



Tennessee Valley Authority, 1101 Market Street, LP 5A, Chattanooga, Tennessee 37402-2801

January 29, 2010

10 CFR 52.79

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

In the Matter of )  
Tennessee Valley Authority )

Docket No. 52-014 and 52-015

**BELLEFONTE COMBINED LICENSE APPLICATION – RESPONSE TO REQUEST FOR  
ADDITIONAL INFORMATION – HYDROLOGY**

Reference:

- (1) Letter from Joseph M. Sebrosky (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 145 Related to SRP Section 2.4.2 for the Bellefonte Units 3 and 4 Combined License Application, dated February 2, 2009
- (2) Letter from Andrea L. Sterdis to Document Control Desk (NRC), Bellefonte Combined License Application-Response to Request for Additional Information-Hydrology, dated February 20, 2009.

This letter provides the Tennessee Valley Authority's (TVA) supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) items included in Reference 1. This information supplements the response provided in Reference 2

As discussed previously with NRC project management, the data provided on the enclosed DVD is of a nature that is not easily converted to PDF output files, and therefore may be inappropriate for inclusion on ADAMS. This information is necessary for the NRC to perform confirmatory analysis.

If you should have any questions, please contact Tom Ryan at 1101 Market Street, LP5A, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-2596, or via email at [wtryan@tva.gov](mailto:wtryan@tva.gov).

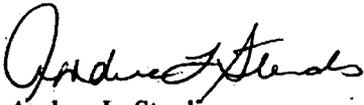
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RAI Response

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 29<sup>th</sup> day of Jan, 2010.

Sincerely,



Andrea L. Sterdis  
Manager, New Nuclear Licensing and Industry Affairs  
Nuclear Generation Development & Construction

Enclosure  
cc: See Page 3

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Page 3  
RAI Response

cc: (w/ Enclosures)

J. P. Berger, EDF  
J. M. Sebrosky, NRC/HQ  
E. Cummins, Westinghouse  
S. P. Frantz, Morgan Lewis  
M. W. Gettler, FP&L  
R. Grumbir, NuStart  
P. S. Hastings, NuStart  
P. Hinnenkamp, Entergy  
M. C. Kray, NuStart  
D. Lindgren, Westinghouse  
G. D. Miller, PG&N  
M. C. Nolan, Duke Energy  
N. T. Simms, Duke Energy  
K. N. Slays, NuStart  
G. A. Zinke, NuStart

cc: (w/o Enclosure)

B. C. Anderson, NRC/HQ  
M. M. Comar, NRC/HQ  
B. Hughes/NRC/HQ  
R. G. Joshi, NRC/HQ  
R. H. Kitchen, PGN  
M. C. Kray, NuStart  
A. M. Monroe, SCE&G  
C. R. Pierce, SNC  
R. Reister, DOE/PM  
L. Reyes, NRC/RII  
T. Simms, NRC/HQ  
L. Raghavan, NRC/HQ  
T. Boyce, NRC/HQ

Enclosure  
TVA letter dated January 29, 2010  
RAI Response

Responses to NRC Request for Additional Information letter No. 145 dated February 2, 2009  
(2 pages, including this list)

<u>RAI Number</u>	<u>Date of TVA Response</u>
RAI 02.04.02-9	This letter see following pages

<u>Associated Additional Attachments / Enclosures</u>	<u>Pages Included</u>
Attachment 02.04.02-9A	5 Pages

Enclosure  
TVA letter dated January 29, 2010  
RAI Response

**NRC Letter Dated: February 2, 2009**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 02.04.02-9**

During the June 23 Workshop held in Knoxville, TVA presented bathymetry and cross-section maps to be used in the updated simulated open channel hydraulics (SOCH) model for Chickamauga, Nickajack, and Guntersville reservoirs. It was the understanding of NRC staff that additional maps were being prepared for Watts Bar and Ft. Loudoun-Tellico reservoirs, but the data used to generate the maps were still under review. These maps (as electronic Geographic Information System (GIS) files) were requested during the Workshop. TVA stated that additional review was needed but that they would be provided when the review was complete. In the July 3, 2008 letter to TVA, NRC formally requested (RAI 02.04.02-02) the GIS files. TVA provided a response on August 1 (RAI Response Letter 64) to RAI 02.04.02-02, stating that the GIS data were provided in the electronic data package provided at the June 23 Workshop (see ML0821801181). However, after searching the data package provided by TVA, these files have not been found. On January 22, 2009, TVA and NRC staff discussed the RAI response and the requested datasets. NRC now understands that the recently-collected bathymetry data will not be available until May 2009.

NRC staff requests that TVA provide the processed bathymetric and near-shore topographic data for Guntersville, Nickajack, Chickamauga, Watts Bar, and Ft. Loudoun-Tellico reservoirs. As discussed on January 22, 2009, these data can be provided in ESRI GeoDatabase format. The GIS layers to include in the ESRI 9.x GeoDatabase are the original bathymetric point data and the processed bathymetric surface(s), in either raster or TIN format. GIS layers should represent the bathymetry, near-shore topography, and the SOCH cross-section locations.

**BLN RAI ID: 2046**

**BLN RESPONSE:**

TVA is providing BLN Hydrology DVD's with the data files listed in Attachment 02.04.02-9A. These data files have also been documented in TVA calculations. The associated calculation number for each data file is provided for future reference to facilitate NRC review and TVA communications regarding these files.

The files are grouped by reservoir in separate folders. Refer to the tables contained in Attachment 02.04.02-9A for folder descriptions. The data files have been checked and verified to ensure support for the TVA's SOCH model. All associated geometry calculations for these reservoirs have been approved for issue by TVA.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

None

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

Attachment 02.04.02-9A: BLN Hydrology Project GIS File Data

Attachment 02.04.02-9A  
TVA letter dated January 29, 2010  
January 29, 2010

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

Attachment 02.04.02-9A:      BLN Hydrology Project GIS File Data

(5 Pages including Cover Sheet)

Attachment 02.04.02-9A  
 TVA letter dated January 29, 2010  
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<b>TABLE 1A - Data on DVD-002A R1</b>		
<b>No.</b>	<b>Data Requested</b>	<b>File</b>
<b>FOLDER: Chickamauga – Data for Chickamauga Reservoir - Documented in Calculation CDQ000020080030</b>		
1	Original Bathymetric Point Data	Att_08-10_Original_Bathymetric_Point_Data
2	Processed Bathymetric Surface - TIN	Att_09-06_COE_linearized
3	Near-Shore Topographic Data - Raw DEM / DTM / DRG Data	1) CDQ000020080030_DTM1 2) CDQ000020080030_SHP1 3) CDQ000020080030_SHP2 4) Hamilton 2 ft_Original_Data.
4	Processed Near-Shore Topographic Data - Selected Contours	Chickamauga_Surface_Contours_05152009_gdb
5	Processed SOCH Cross-Section Locations - Line	Chickamauga_CrossSection_Locations_gdb_05222009_Rev1eek
6	Processed Surface Area Map	CDQ000020080030_Surface_Area_Map_05192009.pdf
<b>TABLE 1B - Data on DVD-002B R1</b>		
<b>FOLDER: Fort Loudoun – Data for Fort Loudoun Reservoir - Documented in Calculation CDQ000020080024</b>		
1	Original Bathymetric Point Data	USACE_Underwater_Elevations_11252008.gdb
2	Processed Bathymetric Surface - TIN	processed_bathymetric_tin
3	Near-Shore Topographic Data - Raw DEM / DTM / DRG Data	1) DRG_Original_Data 2) RAW_DEM_Data 3) DTM_Original_Data
4	Processed Near-Shore Topographic Data - Selected Contours	FtLoudoun_Selected_Contours_gdb_05262009
5	Processed SOCH Cross-Section Locations - Line	FtLoudoun_SOCH_CrossSection_Locations_gdb_05292009

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6	Processed Surface Area Map	Attachment_30CDQ000020080024_Surface_Area_Map1_05252009.pdf
7	Processed Surface Area Map	Attachment_30_CDQ000020080024_Surface_Area_Map2_06182009.pdf
8	Processed Surface Area Map	Attachment_30_CDQ000020080024_Surface_Area_Map3_06182009.pdf
<b>TABLE 1C - Data on DVD-002C R1</b>		
<b>FOLDER: Guntersville – Data for Guntersville Reservoir - Documented in Calculation CDQ000020080032</b>		
1	Original Bathymetric Point Data	1-OriginalBathymetricPointData
2	Processed Bathymetric Surface - TIN	2-ProcessedBathymetricSurface-TIN
3	Near-Shore Topographic Data - Raw DEM / DRG Data	3a-Near-ShoreTopographicData - Raw DEM 3b-Near-ShoreTopographicData - Raw DRG
4	Processed Near-Shore Topographic Data - Selected Contours	4-Guntersville_Surface_Contours_gdb_02192009_Rev0pjn
5	Processed SOCH Cross-Section Locations - Line	5-Processed SOCH Cross-Section Locations - Line
6	Processed Surface Area Map	6-Guntersville_Surface_Areas 6 GIE 311 E 200801 R1 D.pdf

Attachment 02.04.02-9A  
 TVA letter dated January 29, 2010  
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<b>TABLE 2A - Data on DVD-003A R1</b>		
<b>No.</b>	<b>Data Requested</b>	<b>File</b>
<b>FOLDER: Nickajack – Data for Nickajack Reservoir - Documented in Calculation CDQ000020080031</b>		
1	Original Bathymetric Point Data	USACE Underwater Elevations 11072008_Rev0b.gdb
2	Processed Bathymetric Surface - TIN	Att 15 09 Processed Bathymetric Surface
3	Near-Shore Topographic Data - Raw DEM / DTM / DRG Data	1) DTM_Original_Data 2) Hamilton 2 ft_Original_Data. 3) Hamilton 10ft_Original_Data
4	Processed Near-Shore Topographic Data - Selected Contours	Nickajack_Surface_Contours_05272009.gdb
5	Processed SOCH Cross-Section Locations - Line	Nickajack_CrossSections_Locations_05272009.gdb
6	Processed Surface Area Map	CDQ000020080031_Surface Area Map_07012009.pdf
<b>TABLE 2B - Data on DVD-003B R1</b>		
<b>FOLDER: Tellico – Data for Tellico Reservoir and Canal - Documented in Calculation CDQ000020080025</b>		
1	Original Bathymetric Point Data	USACE Underwater Elevation 11252008.gdb
2	Processed Bathymetric Surface - TIN	bathymetri tin
3	Near-Shore Topographic Data - Raw DEM / DTM / DRG Data	1) DRG_Original_Data 2) DTM_Original_Data 3) DTM_Original_Data_Additional_Files 4) RAW_DEM_Data
4	Processed Near-Shore Topographic Data - Selected Contours	Tellico_Surface_Contours_05282009_gdb
5	Processed SOCH Cross-Section Locations - Line	1) Tellico_SOCH_CrossSection_Locations_05282009.gdb 2) Canal_CrossSections_Rev0sch.gdb

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6	Processed Surface Area Map	Attachment 23_CDQ000020080025_Surface_Area_Map_06302009.pdf
<b>TABLE 2C - Data on DVD-003C R1</b>		
<b>FOLDER: Watts Bar – Data for Watts Bar Reservoir - Documented in Calculation CDQ000020080026</b>		
1	Original Bathymetric Point Data	WattsBar Original Bathymetric Point Data
2	Processed Bathymetric Surface - TIN	bathymetric TIN
3	Near-Shore Topographic Data - Raw DEM / DTM / DRG Data	1) County_DTM 2) Raw DEM DATA
4	Processed Near-Shore Topographic Data - Selected Contours	WattsBar Selected Contours gdb
5	Processed SOCH Cross-Section Locations - Line	SOCH_CrossSection_Locations gdb
6	Processed Surface Area Map	CDQ000020080026_SurfaceArea_Map_05212009.pdf