, without loss of structural integrity or the safety-related functions.

Proposed Resolution

- Any deviation in wall, floor, or roof thickness outside of the ITAAC tolerance, is evaluated and dispositioned in accordance with Nonconformance and Disposition Report process.
- Allows for deviations in wall thickness, provided they are structurally reconciled in the ITAAC listed in the note. Negative deviations are allowed only for walls/floors which are not designated as radiation shielding.
- No wholesale wall/floor re-designs (e.g., changing wall thickness from 2’ thick to 3’ thick) are allowed.
- No physical design changes or design Code standards application are required for this request.

Path Forward

- Incorporate feedback
- Submit LAR in the upcoming weeks

Avoid costly and time consuming repairs with no safety value added.

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Discussion