CCNPP3COLA PEmails

From: John Rycyna
Sent: Thursday, November 20, 2008 5:26 PM
To: Wrobel, George
Cc: CCNPP3COL Resource; James Biggins; Adam Gendelman; Joseph Colaccino; Tarun Roy; Gregory Makar; David Terao
Subject: Draft RAI No 40 CIB1 1501.doc
Attachments: Draft RAI No 40 CIB1 1501.doc

George,

Attached is DRAFT RAI No. 40. You have ten working days to review it and to decide whether you need a conference call to discuss it. After the call or after ten days the RAI will be finalized and sent to you. You then have 30 days to respond.

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

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Subject: Draft RAI No 40 CIB1 1501.doc
Sent Date: 11/20/2008 5:25:35 PM
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From: John Rycyna

Created By: John.Rycyna@nrc.gov

Recipients:
"CCNPP3COL Resource" <CCNPP3COL.Resource@nrc.gov>
Tracking Status: None
"James Biggins" <James.Biggins@nrc.gov>
Tracking Status: None
"Adam Gendelman" <Adam.Gendelman@nrc.gov>
Tracking Status: None
"Joseph Colaccino" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"Tarun Roy" <Tarun.Roy@nrc.gov>
Tracking Status: None
"Gregory Makar" <Gregory.Makar@nrc.gov>
Tracking Status: None
"David Terao" <David.Terao@nrc.gov>
Tracking Status: None
"Wrobel, George" <George.Wrobel@unistarnuclear.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

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MESSAGE	424	11/20/2008 5:26:04 PM
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Options
Priority: Standard
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Request for Additional Information No. 1501 Revision 2
DRAFT
11/20/2008

Calvert Cliffs Unit 3
UniStar
Docket No. 52-016
SRP Section: 05.04.02.02 - Steam Generator Program
Application Section: 5.4.2.5

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)

05.04.02.02-1

According to SRP Section 5.4.2.2, the Steam Generator Program is an operational program that should be fully described, with implementation milestones listed in the appropriate table in Chapter 13 of the FSAR. It is not clear to the staff that the application's FSAR at Table 13.4-1 ("Operational Programs Required by NRC Regulations and Program Implementation") includes the Steam Generator Program because it does not reference the applicant's FSAR, Section 5.4, or the technical specifications containing the implementation requirements for steam generator tube inspection. Please discuss how the application ensures the Steam Generator Program is included as an operational program.

05.04.02.02-2

According to SRP Section 5.4.2.2, an acceptable steam generator inspection program will ensure all tubes are inspected before being placed into service, using techniques that are expected to be used during subsequent inspections. Although a preservice inspection is described in Section 5.4.2.5.2.2 of the U.S. EPR FSAR, it is not part of the requirements in the applicant's technical specifications. Therefore, please modify the FSAR to ensure that the preservice inspection is performed (for example, by adding a reference to FSAR Section 5.4.2.5 in Table 13.4-1), or justify an alternative.

05.04.02.02-3

Part 4 of the application, Technical Specifications, Section 5.5.8.b.2 states that "[t]he primary to secondary accident induced leakage rate for any design basis accident, other than a SG tube rupture, shall not exceed the leakage rate assumed in the accident analysis in terms of total leakage rate for all SGs and leakage rate for an individual SG." It does not include a maximum leakage rate.

As incorporated by SRP Section 5.4.2.2, Standard Technical Specifications Section 5.5.9.b.2 provides in part that "[l]eakage is not to exceed [1 gpm] [gallon per minute] per SG [steam generator], except for specific types of degradation at specific locations as described in paragraph c of the Steam Generator Program." The 1 gpm limit is based on severe accident considerations and may be more (or less) than the value assumed in

the radiological dose assessment. Please modify Section 5.5.8.b.2 to comply with the SRP, or justify an alternative.

05.04.02.02-4

The applicant's Technical Specifications (TS) concerning limiting conditions for operation, in Section 3.4.12.d and Surveillance Requirement 3.4.12.2 (Reactor Coolant System Operational Leakage) differ from the language in the Standard Technical Specifications (STS), as incorporated by SRP Section 5.4.2.2. The applicant's TS proposes an operational leakage limit of 150 gallons per day (gpd) through "each steam generator." The STS language provides for operational leakage of 150 gpd through "any one steam generator." The applicant's language could be interpreted as allowing more than 150 gpd through one or more steam generators as long as at least one of the steam generators has not exceeded 150 gpd. The STS language is meant to ensure that action is taken as soon as one SG exceeds the 150 gpd limit. This is also the case concerning the applicant's TS Bases. Please modify these provisions to comply with the STS, or justify an alternative.

05.04.02.02-5

In the applicant's Technical Specifications (TS), the definition of "Identified LEAKAGE" on page 1.1-4 reads, in part, as "Reactor Coolant System (RCS) LEAKAGE through a steam generator (SG) to the Secondary System . . . ." The Standard Technical Specifications (STS),as incorporated in SRP Section 5.4.2.2, define identified leakage, in part, as "Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System *(primary to secondary LEAKAGE)* . . . ." (Emphasis added.) This last portion, "(primary to secondary LEAKAGE)," is absent from the applicant's definition. Please modify the definition in the TS to comport with the language of the STS, or justify an alternative.

05.04.02.02-6

In the applicant's Technical Specifications (TS), the definition of "Pressure Boundary LEAKAGE" on page 1.1-4 reads, "LEAKAGE (except SG LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall." The Standard Technical Specifications (STS), as incorporated in SRP Section 5.4.2.2, define pressure boundary leakage as "LEAKAGE *(except primary to secondary LEAKAGE)* through a nonisolable fault in an RCS component body, pipe wall, or vessel wall." (Emphasis added.) The parenthetical "(except primary to secondary LEAKAGE)" was changed to "(except SG LEAKAGE)." Please modify the definition in the TS to comport with the language of the STS, or justify an alternative.

05.04.02.02-7

The applicant's description of Condition A in its Technical Specifications (TS) for limiting condition for operation (LCO) 3.4.16, "Steam Generator (SG) Tube Integrity," provides for LCO when "[o]ne or more SG tubes satisfying the tube plugging criteria and not plugged in accordance with the Steam Generator Program." The Standard Technical Specifications (STS), as incorporated in SRP Section 5.4.2.2, provide in LCO 3.4.20 that "SG tube integrity shall be maintained. . . . AND . . . All SG tubes satisfying the tube repair criteria shall be plugged [or repaired] in accordance with the Steam Generator Program." The use of "plugging" instead of "repair" also occurs in Surveillance Requirement 3.4.16.2, TS 5.5.8 (c and d), and corresponding sections in the TS Bases. Please modify the above TS sections to comport with the STS or justify an alternative.

05.04.02.02-8

The applicant's Technical Specifications (TS), Section 5.5.8.c concern "[p]rovisions for SG tube plugging criteria. Tubes found by inservice inspection to contain indications with a depth equal to or exceeding 40% of the nominal tube wall thickness per eddy current results shall be plugged." The Standard Technical Specifications (STS), as incorporated in SRP Section 5.4.2.2, provide in Section 5.5.9.c that "[t]ubes found by inservice inspection to contain flaws with a depth equal to or exceeding [40%] of the nominal tube wall thickness shall be plugged [or repaired]." Please modify the above TS section and applicable TS bases to use the term "flaws" instead of "indications," or justify an alternative. Further, please remove the phrase "per eddy current results" in the above TS and applicable TS bases, or justify an alternative, since other examination techniques may be used.

05.04.02.02-9

The applicant's Technical Specifications (TS), Section 5.5.8.d.1, specify that the applicant will "[i]nspect 100% of the tubes in each steam generator during the first refueling outage." Section 5.5.9.d.1 of the Standard Technical Specifications (STS), as incorporated by SRP, Section 5.4.2.2, provide that the applicant will "[i]nspect 100% of the tubes in each SG during the first refueling outage following SG replacement." Therefore, as the applicant's TS exist currently, if the steam generators were replaced, the TS would not require 100 percent inspection of the new SGs during the first refueling outage. Please modify the above section to provide for tube inspection following SG installation, or justify an alternative.

05.04.02.02-10

The applicant's Technical Specifications (TS), in Section 5.6.7.h, provide that a "report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.8, "Steam Generator (SG) Program". The report shall include: . . . h. The plugging percentage for all plugging in each SG." The Standard Technical Specifications (STS), as incorporated in SRP Section 5.4.2.2, in Section 5.6.7, provide for such a report,

including “h. The *effective* plugging percentage for all plugging [and tube repairs] in each SG . . . .” (Emphasis added.) Please modify the above TS section to comport with the STS (i.e., by adding “effective” before “plugging percentage”), or justify an alternative.

05.04.02.02-11

Concerning the applicant’s FSAR, Section 5.4.2.5.2.2, “Tube Inspection,” (COL Item 5.4-1); please clarify the relationship between the proposed Steam Generator Tube Inspection Program and the applicant’s obligations under 10 C.F.R. 50.55a. Specifically, it is the NRC Staff’s understanding that the word “initial” in the first paragraph of the applicant’s description of its Steam Generator Tube Inspection program refers to the program described therein. This is potentially confusing, because in 10 C.F.R. 50.55a, the word “initial” is used to refer to the first 120-month inservice inspection interval. In addition, the first sentence of the second paragraph of Section 5.4.2.2 does not use the word “initial,” but apparently addresses the initial inservice inspection interval.

05.04.02.02-12

The applicant’s FSAR, Section 5.4.2.5.2.2, “Tube Inspection,” (COL Item 5.4-1) states that “[t]he initial Steam Generator Tube Inspection Program will comply with ASME Boiler and Pressure Vessel Code, Section XI, 2004 edition (ASME, 2004). This code is consistent with that established in U.S. EPR FSAR Section 5.4.2. *No relief requests or alternatives are required. . . .* “Should relief requests be required, they will be developed through the regulatory process and submitted to the NRC for approval in accordance with 10 CFR 50.55a(g)(5). The relief requests shall include appropriate justifications and proposed alternative inspection methods.” The first paragraph states that no relief requests are required, while the third paragraph indicates relief requests may be required. Please clarify this apparent discrepancy.