CCNPP3COLA PEmails

From: John Rycyna
Sent: Tuesday, April 14, 2009 2:03 PM
To: Poche, Robert; McQueeney, Jennifer; katie.thurstin@unistarnuclear.com
Cc: Edmund Kleeh; Omid Tabatabai; CCNPP3COL Resource; Michael Miernicki; Joseph Colaccino; James Biggins; Adam Gendelman
Subject: RAI No 96 CCIB 1685.doc (public)
Attachments: RAI No 96 CCIB 1685.doc

Rob,

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on March 31, 2009. No conference call was requested to discuss this RAI. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

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Subject: RAI No 96 CCIB 1685.doc (public)
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From: John Rycyna

Created By: John.Rycyna@nrc.gov

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MESSAGE	767	4/14/2009 2:02:34 PM
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Options
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Return Notification: No
Reply Requested: No
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Request for Additional Information No. 96
4/14/09

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 14.03 - Inspections, Tests, Analyses, and Acceptance Criteria
Application Section: Part 10 of application, tables 2.4-1 to 2.4-31

QUESTIONS for Construction Inspection and Allegations Branch (CCIB)

14.03-1

The following typographical errors were noted:

1. ITAAC Item 1.a. in Table 2.4-11 - Last word in CW -"Nuclear" should be "Nuclear Island".
2. ITAAC Item 6.b. in Table 2.4-21 - In the AC, space is missing between "andducting".
3. ITAAC Item 8 in Table 2.4-21 - In the AC, space is missing between "uponreceipt".
4. ITAAC Item 6.a. in Table 2.4-22 : In the AC, delete the word "in" after Seismic I.
5. ITAAC Item 7 in Table 2.4-24 - In the AC, - ending of last sentence now reads…"are installed as *built*." It should read… "are installed as *designed*." See Item 6 AC, which states "are installed as *designed*.
6. ITAAC Item 2b. in Table 2.4-1 - In the AC, for Item 2b., the angle of internal friction is greater and equal to 35 degrees, whereas the Commitment Wording states equal to 35 degrees.
7. ITAAC Item 2c. in Table 2.4-1 - In the AC, for Item 2c., the coefficient of friction is greater and equal to .7, whereas the Commitment Wording states equal to .7.
8. ITAAC Item 4 in Table 2.4-1 - In the AC, for Item 4, the backfill shear wave velocity is .1000 ft per second, whereas the Commitment Wording states it is 1000 ft per second.

14.03-2

ITAAC Item 1 in Table 2.4-1

It seems based on the strict requirements in AC that this ITAAC would require inspection as well as a test. This is based on where the sample is obtained at the site.

This question is also applicable to the following ITAAC:

ITAAC Item 3 in Table 2.4-1 - Verification that all installed backfill at Seismic cat I and II structures meets this test.

Evaluate these deficiencies, revise and respond as necessary.

14.03-3

ITAAC Item 2 in Table 2.4-2

This seems that ITA should be both a test and an inspection in order to verify that all concrete used in Nuclear Island structures meets this test.

For Item b. in the AC, what is meant by 'exposure condition' since this term appears to be ambiguous?

Also applicable to the following ITAAC:

ITAAC Item2 in Table 2.4-3

ITAAC Item 2 in Table 2.4-4

ITAAC Item 2 in Table 2.4-5

ITAAC Item2 in Table 2.4-6

ITAAC Item 5 in Table 2.4-7

ITAAC Item 3 in Table 2.4-8

ITAAC Item 7 in Table 2.4-9

ITAAC Item 4 in Table 2.4-10

14.03-4

ITAAC Item 1.c.in Table 2.4-7

SRP 14.3, App. A IV.4.B states that the AC, if met, then the ITA demonstrate that the Design Commitments have been met. SRP 14.3 App. A IV.1.A defines “analysis” as a calculation, mathematical computation, or engineering or technical evaluation. “Inspection” is defined as visual observations, physical observations, or a review of records of these activities. “Test” is defined as the actuation, or operation, or establishment or specified conditions to evaluate the performance of components.

Table 2.4-7, Item 1.c. ITA requires the new bulkhead retaining wall must resist the impact of wave forces by “inspection.” An inspection is adequate to confirm that the new bulkhead retaining wall is consistent with design documents, but not to satisfy the Commitment Wording requirement that it can resist the impact of wave forces. Verification of structural capability to resist forces is typically established by tests, analyses, or both since it is usually not practical to verify structural capability by visual observation. Should the ITA for this ITAAC include tests and/or analyses?

For Item 1b. for this same ITAAC, the Commitment Wording and the AC do not agree. The bulkhead retaining wall could meet the new design, but it may not extend below the bottom of the CCNPP intake channel at elevation - 20.5 feet.

This is also true of ITAAC Item 2 in Table 2.4-7. The ITA requires the UHS Makeup Water Intake Structure that is Seismic Category I to withstand design basis loads, including static and dynamic loads associated with a flood by “inspection.” Should the ITA include tests and/or analyses to demonstrate the intake structure can withstand design basis loads and the dynamic forces of a flood?

For Item 1b. for this same ITAAC, the Commitment Wording and the AC do not agree. The bulkhead retaining wall could meet the new design, but it may not extend below the bottom of the CCNPP intake channel at elevation - 20.5 feet.

This RAI also applies to the following ITAAC:

ITAAC Items 3 and 6 in Table 2.4-7

ITAAC Items 1 and 4 in Table 2.4-8

ITAAC Item 5 in Table 2.4-9

ITAAC Item 2 in Table 2.4-10

14.03-5

General:

The ITAAC do not appear to be numbered in a consistent manner.

ITAAC Item 1 in Table 2.4-7 has sub-steps that differentiated by assigned letters. ITAAC Items 7 and 8 in Table 2.4-7 have sub-steps that are assigned numbers not letters.

Evaluate and resolve this discrepancy.

14.03-6

ITAAC Item 7.3 in Table 2.4-7

The Commitment Wording and AC state that penetrations through rated fire walls, floors and ceilings are sealed or otherwise closed with *rated* penetration seal assemblies. Should the Acceptance Criteria specify numerical values for ratings for the seal assemblies?

Applicable also to following ITAAC:

ITAAC Item 5.3 in Table 2.4-8

ITAAC Item 4.6 in Table 2.4-12

14.03-7

ITAAC Item 8 in Table 2.4-7

The letter identifying the first sub-step in AC should be an "a"not a "c".

For the same sub-step, the Commitment Wording and AC are very different. The AC should duplicate the Commitment Wording by using something equivalent to the following words:

“The pump house area of the UHS Makeup Water intake structure is water tight and resists external and internal floods.”

Also applicable to the following ITAAC:

ITAAC Item 6 in Table 2.4-8

Evaluate and correct these deficiencies.

14.03-8

ITAAC Item 9 in Table 2.4-7

Table 2.4-7, Item 9 has CW which states that the water tight measures for the UHS Makeup Structure will be designed for the *static* and dynamic flood forces. The ITA only requires establishing water tight measures for dynamic flood forces. Should the ITA specify *static* and dynamic flood forces?

Also applicable to following ITAAC:

ITAAC Item 7 in Table 2.4-8

14.03-9

ITAAC Item 1 in Table 2.4-9

The Commitment Wording is more specific than the AC. If the AC is more specific than the Commitment Wording that is okay, but vice versa is not.

The AC should more closely duplicate the Commitment Wording.

Also applicable to the following ITAAC:

ITAAC Item 2 in Table 2.4-9

ITAAC Item 5 in Table 2.4-9

ITAAC Item 6 in Table 2.4-24

ITAAC Item 7 in Table 2.4-24

ITAAC Item 2 in Table 2.4-26 for Item a.

Evaluate and resolve these deficiencies.

14.03-10

ITAAC Item 2 in Table 2.4-11

An inspection would be appropriate here to determine if the Turbine Building was built as designed structurally. This inspection would provide key information for the analysis since the analysis is not performed until the Turbine Building is built.

Also applicable to following ITAAC:

ITAAC Item 2 in Table 2.4-12
ITAAC Item 1 in Table 2.4-13
ITAAC Item 1 in Table 2.4-14
ITAAC Item 1 in Table 2.4-15
ITAAC Item 1 in Table 2.4-16
ITAAC Item 1 in Table 2.4-17
ITAAC Item 1 in Table 2.4-18
ITAAC Item 1 in Table 2.4-19
ITAAC Item 1 in Table 2.4-20

Evaluate and resolve these deficiencies.

14.03-11

ITAAC Item 1 in Table 2.4-21

SRP 14.3, App. A IV.4.B states that acceptance criteria should be objective and unambiguous.

Table 2.4-21, Item 1 has statement in CW that each mechanical division of the UHS Makeup Water Intake Structure Ventilation System shall be physically separated. The ITA requires inspection, but the AC states that the mechanical divisions will be separated by structural and/or fire barriers. What is the rating of the fire barriers and would an analysis be required in addition to inspections to determine if the fire barriers were sufficient to act as barriers between one division and another?

This is also applies to the following item:

ITAAC Item 2 in Table 2.4-22

14.03-12

ITAAC Item 3 in Table 2.4-21

SRP 14.3 App. A IV.1.A defines “analysis” as a calculation, mathematical computation, or engineering or technical evaluation. “Inspection” is defined as visual observations, physical observations, or a review of records of these activities. “Test” is defined as the actuation, or operation, or establishment or specified conditions to evaluate the performance of components.

The Commitment Wording states, “Each division of the UHS Makeup Water Structure Ventilation System shall be electrically independent.” The ITA column states only that inspections of the as-built system will be conducted. Electrical independence generally requires both physical separation and electrical isolation. Although inspection is appropriate to assess physical separation, it is not an adequate method to assess electrical isolation. Therefore the inspector will require a suitable method to assess whether electrical isolation exists. This is generally accomplished by tests, analyses, or a combination of these. Why doesn’t the ITA column provide for an appropriate method to assess electrical isolation?

Also applicable to the following ITAAC:

ITAAC Item 3 in Table 2.4-22
ITAAC Item 4 in Table 2.4-24

14.03-13

ITAAC Item 2 in Table 2.4-29
SRP 14.3 App. A IV.1.A defines “analysis” as a calculation, mathematical computation, or engineering or technical evaluation. “Inspection” is defined as visual observations, physical observations, or a review of records of these activities.

The Table 2.4-29, Item 3 Commitment Wording states, “Each Emergency Auxiliary Transformer shall be connected to the Switchyard via an independent circuit, sized to supply the four Emergency Power Supply System divisions.” The ITA column states only that inspections of the as-built system will be conducted. Verification of adequate circuit sizing requires an analysis of loads. Why doesn’t the ITA column provide for an analysis of the loads on the four Emergency Power Supply System divisions to assess adequate sizing of the circuits from the Emergency Auxiliary Transformers?