

February 15, 2008

Mr. Ashok S. Bhatnagar  
Senior Vice President  
Nuclear Generation Development and Construction  
Tennessee Valley Authority  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

SUBJECT: BELLEFONTE UNITS 3 AND 4 COMBINED LICENSE APPLICATION REVIEW  
SCHEDULE

Dear Mr. Bhatnagar:

This letter transmits the Bellefonte Units 3 and 4 Combined License (COL) application review schedule. The environmental review supports the issuance of a Final Environmental Impact Statement (FEIS) in January 2010. Milestones for the four phases of this review are provided in Table 1 of this letter. The safety review supports the issuance of a Final Safety Evaluation Report (FSER) in February 2011. Milestones for the six phases of this review are also provided in Table 1. The primary drivers and risks to this schedule are described below.

By letter dated October 30, 2007, as supplemented by letters dated November 2, 2007, January 8, 2008, and January 14, 2008, the Tennessee Valley Authority (TVA) submitted its application to the U.S. Nuclear Regulatory Commission (NRC) for a COL for two AP1000 advanced passive pressurized water reactors in accordance with the requirements contained in 10 CFR 52, "Licenses, Certifications and Approvals for Nuclear Power Plants." The staff informed you in a January 18, 2008, letter that we had completed our acceptance review and docketed your application.

The staff discussed in the January 18, 2008, letter three areas that introduced uncertainty into the review schedule. These areas are: 1) incomplete recirculation screen design in the referenced design, 2) the seismic source characterization of the region (seismology) and 3) the numerical model used to determine the design basis flood at the site (hydrology). These areas were discussed with you in a January 31, 2008, public meeting. The incomplete recirculation screen design is being addressed in the AP1000 design certification amendment (DCA) review.

#### Highlights of the Safety Review Schedule

The staff has identified near term milestones associated with the seismology and hydrology reviews. For the seismology review, the staff expects to issue an overarching Request for Additional Information (RAI) that will be based on the seismology issue described in the January 18, 2008, acceptance letter. The staff expects to issue this RAI by February 19, 2008. Based on TVA's response to this RAI, the staff will consider whether adjustments need to be made to the Chapter 2 safety evaluation report (SER) section 2.5 review schedule.

Regarding the hydrology review, the staff has also identified near term milestones including an inspection of the hydrology code in February 2008, a site visit in April 2008, review of a white paper to be provided by TVA in April 2008, and a model workshop to be provided by TVA in

May 2008. TVA described the purpose of the white paper in the January 31, 2008, public meeting, as a paper that would describe the history of TVA's development of the simulated open channel hydraulics (SOCH) code used in the determination of the probable maximum flood height. Based on these early interactions with TVA, the staff will consider whether adjustments need to be made to the Chapter 2 SER hydrology review schedule.

Our intent is to establish a predictable schedule that identifies and resolves complex issues as early in the review process as possible. This is why early and substantial interactions with TVA in Phase 1 of the safety review regarding seismology and hydrology have been modeled. The staff believes that attempting to resolve these issues as soon as possible is the most effective and efficient use of both NRC and applicant resources. The review schedule established for Chapter 2 is highly uncertain because of the issues identified above. Additionally, the sections of Chapter 2 associated with hydrology and seismology are on the critical path for the review. Therefore, adherence to the schedule contained herein depends on a complete and timely response to the initial, overarching RAI discussed above for seismology, as well as a successful outcome of the various interactions planned and discussed above for hydrology.

The review of the AP1000 DCA will proceed in accordance with the review schedule provided to Westinghouse in a separate letter dated February 15, 2008. The Bellefonte COL application incorporates by reference both Appendix D to 10 CFR 52 and the AP1000 Design Control Document submitted by Westinghouse as Revision 16. Thus, a substantial portion of the Bellefonte COL review schedule is dependent on the AP1000 DCA review schedule. Schedule dependencies have been established between the two reviews to model this aspect. We want to bring to your attention the review schedule issued on February 15, 2008 for the AP1000 DCA. The SER with open items for chapters 6, 15, and 16 are scheduled to be completed for both the DCA and your application on essentially the same date. Therefore, any delay in the Westinghouse DCA schedule will also delay the Bellefonte schedule.

#### Highlights of both the Environmental and Safety Reviews

Our review schedules assume that responses to RAIs will be complete and provide sufficient information to address the staff's concerns. We assumed in our schedules that RAI responses will be submitted within 30 days of receipt of RAIs related to areas that involve Bellefonte specific information and within 45 days of receipt of RAIs related to areas that involve standard content for all AP1000 COL applications.

The schedule does not currently model the hearing process. Should contentions be admitted, the review schedules in Table 1 may be impacted. Also, the mandatory hearing schedule will be developed by the Commission and the Atomic Safety and Licensing Board and thus is not included in Table 1 of this letter. Both the FEIS and the FSER will be used to support this hearing. As you know, the Commission will not make a determination on whether or not to issue the COL until this hearing is concluded.

The staff will review and re-baseline, if necessary, the Bellefonte safety review schedule around the time the SER with open items is issued. At this point, the staff will have a better idea of what target milestones are achievable given the number and complexity of the open items. Similarly, the staff will review and re-baseline, if necessary, the Bellefonte environmental review schedule soon after the public comment period ends. At this point, the staff will have a better idea if there are any issues that have been identified that could impact the schedule for the

issuance of the FEIS. Of course, should any major revisions to the AP1000 DCA or to the Bellefonte RCOL occur, we will review and re-baseline schedules in response to those revisions, as necessary. At any time, feel free to discuss concerns with this schedule or any future proposed schedule with the staff.

Table 1: COL Review Schedule

<u>Phase of Safety Review</u>	<u>Target Completion Date</u>
P1 RAIs for all SER chapters other than Chapter 2	August 29, 2008
P1 Chapter 2 RAIs	December 18, 2008
P2 SER with open items (OIs) for all chapters other than Chapter 2	April 24, 2009
P2 Chapter 2 SER with OIs	August 24, 2009
P3 Advisory Committee on Reactor Safeguards (ACRS) review of SER with OIs other than Chapter 2	September 2009
P3 ACRS review of Chapter 2 SER with OIs	January 2010
P4 Advanced SER with no OIs	August 31, 2010
P5 ACRS review of Advanced SER with no OIs	December 2010
P6 Final SER issued	February 17, 2011
<u>Phase of Environmental Review</u>	<u>Target Completion Date</u>
P1 Scoping	August 19, 2008
P2 Draft Environmental Impact Statement (DEIS)	March 6, 2009
P3 Draft Environmental Impact Statement Comment Period	August 10, 2009
P4 Final Environmental Impact Statement (FEIS)	January 28, 2010

A. Bhatnagar

- 4 -

Should you have any questions regarding the safety review, please contact Joseph Sebrosky, the lead project manager for the safety review for the Bellefonte COL application, at (301) 415-1132 or [jms3@nrc.gov](mailto:jms3@nrc.gov). If you have questions regarding the environmental review please contact Mallecia Hood, the lead project manager for the environmental review of the Bellefonte COLA, at (301) 415-0673 or email at [mah2@nrc.gov](mailto:mah2@nrc.gov).

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

cc w/encl: See next page

A. Bhatnagar

- 4 -

Should you have any questions regarding the safety review, please contact Joseph Sebrosky, the lead project manager for the safety review for the Bellefonte COL application, at (301) 415-1132 or [jms3@nrc.gov](mailto:jms3@nrc.gov). If you have questions regarding the environmental review please contact Mallecia Hood, the lead project manager for the environmental review of the Bellefonte COLA, at (301) 415-0673 or email at [mah2@nrc.gov](mailto:mah2@nrc.gov).

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

cc w/encl: See next page

Distribution:

Public	RidsNroLAKGoldstein	
RidsNroDnrlNwe1	MLoftus, OGC	JStarefos
RidsNroDnrlNwe2	MLesser, Rgn2	BAnderson
RidsNroOd	RidsAcrsAcnwMailCenter	JSebrosky
RidsRgn2MailCenter	RidsNroDser	TSimms
RidsNroDnrl	SBurnell, OPA	MHood
RidsNrrOd	RidsOgcMailCenter	RSchaaf
AHodgdon, OGC		

Accession No.: ML080430572

\*see previous concurrence

<b>OFFICE</b>	LA:DNRL/NWE1:	PM:DNRL/NWE1	BC:DNRL/NWE1	PM:DSEER/RAP1	BC:DSEER/RAP1
<b>NAME</b>	KGoldstein*	JSebrosky	SCoffin*	MHood*	WBurton*
<b>DATE</b>	02/13/08	02/15/08	02/13/08	02/14/08	02/14/08
<b>OFFICE</b>	BC:DSEER/RGS1	BC:DSEER/RHEB	OGC		
<b>NAME</b>	RKaras*	MThaggard*	AHodgdon*		
<b>DATE</b>	02/14/08	02/14/08	02/14/08		

**OFFICIAL RECORD COPY**

COL Bellefonte Mailing List

(Revised 2/11/08)

cc:

Ms. Michele Boyd  
Legislative Director  
Energy Program  
Public Citizens Critical Mass Energy  
and Environmental Program  
215 Pennsylvania Avenue, SE  
Washington, DC 20003

W. Craig Conklin, Director  
Chemical and Nuclear Preparedness &  
Protection Division (CNPPD)  
Office of Infrastructure Protection  
Department of Homeland Security  
Washington, DC 20528

Mr. Marvin Fertel  
Senior Vice President  
and Chief Nuclear Officer  
Nuclear Energy Institute  
1776 I Street, NW  
Suite 400  
Washington, DC 20006-3708

Mr. Ronald Kinney  
South Carolina DHEC  
2600 Bull Street  
Columbia, SC 29201

Vanessa E. Quinn, Acting Director  
Technological Hazards Division  
National Preparedness Directorate  
Federal Emergency Management Agency  
500 C Street, NW  
Washington, DC 20472

Email

APAGLIA@Scana.com (Al Paglia)  
APH@NEI.org (Adrian Heymer)  
awc@nei.org (Anne W. Cottingham)  
bennettS2@bv.com (Steve A. Bennett)  
BrinkmCB@westinghouse.com (Charles Brinkman)  
chris.maslak@ge.com (Chris Maslak)  
cristina.lonescu@pgnmail.com (Christina Ionescu)  
CumminWE@Westinghouse.com (Edward W. Cummins)  
cwaltman@roe.com (C. Waltman)  
david.lewis@pillsburylaw.com (David Lewis)  
dlochbaum@UCSUSA.org (David Lochbaum)  
frankq@hursttech.com (Frank Quinn)  
garry.miller@pgnmail.com (Garry D. Miller)  
GovePA@BV.com (Patrick Gove)  
greshaja@westinghouse.com (James Gresham)  
gwcurtis2@tva.gov (G. W. Curtis)  
gzinke@entergy.com (George Alan Zinke)  
jgutierrez@morganlewis.com (Jay M. Gutierrez)  
jim.riccio@wdc.greenpeace.org (James Riccio)  
JJNesrsta@cpsenergy.com (James J. Nesrsta)  
john.o'neil@pillsburylaw.com (John O'Neil)  
Joseph.savage@ge.com (Joseph Savage)  
Joseph\_Hegner@dom.com (Joseph Hegner)  
KSutton@morganlewis.com (Kathryn M. Sutton)  
kwaugh@impact-net.org (Kenneth O. Waugh)  
MaddenG@BV.com (George Madden)  
Margaret.Bennet@dom.com (Margaret Bennet)  
maria.webb@pillsburylaw.com (Maria Webb)  
mark.beaumont@wsms.com (Mark Beaumont)  
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)  
media@nei.org (Scott Peterson)  
mgiles@entergy.com (M. Giles)  
mike\_moran@fpl.com (Mike Moran)  
nirsnet@nirs.org (Michael Mariotte)  
patriciaL.campbell@ge.com (Patricia L. Campbell)  
paul.gaukler@pillsburylaw.com (Paul Gaukler)  
Paul@beyondnuclear.org (Paul Gunter)  
phinnen@entergy.com (Paul Hinnenkamp)  
pmray@tva.gov (Phil Ray)  
pshastings@duke-energy.com (Peter Hastings)  
rclary@scana.com (Ronald Clary)  
rgrumbir@charter.net (Richard Grumbir)  
RJB@NEI.org (Russell Bell)  
RKTemple@cpsenergy.com (R.K. Temple)  
roberta.swain@ge.com (Roberta Swain)  
ronald.hagen@eia.doe.gov (Ronald Hagen)

sandra.sloan@areva.com (Sandra Sloan)  
SauerB@BV.com (Robert C. Sauer)  
sfrantz@morganlewis.com (Stephen P. Frantz)  
tom.miller@hq.doe.gov (Tom Miller)  
VictorB@bv.com (Bill Victor)  
waraksre@westinghouse.com (Rosemarie E. Waraks)  
lgorenflo@gmail.com (L. Gorenflo)