CCNPP3COLA PEmails

From: John Rycyna
Sent: Tuesday, April 14, 2009 11:21 AM
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 110 EEB 1469.doc (PUBLIC)
Attachments: Draft RAI No 110 EEB 1469.doc

Rob,

Attached is DRAFT RAI No. 110. You have until April 28, 2009 to review it and to decide whether you need a conference call to discuss it. After the call or after April 28, 2009 the RAI will be finalized and sent to you. You then have 30 days to respond.

John Rycyna, PE
Sr. Project Manager
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
301-415-4122

Hearing Identifier: CalvertCliffs_Unit3Cola_Public_EX
Email Number: 699

Mail Envelope Properties (499C2FC6BB962446994CA8682D8ADF33178E623EDF)

Subject: Draft RAI No 110 EEB 1469.doc (PUBLIC)
Sent Date: 4/14/2009 11:21:07 AM
Received Date: 4/14/2009 11:21:09 AM
From: John Rycyna

Created By: John.Rycyna@nrc.gov

Recipients:
"CCNPP3COL Resource" <CCNPP3COL.Resource@nrc.gov>
Tracking Status: None
"Swagata Som" <Swagata.Som@nrc.gov>
Tracking Status: None
"Ronaldo Jenkins" <Ronaldo.Jenkins@nrc.gov>
Tracking Status: None
"James Steckel" <James.Steckel@nrc.gov>
Tracking Status: None
"Joseph Colaccino" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"James Biggins" <James.Biggins@nrc.gov>
Tracking Status: None
"Adam Gendelman" <Adam.Gendelman@nrc.gov>
Tracking Status: None
"Poche, Robert" <robert.poche@unistarnuclear.com>
Tracking Status: None
"McQueeney, Jennifer" <Jennifer.McQueeney@unistarnuclear.com>
Tracking Status: None
"katie.thurstin@unistarnuclear.com" <katie.thurstin@unistarnuclear.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	436	4/14/2009 11:21:09 AM
Draft RAI No 110 EEB 1469.doc	32366	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Request for Additional Information No. 110
DRAFT
4/14/2009

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 08.02 - Offsite Power System
Application Section: 8.2

QUESTIONS for Electrical Engineering Branch (EEB)

08.02-1

Section 8.2.1.1, page 8-11 of FSAR:
Indicates that the CCNPP3 design contains “four normally energized, physically independent transmission lines, designed and located to minimize the likelihood of their simultaneous failure under operating, postulated accident and postulated adverse environmental conditions including transmission line tower failure or transmission line breaking”. In view of this statement, the staff reviewed the 500 kV Switchyard and Transmission line Layout drawing 8.2-1. This drawing shows the four new overhead transmission lines are laid parallel in close proximity with each other on one right-of-way. The close parallel runs show apparent vulnerability to severe natural phenomena or weather events which can cause simultaneous failure such as tower collapse or line breaking. Address this staff concern and provide a highlight of the design bases for the SSCs to reflect appropriate consideration of the most severe of the historically reported natural phenomena. The applicant is requested to amplify their discussion of compliance with the requirements of GDC 2 and 4 to specifically address this concern. This discussion should confirm that the transmission tower separation, line installation, and clearances are consistent with the National Electric Safety Code (NESC).

08.02-2

The drawing 8.2-2 of FSAR shows a “Site Specific Aux Transformer” connected to the Red Bus. Please provide the purpose/application/ and connection details of this transformer.

08.02-3

Section 8.2.2.4 of FSAR: Compliance to GDC 17 and site-specific grid stability analysis.

a) Page 8-16, system impact study - Applicant to provide a summary of the grid stability steady-state and transient analysis results and the system voltage study results to demonstrate compliance with the final paragraph of GDC 17, with the assumptions made, and the acceptable criteria used for the case(s) analyzed. The analysis to consider the cases of generator trip, loss of largest unit supplying the grid, loss of the largest transmission circuit or inter-tie, and loss of largest load on grid.

b) Page 8-16, last paragraph: The Applicant mentioned that “During certain maintenance outages the output of the unit will need to be limited due to

instability. The most restrictive output limitation is during an outage on the 500 kV Waugh Chapel to Brighton line which limits the plant to approximately 85% output." It does not appear to meet the single contingency criteria identified in 8.2.2.4 of EPR-FSAR on the "loss of the largest transmission circuit or inter-tie." How you will meet the GDC-17 requirement in this regard?

c) Page 8-17, Applicant to address that the real and reactive power support to the grid from the nuclear unit is adequate as not to result in grid instability and subsequent loss of off-site power. Describe any limits on the main generator MVAR output such that loss of the main generator will not result in an unacceptable voltage in the switchyard. Describe any auxiliary transmission system equipment, such as capacitor banks, static VAR compensators that may be necessary to offset loss of MVAR support on loss of the main generator.

08.02-4

Section 8.2.2.4, page 8-20 of FSAR: 500 kV switchyard primary and secondary relaying system - Provide a relay protection scheme/single line diagram for understanding of the primary and secondary protection scheme and zone of protection. Explain how the typical zone of protection will include main step up transformers, essential auxiliary transformers and normal auxiliary transformers.

08.02-5

Section 8.2.2.5, page 8-22 of CCNPP3 FSAR provides a site-specific station switchyard equipment inspection and testing plan. It is noted that an interface agreement will be established to define the interfaces and working relationships between various CCNPP3 site organizations and BGE, who is responsible for maintaining these facilities. Therefore, adequate procedures, administrative controls, and protocols are required to ensure that no modifications to the offsite power system circuits credited for satisfying GDC 17 and GDC 18 are implemented by offsite transmission system operating authorities, responsible for maintenance, modification, and operation of the offsite transmission grid, without the performance of a proper safety evaluation. Provide details of how the above requirements are met.

08.02-6

Section 8.2.2.5, pg 8-22: This discussion of compliance with GDC 18 should expand to include the testing and inspection of the offsite system for switchyard grounding and lightning protection systems. Site-specific design aspects of the switchyard grounding, lightning protection and surge protection devices need be addressed, as discussed in Regulatory Guide 1.204 to safeguard the SSCs from lightning strikes and the resulting secondary effects.

08.02-7

The CCNPP3 application incorporates the U.S. EPR FSAR without departures for Section 8.2.2.8. The U.S. EPR FSAR, page 8.0-24 refers to section 17.6

(Operational Programs) in addressing these requirements regarding compliance with 10CFR 50.65 (a)(4). CCNPP's section 17.6 notes that NEI Topical Report 07-02, "Maintenance Rule" is incorporated as written.

Please discuss how the plant specific equipment identified in this section is included in the programs for reliability assessment (EPR FSAR 17.4) and maintenance rule program Implementation (EPR FSAR 17.6) for offsite power system/equipment.

08.02-8

Section 8.2 : Describe the site specific wetting conditions or submergence, if any, as a result of tidal, seasonal or weather event water intrusion, for underground power cables connecting offsite sources to safety buses or power and control cables to equipment with accident mitigation functions. Also address how the proposed design for cable routing, layout and monitoring is to be implemented to prevent gradual degradation as addressed in GL-2007-01.