CCNPP3COLA PEmails

From: John Rycyna
Sent: Thursday, April 16, 2009 2:35 PM
To: Poche, Robert; McQueeney, Jennifer; katie.thurstin@unistarnuclear.com
Cc: CCNPP3COL Resource; Swagata Som; Ronaldo Jenkins; James Steckel; Joseph Colaccino; James Biggins; Adam Gendelman
Subject: Draft RAI No 115 EEB 1600.doc (PUBLIC)
Attachments: Draft RAI No 115 EEB 1600.doc

Rob,

Attached is DRAFT RAI No. 115. You have until April 30, 2009 to review it and to decide whether you need a conference call to discuss it. After the call or after April 30, 2009 the RAI will be finalized and sent to you. You then have 30 days to respond.

(This RAI is out of sequence. Draft RAI 114 has not been sent yet.)

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301-415-4122

Hearing Identifier: CalvertCliffs_Unit3Cola_Public_EX
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Subject: Draft RAI No 115 EEB 1600.doc (PUBLIC)
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From: John Rycyna

Created By: John.Rycyna@nrc.gov

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Options
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Return Notification: No
Reply Requested: No
Sensitivity: Normal
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Request for Additional Information No. 115
DRAFT
4/16/2009

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 08.03.01 - AC Power Systems (Onsite)
Application Section: 8.3 Onsite Power System

QUESTIONS for Electrical Engineering Branch (EEB)

08.03.01-3

Section 8.3.1.1.1, page 8.0-28: Emergency Power Supply System:

This section indicates the 4-division power supplies to the UHS Make-up Water System, each division with safety related 6.9 kV/480V power distribution transformer and associated 480 V Motor Control Centers (MCC). Though not specifically indicated in this section, we assume that the four 6.9 kV safety related switchgear 31-34 BDD for UHS system are located in the UHS electrical building as mentioned in section 8.3.1.1.7 for Electrical Equipment Layout. Please clarify this.

Also the four 6.9 kV EPSS switchgears are not listed in Table 8.3-2 (CCNPP3 EPSS Switchgear, Load Center, and Motor Control Center Numbering and Nominal Voltage). Complete the list with all major electrical equipment related to the UHS system.

Since the electrical building of UHS/Intake Structure is remotely located from the power block EPSS 6.9 kV switchgear 31-34 BDA, confirm that the power system analysis is performed to validate the adequate voltage regulation at the remote 6.9 kV and 480 buses. Also provide the basis for calculation and major equipment sizing for the site-specific items.

08.03.01-4

Section 8.3.1.1.2, Page 8.0-28, Normal Power Supply System for site specific cooling tower system:

The staff noticed that the cooling tower wet fans have been changed from a 480 V, 250 Hp rated fan to a site-specific 6.9 kV, 350 Hp rated fan for CCNPP Unit 3. As a result, the six, 480 V load centers have been replaced by four, 6.9 kV switchgear to accommodate the larger cooling tower fans. This is a change from EPR FSAR standardized design for electrical distribution system. Confirm if there is an overall load increase in the cooling tower system for CCNPP3 due to the fan size increase. Indicate if the capacity of any major equipment (such as Normal Auxiliary Transformers) supplying these loads needs to be changed, or confirm that they will remain within US EPR standard equipment sizes.

Table 8.3-3 provides the list of the NPSS 6.9 kV switchgear, which are stated to be located in Circulating Water System Cooling Tower area. Is this equipment planned to be located indoors in an electrical equipment building? Provide details. Also complete the List 8.3-3 with all other major electrical equipment such as distribution transformers, 480 V load centers and Motor Control Centers, related to the cooling tower facility, which are not identified.

08.03.01-5

Section 8.3.1.1.7, page 8.0-29, Electrical Equipment Layout:

1) UHS electrical equipment:
Since the UHS Electrical Building is remotely located, discuss whether the four safety related EPSS 6.9 kV switchgear, number 31 to 34 BDD, require a separate local DC battery/UPS system for control power. Provide details.

2) Desalination Plant/waste Water/Circulating Water System Cooling tower:

It is noted that a site specific transformer connected to 500 kV switchyard supplies 6.9 kV power to these systems (Fig 8.3-3). It is observed that this is a single power feed through this transformer to these facilities and a fault in the power distribution system may cause the failure of the 500 kV red bus (Fig 8.2-2) which may interrupt the off-site power. Applicant to address this issue of the 500 kV bus/offsite power failure. Also clarify why these loads are not supplied redundant power feeds from the NPSS 6.9 kV switchgear buses located in the NI/Power block?

08.03.01-6

Section 8.3.1.1.8, page 8.0-29, Raceway and cable routing:

This section identifies the safety related distribution system for the UHS Make-up Water System and the electrical building but site specific details for the raceway and cable routing are not addressed. Applicant to confirm that the US EPR FSAR (DCD) is incorporated by reference for the raceway and cable routing design such as load group segregation and other design aspects for the UHS electrical power distribution system/electrical building.

08.03.01-7

Section 8.3.1.1.9, page 8.0-29, Independence of Redundant Systems:

This section identifies the site specific safety related distribution system for the UHS Makeup Water System and the electrical building associated with UHS Makeup Water System, but site specific details related to the independence of the redundant systems are not addressed. Applicant to confirm if the US EPR FSAR is incorporated by

reference regarding the independence of the redundant systems for the UHS electrical distribution system/electrical building.

08.03.01-8

Section 8.3.1.2.2, page 8.0-30, Compliance with GDC 4:

The 6.9 kV EPSS switchgear (31-34 BDD) for site specific UHS Make-up Water System are assumed to be located in the UHS Electrical Building but are not listed in the Table 3.11-1 for Site Specific Environmentally Qualified Electrical/I&C Equipment. Switchgear 31-34 BDD are shown as Class 1E in the single line 8.3.1. Please explain why this equipment does not need to be included as Class 1E switchgear in the list of table 3.11-1, as well as any other equipment located in this building that has been excluded, or add them to the list.

08.03.01-9

Section 8.3.1.3, page 8.3-30, Electrical Power System Calculation and Distribution System Studies for AC system:

Confirm that electrical power system calculation and studies are performed for the site specific UHS system/facilities with safety related equipment to analyze the AC distribution system.

This section indicates that US-EPR FSAR Figure 8.3-4 for Typical Station Grounding Grid design is applicable to CCNPP3. This figure does not include the remote site specific lightning/grounding layout of UHS facility. Describe the lightning/grounding conceptual design for the UHS/Intake Structure area/Electrical Building where safety related equipment is located.

In addition, describe the overall site-specific integrated grounding plan that includes the 500 kV CCNPP3 switchyard and the interface between the NI/power block and the switchyard. Also address all site specific lightning and grounding systems as an ITAAC item.

08.03.01-10

Section 8.3.2, page 8.3-30, DC Power System:

Does the applicant need separate local DC/UPS power for the remote site specific UHS facility safety related electrical equipment/system such as control power? If so please describe how this is accomplished.

Does the applicant need separate local DC/UPS power for the remote Desalination/Cooling tower area electrical equipment such as 6.9 kV switchgear control power? If so please describe how this is accomplished.