

## **Example D101 – Inspection of As-Built Concrete Wall Thickness**

XX/YY/ZZZZ (Date)

To: NRC

From: {Name of Licensee}  
{Site Name and Unit #}  
{Docket #}

Subject: Completion of ITAAC 3.3.00.02a.ii.d

The purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) in accordance with 10 CFR 52.99(c)(1) of the completion of {Site Name and Unit #} Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 3.3.00.02a.ii.d for verification that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building conform to the building sections defined in ITAAC Table 3.3-1. The closure process for this ITAAC is based on the guidance described in NEI 08-01 (Reference 1).

### **ITAAC Statement**

#### **Design Commitment:**

- 2a) *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.*

#### **Inspections, Tests, Analysis:**

- ii) *An inspection of the as-built concrete thicknesses will be performed.*

#### **Acceptance Criteria:**

- ii.d) *A report exists that concludes that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in Table 3.3-1.*

### **ITAAC Determination Basis**

Multiple ITAAC are performed to verify that the nuclear island structures, including the critical sections listed in Table 3.3-7 of the AP1000 Design Control Document Tier 1 (Reference 6), are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Tier 1 Design Description, without loss of structural integrity and the safety-related functions. The subject ITAAC verifies that the as-built concrete thicknesses of the radiologically

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controlled area of the auxiliary building sections conform to the building sections identified in ITAAC Table 3.3-1 (Attachment 1), consistent with design basis loading requirements.

The inspections were performed of the as-built sections (following concrete placement) in accordance with the requirements of measurement guideline APP-XX-XX-XXX (Reference 3), which identifies the location and frequency of inspection points for determining wall, floor, or basemat thicknesses to ensure the resulting measurements are representative of the entire section being inspected. The measurement specifications are based on the size and construction type of each section. Measurements were taken using survey equipment in accordance with survey procedure XXX (Reference 4) and adjusted for instrument accuracy. The inspection results (Reference 5) conclude that the as-built concrete thicknesses of the radiologically controlled area of the auxiliary building sections conform to the building sections defined in ITAAC Table 3.3-1.

### **ITAAC Finding Review**

In accordance with XXX-XXX-XXX (project specific procedure for ITAAC completion), {Licensee} performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This review found that there are no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in ITAAC Completion Package for ITAAC 3.3.00.02a.ii.d (Reference 2) and available for NRC inspection.

### **ITAAC Completion Statement**

Based on the above information, [Licensee] hereby notifies the NRC that ITAAC 3.3.00.02a.ii.d was performed for Plant/Unit XYZ, and that the prescribed acceptance criteria are met.

Systems, structures and components verified as part this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

[Licensee] requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact XXX at xxx-xxx-xxxx.

Sincerely,

{Signature of Licensee Representative}  
{Typed Name of Licensee Representative}  
{Title of Licensee Representative}

Attachment

### **References (available for NRC inspection)**

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1. NEI 08-01, Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52.
2. ITAAC 3.3.00.02a.ii.d Completion Package
3. APP-XX-XX-XXX, Inspection of Nuclear Island Concrete Structures
4. Procedure XXX, Surveys
5. Inspection Report(s) XYZ
6. APP-GW-GL-700 – AP1000 Design Control Document, Tier 1

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**Attachment 1**  
**ITAAC Table 3.3-1 – Auxiliary Building Radiologically Controlled Area Walls and Floors**

<b>Table 3.3-1 (cont.)</b>				
<b>Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building<sup>(1)</sup></b>				
<b>Wall or Section Description</b>	<b>Column Lines</b>	<b>Floor Elevation or Elevation Range</b>	<b>Concrete Thickness<sup>(2)(3)</sup></b>	<b>Applicable Radiation Shielding Wall (Yes/No)</b>
<b>Auxiliary Building Walls/Floors Radiologically Controlled</b>				
Column Line 1 wall	From I to N	From 66'-6" to 100'-0"	3'-0"	No
Column Line 1 wall	From I to 5'-6" east of L-2	From 100'-0" to 180'-0"	2'-3"	Yes
Column Line 1 wall	From 5'-6" east of L-2 to N	From 100'-0" to 125'-0"	3'-0"	Yes
Column Line 1 wall	From 5'-6" east of L-2 to N	From 125'-0" to 180'-0"	2'-3"	Yes
Column Line 2 wall	From I to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From K-2 to L-2	From 66'-6" to 135'-3"	5'-0"	Yes
Column Line 2 wall	From L-2 to N	From 98'-1" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From I to J-1	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line 3 wall	From J-1 to J-2	From 66'-6" to 82'-6"	2'-6"	Yes
Column Line 3 wall	From J-1 to J-2	From 100'-0" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From K-2 to L-2	From 66'-6" to 92'-8 1/2"	2'-6"	Yes
Column Line 4 wall	From I to J-1	From 66'-6" to 153'-0"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 66'-6" to 92'-6"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 107'-2" to 135'-3"	2'-6"	Yes
Column Line 4 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 4 wall	From I to intersection with shield building wall	From 135'-3" to 180'-0"	2'-0"	Yes
Column Line 5 wall	From I to shield building; with opening east of J-1 (below 107'-2" floor).	From 66'-6" to 160'-6"	2'-0"	Yes
Column Line 7.1 wall	From I to 8' east of J-1	From 66'-6" to 82'-6"	2'-0"	Yes
Column Line 7.2 wall	From I to 5'-6" east of J-1	From 66'-6" to 100'-0"	2'-0"	Yes
Column Line I wall	From 1 to 7.3	From 66'-6" to 100'-0"	3'-0"	No

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**Table 3.3-1 (cont.)  
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Column Line I wall	From 1 to 4	From 100'-0" to 180'-0"	2'-0"	Yes
Column Line I wall	From 4 to 5	From 100'-0" to 160'-6"	2'-0"	No
Column Line J-1 wall	From 1 to 2	From 82'-6" to 100'-0"	2'-0"	Yes
Column Line J-1 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-1 wall	From 2 to 4	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line J-1 wall	From 4 to shield building	From 66'-6" to 107'-2"	2'-0"	Yes
Column Line J-2 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-2 wall	From 4 to intersection with shield building wall	From 66'-6" to 135'-3"	2'-0"	Yes
Column Line K-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-9"	Yes
Column Line L-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-0"	Yes
Column Line N wall	From 1 to 2	From 66'-6" to 100'-0"	3'-0"	No
Column Line N wall	From 1 to 12'-9" north of 1	From 100'-0" to 125'-0"	3'-9"	No
Column Line N wall	From 1 to 12'-9" north of 1	From 125'-0" to 135'-0"	2'-0"	No
Column Line N wall	From 12'-9" north of 1 to 2	From 100'-0" to 118'-2 1/2"	3'-0"	No
Column Line N wall	From 12'-9" north of 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	No
Column Line N wall	From 1 to 2	From 118'-2 1/2" to 135'-3"	2'-0"	Yes
Column Line N wall	From 2 to 4	From 66'-6" to 98'-1"	3'-0"	No
Column Line N wall	From 2 to 4	From 98'-1" to 135'-3"	5'-6"	Yes
Column Line N wall	From 1 to 4	From 135'-3" to 180'-0"	2'-0"	Yes
Labyrinth Wall between Col. Line 3 and 4 and J-1 to 7'-3" from J-2	Not Applicable	From 82'-6" to 92'-6"	2'-6"	Yes
N-S Shield Wall (low wall)	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 107'-2"	2'-6"	Yes
N-S Shield Wall	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 125'-0"	2'-3"	Yes
E-W Shield Wall	Between 1 and 2 extending from column line N east	From 100'-0" to 125'-0"	2'-9"	Yes
Auxiliary Area Basemat	From 1-7.3 and I-N, excluding shield building	From 60'-6" to 66'-6"	6'-0"	No

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**Table 3.3-1 (cont.)  
Definition of Wall Thicknesses for Nuclear Island Buildings, Turbine Building, and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Floor	From 1 to 2 and I to N	82'-6"	2'-0"	Yes
Floor	From 2 to 4 and J-1 to J-2	82'-6"	2'-0"	Yes
Floor	From 4 to 5 and J-1 to J-2	82'-6"	0'-9"	Yes
Pipe Chase Floor	From 2 to 5 and J-1 to J-2	92'-6"	2'-0"	Yes
Floor	From 2 to 3 and J-2 to K-2	90'-3"	3'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	92'-6"	2'-0"	Yes
Floor	From 4 to 7.3 and I to J-1	82'-6"	2'-0"	Yes
Floor	From 1 to 2 and I to N	100'-0"	3'-0"	Yes
Floor	From 2 to 4 and K-2 to L-2	92'-8 1/2"	3'-2 1/2"	Yes
Floor	From I to J-2 and 4 to intersecting vertical wall before column line 5	107'-2"	2'-0"	Yes
Floor	From I to shield building wall and from intersecting vertical wall before column line 5 to column line 5	105'-0"	0'-9"	Yes
Floor	From 1 to 10'-0" north of 1 and L-2 to N	125'-0"	3'-0"	Yes
Floor	From 10'-0" north of 1 to 2 and L-2 to N	118'-2 1/2"	2'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	117'-6"	2'-0"	Yes
Floor	From 2 to 4 and I to J-1	153'-0"	0'-9"	Yes
Roof	From 1 to 4 and I to N	180'-0"	1'-3"	Yes
Floor	From 4 to short of column line 5 and from I to intersection with shield building wall	135'-5"	0'-9"	Yes
Floor	From short of column line 5 to column line 5 and from I to intersection with shield building wall	133'-0"	0'-9"	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  $\pm 1$  inch, except for exterior walls below grade where the tolerance is +12 inches, - 1 inch.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates.
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.

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