PMBelCOL PEmails

From: Joseph Sebrosky
Sent: Thursday, July 03, 2008 10:45 AM
To: 'rgrumbir@gmail.com'; 'alsterdis@tva.gov'; 'erg-xl@cox.net'; 'pshastings@duke-energy.com'; 'Ray, Phillip M'; 'kslays@duke-energy.com'; 'Bob Hirmanpour'
Cc: PMBelCOL PEmails; Mark Thaggard; Brian Hughes; RidsNroDnrlNwe1 Resource; Stephanie Coffin; Manny Comar; RidsNroLAKGoldstein Resource; Tanya Simms; Ann Hodgdon; RidsOgcMailCenter Resource; Ravindra Joshi; RidsAcrsAcnw_MailCTR Resource; Patrick Moulding; RidsRgn2MailCenter Resource; Kenneth See; Christopher Cook
Subject: RAI Letter No. 064 Related SRP Section 2.4.2 for Bellefonte Units 3 and 4
Attachments: BLN-RAI-LTR-064.pdf

To All,

Attached is RAI Letter No. 064 related SRP Section 2.4.2 for Bellefonte Units 3 and 4. The ADAMS accession number is ML081850252.

Joseph Sebrosky

Hearing Identifier: Bellefonte_COL_Public_EX
Email Number: 385

Mail Envelope Properties (C4A4C9A16294FB4CBA5A36312D05FFAC0A9AD4778D)

Subject: RAI Letter No. 064 Related SRP Section 2.4.2 for Bellefonte Units 3 and 4
Sent Date: 7/3/2008 10:44:41 AM
Received Date: 7/3/2008 10:44:41 AM
From: Joseph Sebrosky

Created By: Joseph.Sebrosky@nrc.gov

Recipients:
"PMBelCOL PEmails" <PMBelCOL.PEmails@nrc.gov>
Tracking Status: None
"Mark Thaggard" <Mark.Thaggard@nrc.gov>
Tracking Status: None
"Brian Hughes" <Brian.Hughes@nrc.gov>
Tracking Status: None
"RidsNroDnrlNwe1 Resource" <RidsNroDnrlNwe1.Resource@nrc.gov>
Tracking Status: None
"Stephanie Coffin" <Stephanie.Coffin@nrc.gov>
Tracking Status: None
"Manny Comar" <Manny.Comar@nrc.gov>
Tracking Status: None
"RidsNroLAKGoldstein Resource" <RidsNroLAKGoldstein.Resource@nrc.gov>
Tracking Status: None
"Tanya Simms" <Tanya.Simms@nrc.gov>
Tracking Status: None
"Ann Hodgdon" <Ann.Hodgdon@nrc.gov>
Tracking Status: None
"RidsOgcMailCenter Resource" <RidsOgcMailCenter.Resource@nrc.gov>
Tracking Status: None
"Ravindra Joshi" <Ravindra.Joshi@nrc.gov>
Tracking Status: None
"RidsAcrsAcnw_MailCTR Resource" <RidsAcrsAcnw_MailCTR.Resource@nrc.gov>
Tracking Status: None
"Patrick Moulding" <Patrick.Moulding@nrc.gov>
Tracking Status: None
"RidsRgn2MailCenter Resource" <RidsRgn2MailCenter.Resource@nrc.gov>
Tracking Status: None
"Kenneth See" <Kenneth.See@nrc.gov>
Tracking Status: None
"Christopher Cook" <Christopher.Cook@nrc.gov>
Tracking Status: None
"'rgrumbir@gmail.com'" <rgrumbir@gmail.com>
Tracking Status: None
"'alsterdis@tva.gov'" <alsterdis@tva.gov>
Tracking Status: None
"'erg-xl@cox.net'" <erg-xl@cox.net>
Tracking Status: None
"'pshastings@duke-energy.com'" <pshastings@duke-energy.com>
Tracking Status: None

'"Ray, Phillip M'" <pmray@tva.gov>
Tracking Status: None
'"kslays@duke-energy.com'" <kslays@duke-energy.com>
Tracking Status: None
'"Bob Hirmanpour'" <bobhirman@live.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	177	7/3/2008 10:44:41 AM
BLN-RAI-LTR-064.pdf	162246	

Options

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

BellefonteRAIsPEm Resource

From: Joseph Sebrosky
Sent: Thursday, July 03, 2008 10:25 AM
To: BellefonteRAIsPEm Resource
Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 064 RELATED TO SRP SECTION 2.4.2 FOR THE BELLEFONTE UNITS 3 and 4 COMBINED LICENSE APPLICATION
Attachments: BLN-RAI-LTR-064.doc

Hearing Identifier: Bellefonte_COL_RAI_Public
Email Number: 41

Mail Envelope Properties (C4A4C9A16294FB4CBA5A36312D05FFAC0A9AD4778B)

Subject: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 064 RELATED TO SRP SECTION 2.4.2 FOR THE BELLEFONTE UNITS 3 and 4 COMBINED LICENSE APPLICATION
Sent Date: 7/3/2008 10:24:38 AM
Received Date: 7/3/2008 10:24:38 AM
From: Joseph Sebrosky

Created By: Joseph.Sebrosky@nrc.gov

Recipients:
"BellefonteRAIsPEm Resource" <BellefonteRAIsPEm.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	3	7/3/2008 10:24:38 AM
BLN-RAI-LTR-064.doc	62970	

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

July 3, 2008

Ms. Andrea L. Sterdis
Manager, Nuclear Licensing & Industry Affairs
Nuclear Generation Development & Construction
Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 064 RELATED TO SRP SECTION 2.4.2 FOR THE BELLEFONTE UNITS 3 and 4 COMBINED LICENSE APPLICATION

Dear Ms. Sterdis:

By letter dated October 30, 2007, as supplemented by letters dated November 2, 2007, January 8, 2008 and January 14, 2008, Tennessee Valley Authority (TVA) submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advance passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-1132.

Sincerely,

/RA/

Joseph M. Sebrosky, Senior Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-014
52-015

eRAI Tracking No. 422

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-1132.

Sincerely,

/RA/

Joseph M. Sebrosky, Senior Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-014
52-015

eRAI Tracking No. 422

Enclosure:
Request for Additional Information

Distribution:

Public	MThaggard	BHughes
RidsNroDnrlNwe1	SCoffin	MComar
RidsNroLAKGoldstein	TSimms	AHodgdon
RidsOgcMailCenter	RJoshi	KSee
RidsAcrsAcnwMailCenter	PMoulding	CCook
RidsRgn2MailCenter		
JSebrosky		

NRO-002

OFFICE	RHEB*	RHEB/BC*		OGC	NWE1/L-PM
NAME	KSee	MThaggard		AHodgdon*	JSebrosky*
DATE	6/17/08	6/17/08		06/18/08	7/3/08

*Approval captured electronically in the electronic RAI system.

OFFICIAL RECORD COPY

Request for Additional Information
Bellefonte Units 3 and 4
Tennessee Valley Authority
Docket No. 52-014 and 52-015
SRP Section: 02.04.02 - Floods
Application Section: 2.4.2

QUESTIONS from Hydrologic Engineering Branch

02.04.02-1

TVA should justify use of the Christofano methodology to model dam embankment breaching and document their justification for use of this method. TVA needs to also provide a copy of the Christofano reference. This issue is associated with Attachment 5, item 47, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

Note: Subsequent to the hydrology-related safety site trip the staff received a May 23, 2008, letter from the U.S. Department of the Interior Bureau of Reclamation regarding the use of the Cirstofano method (see ADAMS ML081570447). The letter states in part that "the method developed in 1965, by Eugene A. Cristofano of the Bureau of Reclamation for computing the erosion rate for failure of an earthfill dam is no longer being actively used by our agency."

02.04.02-2
TVA should provide the NRC staff with Geographic Information System shape files of the new cross sections used in the updated simulated open channel hydraulics (SOCH) for Chickamauga, Nickajack and Guntersville reservoirs. This issue is associated with Attachment 5, item 49, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

02.04.02-3
TVA should provide diagrams of dam cross sections for: 1) the tributary dams found to be controlling during seismic events, and 2) all main stem dams. The diagrams should clearly show flood levels and assumed sections of the dam that fail and how they are postulated to fail for the given event. TVA should also include a diagram of the Dallas Bay area above Chickamauga Dam such that the diagram shows how at high reservoir levels this area will provide a flow path for bypassing the Chickamauga Dam. TVA needs to perform sensitivity runs to evaluate the impacts of modifying the Chicamauga lock. TVA should also consider how potential impacts from future modifications of the Chicamauga lock should be captured in the Bellefonte 3 and 4 licensing basis. This issue is associated with Attachment 5, item 50, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

02.04.02-4
The applicant should clarify in the final safety analysis report the wind wave runup calculation from the U.S. Army Corps of Engineers reference (Coastal Engineering Manual). This issue is associated with Attachment 5, item 51, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

Enclosure

02.04.02-5
TVA should check consistency between winds speeds reported in Section 2.3 and wind speed used in Subsection 2.4.3.6 of the final safety analysis report (FSAR) and make appropriate changes to the FSAR. This issue is associated with Attachment 5, item 52, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

02.04.02-6
TVA should provide a sensitivity run to investigate the effects of peaking each sub-basin unit hydrograph to account for non-linear behavior of the watershed during the probable maximum flood (PMF). This sensitivity run is discussed in the summary of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

02.04.02-7
During the May 13 -16, 2008, hydrology-related safety site trip the staff identified eleven items that should be clarified/corrected in the April 17, 2008 draft white paper (ADAMS accession number ML081120497) before the white paper is finalized. This issue is associated with Attachment 5, item 54, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

1) Appendix A figures present observed elevations that fall outside the guide curves. TVA will expand their discussion of these figures in the next version of the white paper to explain these variations.

2) Section 4.1, last paragraph (Page 11) refers to “studies done by others and unpublished work by TVA.” TVA is to provide clarification of these studies in the white paper and provide copies of the studies for staff review during the June 23, 2008 Knoxville trip.

3) Using figure 7 and 8 as an example, curves are identified as being “reproduced by composite unit graph.” TVA is to provide an explanation in the text where further information on how these figures were developed can be found.

4) On figure 10, TVA is to resolve whether or not the “Blue dots” represent real data.

5) On figure 12, TVA is to explain the note on the graph that states “Hoch’s estimated inflow.”

6) Using figure 13 as an example, TVA is to develop text to describe the method used to develop the curve.

7) Page 27 section 4.2.1 TVA is to clarify overall text on what is meant by stable model and stability criteria and tie this discussion to page 32.

8) Page 32, last paragraph TVA is to change the word “disadvantage” to “advantage.”

9) Page 36 Section 4.2.5 first paragraph last sentence TVA is to clarify the the relationship between HEC-2 and the SOCH code.

10) Figure 30 through figure 39, TVA will clarify the run sequence associated with these figures in the white paper.

11) In Section 5.3 TVA is to expand the white paper discussion regarding work crew access for reservoir operations during and after the antecedent storm and will include a discussion of the Memorandum of Understanding with the US Army Corps of Engineers.

02.04.02-8
During the May 13 -16, 2008, hydrology-related safety site trip the staff and TVA identified nine commitments in the applicant's draft white paper dated April 17, 2008 (ADAMS accession number ML081120497) regarding the simulated open channel hydraulics (SOCH) code used in the probable maximum flood and dam breach analysis. These commitments relate to future actions by TVA. The purpose of this question is to track these commitments to resolution. This issue is associated with Attachment 5, item 53, of the May 13 -16, 2008, hydrology-related safety site trip report dated June 12, 2008 (ADAMS accession number ML081610308).

A location for the commitments in the white paper is as follows:

1) Bottom of page 34 last sentence includes a commitment for a comparative analysis.
2) Cover letter for the white paper indicates that an update will be provided the week of May 26, 2008.
3) Page 52, section 5.3.1, first paragraph last sentence includes a commitment regarding the verification process.
4) Page 60 last paragraph contains a commitment regarding the verification process.
5) Page 62 first and second bullets contain commitments regarding bathymetry data.
6) Page 62 contains commitments regarding the analysis of the 2003 flood.
7) Page 62 contains commitments regarding updating and verifying hydrographs.
8) Page 62 contains commitments that updated models will be used.
9) Page 62 contains commitments regarding reservoir operating guides and spillway rating curves being reviewed.