

## PMBelCOL NPEmails

---

**From:** Simms, Tanya  
**Sent:** Monday, November 02, 2009 1:48 PM  
**To:** 'tespink@tva.gov'; 'alsterdis@tva.gov'; 'wasparkm@southernco.com'; 'agaughtm@southernco.com'  
**Cc:** McGovern, Denise; BelCol Resource; VogtleCOL Resource; Martin, Jody; Hodgdon, Ann; Wade, Tony; Coffin, Stephanie; Sebrosky, Joseph; Joshi, Ravindra; Comar, Manny; Anderson, Brian; Hughes, Brian; Patel, Chandu; Habib, Donald; 'bobhirman@live.com'; 'erg-xl@cox.net'; 'richard.grumbir@excelservices.com'; Haggerty, Sharon; Goetz, Sujata; Jackson, Terry; Truong, Tung  
**Subject:** Bellefonte Chapter 7 SER with Open Items  
**Attachments:** BLN SER 7 Cover Letter.pdf; BLN SER 7 CLEAN 08-17-09.pdf

To all,

Attached is Chapter 7 of the Bellefonte SER with open items and the transmittal cover letter. Please note that we are conservatively marking each page of the SER as proprietary until either: (1) 10 days have passed and we have not heard from TVA regarding a proprietary claim, or (2) TVA informs us that there is no proprietary information in the document. Once it is clear that there is no proprietary information in the Chapter, the proprietary markings will be removed and the rest of the distribution for the document will be completed.

Sincerely,

Tanya Simms  
Project Manager  
New Reactor Licensing  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, Maryland 20852-2738  
301-415-1387  
[Tanya.Simms@nrc.gov](mailto:Tanya.Simms@nrc.gov)

**Hearing Identifier:** Bellefonte\_COL\_NonPublic\_EX  
**Email Number:** 3766

**Mail Envelope Properties** (192BB59294514E41B5305C3C82867608021B43848F)

**Subject:** Bellefonte Chapter 7 SER with Open Items  
**Sent Date:** 11/2/2009 1:48:26 PM  
**Received Date:** 11/2/2009 1:48:41 PM  
**From:** Simms, Tanya

**Created By:** Tanya.Simms@nrc.gov

**Recipients:**

"McGovern, Denise" <Denise.McGovern@nrc.gov>  
Tracking Status: None  
"BelCol Resource" <BelCol.Resource@nrc.gov>  
Tracking Status: None  
"VogtleCOL Resource" <VogtleCOL.Resource@nrc.gov>  
Tracking Status: None  
"Martin, Jody" <Jody.Martin@nrc.gov>  
Tracking Status: None  
"Hodgdon, Ann" <Ann.Hodgdon@nrc.gov>  
Tracking Status: None  
"Wade, Tony" <Tony.Wade@nrc.gov>  
Tracking Status: None  
"Coffin, Stephanie" <Stephanie.Coffin@nrc.gov>  
Tracking Status: None  
"Sebrosky, Joseph" <Joseph.Sebrosky@nrc.gov>  
Tracking Status: None  
"Joshi, Ravindra" <Ravindra.Joshi@nrc.gov>  
Tracking Status: None  
"Comar, Manny" <Manny.Comar@nrc.gov>  
Tracking Status: None  
"Anderson, Brian" <Brian.Anderson@nrc.gov>  
Tracking Status: None  
"Hughes, Brian" <Brian.Hughes@nrc.gov>  
Tracking Status: None  
"Patel, Chandu" <Chandu.Patel@nrc.gov>  
Tracking Status: None  
"Habib, Donald" <Donald.Habib@nrc.gov>  
Tracking Status: None  
"bobhirman@live.com" <bobhirman@live.com>  
Tracking Status: None  
"erg-xl@cox.net" <erg-xl@cox.net>  
Tracking Status: None  
"richard.grumbir@excelservices.com" <richard.grumbir@excelservices.com>  
Tracking Status: None  
"Haggerty, Sharon" <Sharon.Haggerty@nrc.gov>  
Tracking Status: None  
"Goetz, Sujata" <Sujata.Goetz@nrc.gov>  
Tracking Status: None  
"Jackson, Terry" <Terry.Jackson@nrc.gov>  
Tracking Status: None  
"Truong, Tung" <Tung.Truong@nrc.gov>

Tracking Status: None  
"tespink@tva.gov" <tespink@tva.gov>  
Tracking Status: None  
"alsterdis@tva.gov" <alsterdis@tva.gov>  
Tracking Status: None  
"wasparkm@southernco.com" <wasparkm@southernco.com>  
Tracking Status: None  
"agaughtm@southernco.com" <agaughtm@southernco.com>  
Tracking Status: None

**Post Office:** HQCLSTR02.nrc.gov

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	830	11/2/2009 1:48:41 PM
BLN SER 7 Cover Letter.pdf	34186	
BLN SER 7 CLEAN 08-17-09.pdf	31601	

**Options**

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

[REDACTED]

November 02, 2009

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

Mr. Joseph A. (Buzz) Miller  
Executive Vice President  
Nuclear Development  
Southern Nuclear Operating Company  
P. O. Box 1295  
Birmingham, AL 35201

SUBJECT: BELLEFONTE UNITS 3 AND 4 SAFETY EVALUATION REPORT WITH OPEN  
ITEMS FOR CHAPTER 7, "INSTRUMENTATION AND CONTROLS"

Dear Ms. Sterdis and Mr. Miller:

By letter dated October 30, 2007 (ML073110527), as supplemented by letters dated November 2, 2007 (ML073090428), January 8, 2008 (ML080100104), and January 14, 2008 (ML080160252), the Tennessee Valley Authority (TVA) submitted its application to the U.S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advanced passive pressurized water reactors in accordance with the requirements of 10 CFR 52, "Licenses, Certifications and Approvals for Nuclear Power Plants." The NRC formally docketed the application on January 18, 2008. These reactors are identified as Bellefonte (BLN) Units 3 and 4 and would be located near the town of Scottsboro in Jackson County, Alabama. The docket numbers established for Units 3 and 4 are 52-014 and 52-015, respectively. Subsequent to the original BLN COL application, TVA has updated and revised the application by letters dated October 10, 2008 (ML083100262), November 18, 2008 (ML083250490), and January 21, 2009 (ML090290406).

Based on our review of your application, the staff prepared the enclosed Safety Evaluation Report (SER) with Open Items for Chapter 7, "Instrumentation and Controls." Unless otherwise stated in the SER with Open Items, the staff's review was based on revisions and updates made to the BLN COL application through January 21, 2009. Issuance of this SER is an important milestone in the staff's review to determine whether TVA's application meets the Commission's regulations.

Enclosure(s) transmitted  
herewith contain(s) SUNSI.  
When separated from  
enclosure(s), this transmittal  
document is decontrolled.

[REDACTED]

In a letter dated April 28, 2009, the NuStart Energy Development, LLC, consortium informed the NRC that it had changed the Reference COL designation for the AP1000 Design Center from BLN Nuclear Plant, Units 3 and 4 to the Vogtle Electric Generating Plant (VEGP), Units 3 and 4. The NRC staff is taking steps necessary to implement this change. It is the staff's understanding that Southern Nuclear Operating Company will be responsible for responding to open items related to standard content within a 45-day response period.

The staff concludes that the enclosed SER with Open Items does not contain any information for which exemption from public disclosure has been sought or approved. However, the NRC will withhold the enclosed SER from public disclosure for ten calendar days from the date of this letter to allow TVA the opportunity to verify the staff's conclusion that the SER contains no such exempt information. If within that time, you do not request that all or portions of the SER be withheld from public disclosure in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," the enclosure will be made available for public inspection through the NRC's Public Document Room and the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the Public Electronic Reading Room section of the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions, please contact Ms. Tanya Simms, the NRC project manager at (301) 415-1387, [tanya.simms@nrc.gov](mailto:tanya.simms@nrc.gov) or Mr. Joseph Sebrosky, the lead project manager for the BLN COL application at (301) 415-1132, [joseph.sebrosky@nrc.gov](mailto:joseph.sebrosky@nrc.gov).

Sincerely,

/RA/

Stephanie Coffin, Branch Chief  
AP1000 Projects Branch 1 (NWE1)  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-014  
52-015  
52-025  
52-026

Enclosure:  
As stated

cc w/ encl: see next page

In a letter dated April 28, 2009, the NuStart Energy Development, LLC, consortium informed the NRC that it had changed the Reference COL designation for the AP1000 Design Center from BLN Nuclear Plant, Units 3 and 4 to the Vogtle Electric Generating Plant (VEGP), Units 3 and 4. The NRC staff is taking steps necessary to implement this change. It is the staff's understanding that Southern Nuclear Operating Company will be responsible for responding to open items related to standard content within a 45-day response period.

The staff concludes that the enclosed SER with Open Items does not contain any information for which exemption from public disclosure has been sought or approved. However, the NRC will withhold the enclosed SER from public disclosure for ten calendar days from the date of this letter to allow TVA the opportunity to verify the staff's conclusion that the SER contains no such exempt information. If within that time, you do not request that all or portions of the SER be withheld from public disclosure in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," the enclosure will be made available for public inspection through the NRC's Public Document Room and the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the Public Electronic Reading Room section of the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions, please contact Ms. Tanya Simms, the NRC project manager at (301) 415-1387, [tanya.simms@nrc.gov](mailto:tanya.simms@nrc.gov) or Mr. Joseph Sebrosky, the lead project manager for the BLN COL application at (301) 415-1132, [joseph.sebrosky@nrc.gov](mailto:joseph.sebrosky@nrc.gov).

Sincerely,

/RA/

Stephanie Coffin, Branch Chief  
AP1000 Projects Branch 1 (NWE1)  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-014  
52-015  
52-025  
52-026

Enclosure:  
As stated

cc w/ encl: see next page

PKG: ML091610586

SER: ML083390149

ACRS Memo: ML091610589

Cover Letter Accession No.: ML091610593

OFFICE	LA:DNRL/NWE1:	PM:DNRL/NWE1	OGC	BC:DNRL/NWE1
NAME	KGoldstein	TSimms	AHodgdon	SCoffin
DATE	09/16/09	09/16/09	9/25/09	11/02/09

OFFICIAL RECORD COPY

Distribution:

Public

RidsNroDnrlNwe1

RidsNroDnrlNwe2

RidsNroOd

RidsRgn2MailCenter

RidsNroDsra

RidsNroDnrl

RidsNrrOd

JMartin, OGC

AFetter

DMcGovern

RidsNroLAKGoldstein

AHodgdon, OGC

MLesser, Rgn2

RidsAcrsAcnwMailCenter

RidsNroDser

RidsNroDcip

SBurnell, OPA

RidsOgcMailCenter

GHatchett

TTruong

CPatel

BAnderson

MComar

SGoetz

BHughes

RJoshi

DHabib

JSebrosky

TSimms

SHaggerty

TJackson

COL - Bellefonte Mailing List  
cc:

(Revised 10/14/2009)

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

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



## COL - Bellefonte Mailing List

### Email

alsterdis@tva.gov (Andrea Sterdis)  
APAGLIA@Scana.com (Al Paglia)  
APH@NEI.org (Adrian Heymer)  
awc@nei.org (Anne W. Cottingham)  
BrinkmCB@westinghouse.com (Charles Brinkman)  
cberger@energetics.com (Carl Berger)  
chris.maslak@ge.com (Chris Maslak)  
CumminWE@Westinghouse.com (Edward W. Cummins)  
cwaltman@roe.com (C. Waltman)  
david.lewis@pillsburylaw.com (David Lewis)  
eddie.grant@excelservices.com (Eddie Grant)  
ejvigluicci@tva.gov (Edward Vigluicci)  
garry.miller@pgnmail.com (Garry D. Miller)  
GovePA@BV.com (Patrick Gove)  
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'Neill@pillsburylaw.com (John O'Neill)  
Joseph\_Hegner@dom.com (Joseph Hegner)  
KSutton@morganlewis.com (Kathryn M. Sutton)  
kwaugh@impact-net.org (Kenneth O. Waugh)  
lchandler@morganlewis.com (Lawrence J. Chandler)  
lgorenflo@gmail.com (L. Gorenflo)  
Marc.Brooks@dhs.gov (Marc Brooks)  
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)  
MSF@nei.org (Marvin Fertel)  
nirsnet@nirs.org (Michael Mariotte)  
patriciaL.campbell@ge.com (Patricia L. Campbell)  
paul.gaukler@pillsburylaw.com (Paul Gaukler)  
Paul@beyondnuclear.org (Paul Gunter)  
pmray@tva.gov (Phil Ray)  
pshastings@duke-energy.com (Peter Hastings)  
rclary@scana.com (Ronald Clary)  
rgrumbir@gmail.com (Richard Grumbir)  
RJB@NEI.org (Russell Bell)  
RKTemple@cpsenergy.com (R.K. Temple)  
sabinski@suddenlink.net (Steve A. Bennett)

COL - Bellefonte Mailing List

sandra.sloan@areva.com (Sandra Sloan)  
SauerB@BV.com (Robert C. Sauer)  
sfrantz@morganlewis.com (Stephen P. Frantz)  
stephan.moen@ge.com (Stephan Moen)  
tdurkin@energetics.com (Tim Durkin)  
timothy.beville@nuclear.energy.gov (Timothy Beville)  
tom.miller@hq.doe.gov (Tom Miller)  
Vanessa.quinn@dhs.gov (Vanessa Quinn)  
VictorB@bv.com (Bill Victor)  
Wanda.K.Marshall@dom.com (Wanda K. Marshall)

COL - Vogtle Mailing List

(Revised 10/01/2009)

cc:

Attorney General  
Law Department  
132 Judicial Building  
Atlanta, GA 30334

Mr. Laurence Bergen  
Oglethorpe Power Corporation  
2100 East Exchange Place  
P.O. Box 1349  
Tucker, GA 30085-1349

Mr. M. Stanford Blanton  
Esquire  
Balch and Bingham, LLP  
P.O. Box 306  
Birmingham, AL 35201

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

County Commissioner  
Office of the County Commissioner  
Burke County Commission  
Waynesboro, GA 30830

Mr. James Davis  
ESP Project Engineer  
Southern Nuclear Company  
PO Box 1295, BIN B056  
Birmingham, AL 35201

Director  
Consumer's Utility  
Counsel Division  
Governor's Office of Consumer Affairs  
2 Martin Luther King, Jr. Drive  
Plaza Level East, Suite 356  
Atlanta, GA 30334-4600

Mr. Arthur H. Domby, Esquire  
Troutman Sanders  
Nations Bank Plaza  
600 Peachtree Street, NE  
Suite 200  
Atlanta, GA 30308-2216

Mr. Jeffrey T. Gasser  
Executive Vice President  
Southern Nuclear Operating Company, Inc.  
P.O. Box 1295  
Birmingham, AL 35201-1295

O. C. Harper, IV  
Vice President - Resources Planning and  
Nuclear Development  
Georgia Power Company  
241 Ralph McGill Boulevard  
Atlanta, GA 30308

Mr. Steven M. Jackson  
Senior Engineer - Power Supply  
Municipal Electric Authority of Georgia  
1470 Riveredge Parkway, NW  
Atlanta, GA 30328-4684

David H. Jones  
Site Vice President  
Plant Vogtle - ATTN: Units 3 & 4  
7825 River Road  
Waynesboro, GA 30830

Mr. Reece McAlister  
Executive Secretary  
Georgia Public Service Commission  
Atlanta, GA 30334

Mr. Thomas O. McCallum  
Site Development Project Engineer  
Southern Nuclear Operating Co., Inc.  
PO Box 1295  
Birmingham, AL 35201-1295

COL - Vogtle Mailing List

Mr. James H. Miller  
President & Chief Executive Officer  
Southern Nuclear Operating Company, Inc.  
P.O. Box 1295  
Birmingham, AL 35201

Mr. Wesley A. Sparkman  
COL Project Engineer  
Southern Nuclear Operating Co., Inc.  
P.O. Box 1295  
Birmingham, AL 35201-1295

Mr. Joseph (Buzz) Miller  
Executive Vice President  
Nuclear Development  
P.O. Box 1295  
Birmingham, AL 35201-1295

Gene Stilp  
1550 Fishing Creek Valley Road  
Harrisburg, PA 17112

Mr. Thomas Moorer  
Environmental Project Manager  
Southern Nuclear Operating Co., Inc.  
PO Box 1295  
Birmingham, AL 35201-1295

Mr. Robert E. Sweeney  
IBEX ESI  
4641 Montgomery Avenue  
Suite 350  
Bethesda, MD 20814

Mr. Charles R. Pierce  
Vogtle Deployment Licensing Manager  
Southern Nuclear Operating Co., Inc.  
PO Box 1295  
Birmingham, AL 35201-1295

Resident Inspector  
Vogtle Plant  
8805 River Road  
Waynesboro, GA 30830

Resident Manager  
Oglethorpe Power Corporation  
Alvin W. Vogtle Nuclear Plant  
7821 River Road  
Waynesboro, GA 30830

Mr. Jerry Smith  
Commissioner  
District 8  
Augusta-Richmond County Commission  
1332 Brown Road  
Hephzibah, GA 30815

## COL - Vogtle Mailing List

### Email

APH@NEI.org (Adrian Heymer)  
awc@nei.org (Anne W. Cottingham)  
BrinkmCB@westinghouse.com (Charles Brinkman)  
chris.maslak@ge.com (Chris Maslak)  
crpierce@southernco.com (C.R. Pierce)  
cwaltman@roe.com (C. Waltman)  
david.hinds@ge.com (David Hinds)  
david.lewis@pillsburylaw.com (David Lewis)  
erg-xl@cox.net (Eddie R. Grant)  
james.beard@gene.ge.com (James Beard)  
jgutierrez@morganlewis.com (Jay M. Gutierrez)  
jim.riccio@wdc.greenpeace.org (James Riccio)  
jim@ncwarn.org (Jim Warren)  
JJNesrsta@cpsenergy.com (James J. Nesrsta)  
John.O'Neill@pillsburylaw.com (John O'Neill)  
Joseph\_Hegner@dom.com (Joseph Hegner)  
KSutton@morganlewis.com (Kathryn M. Sutton)  
kwaugh@impact-net.org (Kenneth O. Waugh)  
lchandler@morganlewis.com (Lawrence J. Chandler)  
Marc.Brooks@dhs.gov (Marc Brooks)  
maria.webb@pillsburylaw.com (Maria Webb)  
mark.beaumont@wsms.com (Mark Beaumont)  
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)  
mcaston@southernco.com (Moanica Caston)  
media@nei.org (Scott Peterson)  
mike\_moran@fpl.com (Mike Moran)  
MSF@nei.org (Marvin Fertel)  
nirsnet@nirs.org (Michael Mariotte)  
patriciaL.campbell@ge.com (Patricia L. Campbell)  
paul.gaukler@pillsburylaw.com (Paul Gaukler)  
Paul@beyondnuclear.org (Paul Gunter)  
pshastings@duke-energy.com (Peter Hastings)  
RJB@NEI.org (Russell Bell)  
RKTemple@cpsenergy.com (R.K. Temple)  
sabinski@suddenlink.net (Steve A. Bennett)  
sandra.sloan@areva.com (Sandra Sloan)  
sfrantz@morganlewis.com (Stephen P. Frantz)  
stephan.moen@ge.com (Stephan Moen)  
steven.hucik@ge.com (Steven Hucik)  
tomccall@southernco.com (Tom McCallum)  
Vanessa.quinn@dhs.gov (Vanessa Quinn)  
VictorB@bv.com (Bill Victor)  
Wanda.K.Marshall@dom.com (Wanda K. Marshall)  
whelmore@aol.com (Bill Elmore)

## 7.0 INSTRUMENTATION AND CONTROLS

Nuclear power plant instrumentation senses various plant parameters and transmits appropriate signals to the control systems during normal operation and to the reactor trip and engineered safety feature systems during abnormal and accident conditions. The information provided in this chapter emphasizes those instruments and associated equipment that constitute the protection and safety systems.

### 7.1 Introduction

Section 7.1 of the Bellefonte (BLN) combined license (COL) Final Safety Analysis Report (FSAR), Revision 1, incorporates by reference, with no departures or supplements, Section 7.1, "Introduction," of Revision 17 of the AP1000 Design Certification Document (DCD). The Nuclear Regulatory Commission (NRC) staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this subsection.

The Westinghouse application to amend Appendix D to Title 10 of the *Code of Federal Regulations* (CFR), 10 CFR Part 52 includes changes to Section 7.1 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the introduction incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.1 of this safety evaluation report (SER) to reflect the final disposition of the design certification (DC) application.

### 7.2 Reactor Trip

Section 7.2 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.2, "Reactor Trip," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.2 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the reactor trip system incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The amendment supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.2 of this SER to reflect the final disposition of the DC amendment application.

---

<sup>1</sup> See Section 1.2.2 for a discussion of the staff's review related to verification of the scope of information to be included within a COL application that references a DC.

### **7.3 Engineered Safety Features**

Section 7.3 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.3, "Engineered Safety Features," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.3 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the engineered safety features incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.3 of this SER to reflect the final disposition of the DC amendment application.

In RAI 1-4 the staff questioned how the COL applicant will verify that the as-built Instrumentation and Controls (I&C) system configuration conforms with schematics. In its response to RAI 1-4, TVA indicated that they or a designee will verify I&C cabinets as-built against the design drawings during manufacturing and will functionally test each system. In addition, TVA's response indicated that the I&C cabinets would be tested during preoperational testing and in accordance with several ITAAC related to the I&C system. The staff notes that vendor qualification testing, which may be done offsite, and preoperational testing fall under TVA's quality assurance program. In accordance with TVA's program any anomalies found during the testing or any problems identified from the time the testing is complete until the components are installed at the site would be identified and corrected in accordance with TVA's quality assurance program. The staff finds the verification of the as-built I&C system configuration against schematics using a combination of vendor testing, which will fall under TVA's quality assurance program, and on-site testing to be acceptable. In addition, the staff believes that adequate program controls exist to ensure that once the testing is complete, it will be maintained as valid throughout the life of the plant. Based on the above, the staff finds TVA's response to RAI 1-4 acceptable.

### **7.4 Systems Required for Safe Shutdown**

Section 7.4 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.4, "Systems Required for Safe Shutdown," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.4 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the systems required for safe shutdown incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.4 of this SER to reflect the final disposition of the DC amendment application.

## **7.5 Safety-Related Display Information (Related to RG 1.206, Section C.III.1, Chapter 7, C.1.7.5, "Information Systems Important to Safety")**

### **7.5.1 Introduction**

Safety-related display information includes equipment that processes safety-related information and displays it for use by the operator to monitor and maintain the safety of the AP1000 throughout operating conditions that include anticipated operational occurrences and accident and post-accident conditions.

### **7.5.2 Summary of Application**

Section 7.5 of the BLN COL FSAR, Revision 1, incorporates by reference Section 7.5 of the AP1000 DCD, Revision 17.

In addition, in BLN COL FSAR Section 7.5 the applicant provided the following:

#### **Supplemental Information**

- BLN SUP 7.5-1

The applicant provided supplemental (SUP) information in BLN COL FSAR Section 7.5, "Safety-Related Display Information," describing the FSAR Table 7.5-201 supplement to the DCD Table 7.5-1 and provides variable data shown in the DCD Table as "site specific."

### **7.5.3 Regulatory Basis**

The regulatory basis of the information incorporated by reference is addressed in the "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," (FSER) related to the DCD, (NUREG-1793).

In addition, the relevant requirements of the Commission regulations for the information systems important to safety, and the associated acceptance criteria, are given in Section 7.5 of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP).

The applicable regulatory requirements, guidelines, and related acceptance criteria for the supplemental information items are as follows:

- Criterion 13, "Instrumentation and Control," and Criterion 64, "Monitoring Radioactivity Releases," of Appendix A to 10 CFR Part 50 require, in part, that instrumentation be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to ensure adequate safety. Monitoring should include checking the plant environs for radioactivity that may be released from postulated accidents.
- The site-specific information that applicants are to address in Section 7.5 of their FSARs are specifically instruments for measuring boundary environs radiation and meteorological parameters.



#### 7.5.4 Technical Evaluation

The NRC staff reviewed Section 7.5 of the BLN COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic.<sup>1</sup> Section 7.5 of the AP1000 DCD is being reviewed by the staff under Docket Number 52-006. The NRC staff's technical evaluation of the information incorporated by reference related to information systems important to safety will be documented in the staff SER on the DC amendment application for the AP1000 design.

The staff reviewed the information in the BLN COL FSAR:

##### Supplemental Information

- BLN SUP 7.5-1

The AP1000 DC FSAR references and commits to Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Revision 3, as the method of complying with the above regulations. Specifically, RG 1.97 states that the variable and range information should be provided for environs radiation and radioactivity, and meteorological instrumentation.

The staff issued RAI 7.5-1 requesting information on boundary environs radiation and meteorological instrumentation. The AP1000 DCD states that this is site-specific information. TVA responded to RAI 7.5-1 with sufficient meteorological range and accuracy information for wind direction and wind speed. For differential temperature, the applicant did not provide range and accuracy information in conformance with the guidance of RG 1.97. For radiation monitoring instrumentation, the applicant stated a commitment to RG 1.97 but did not provide the range of boundary environs radiation instruments. The staff finds that the range of the boundary environs radiation instruments is necessary to ensure that the instruments are adequate for monitoring radioactivity that may be released from a postulated accident. TVA provided supplemental responses to RAI 7.5-1 with sufficient range information for boundary environs radiation instruments and sufficient range and accuracy information for the differential temperature in conformance with the guidance of RG 1.97. The staff will verify that the next update of the BLN COL FSAR adequately incorporates instrumentation information. This is **Confirmatory Item 7.5-1**.

#### 7.5.5 Post Combined License Activities

There are no post-COL activities related to this section.

#### 7.5.6 Conclusion

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.5 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information incorporated by reference in the BLN COL FSAR will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 8.1 of this SER to reflect the final disposition of the DC amendment application.

In addition, the staff has compared the application to the relevant NRC regulations and other NRC regulatory guides. The applicant has satisfactorily addressed RAI 7.5-1, as discussed above. Pending resolution of Confirmatory Item 7.5-1, the staff concludes that the safety-related display information is acceptable in accordance with the requirements of 10 CFR Part 50, Appendix A, Criteria 13 and 64.

## **7.6 Interlock Systems Important to Safety**

Section 7.6 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.6, "Interlock Systems Important to Safety," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.6 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the interlock systems important to safety incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.6 of this SER to reflect the final disposition of the DC amendment application.

## **7.7 Control and Instrumentation Systems (Related to RG 1.206, Section C.III.1, Chapter 7, C.I.7.7, "Control Systems Not Required for Safety")**

Section 7.7 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.7, "Control and Instrumentation Systems," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.7 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the control and instrumentation systems incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.7 of this SER to reflect the final disposition of the DC amendment application.

In addition, the staff has compared the application to the relevant NRC regulations and other NRC regulatory guides. The applicant has satisfactorily addressed RAI 7.5-1, as discussed above. Pending resolution of Confirmatory Item 7.5-1, the staff concludes that the safety-related display information is acceptable in accordance with the requirements of 10 CFR Part 50, Appendix A, Criteria 13 and 64.

## **7.6 Interlock Systems Important to Safety**

Section 7.6 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.6, "Interlock Systems Important to Safety," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.6 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the interlock systems important to safety incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.6 of this SER to reflect the final disposition of the DC amendment application.

## **7.7 Control and Instrumentation Systems (Related to RG 1.206, Section C.III.1, Chapter 7, C.I.7.7, "Control Systems Not Required for Safety")**

Section 7.7 of the BLN COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 7.7, "Control and Instrumentation Systems," of Revision 17 of the AP1000 DCD. The NRC staff reviewed the application and checked the referenced DCD to ensure that no issue relating to this section remained for review.<sup>1</sup> The NRC staff's review confirmed that there is no outstanding issue related to this section.

The Westinghouse application to amend Appendix D to 10 CFR Part 52 includes changes to Section 7.7 of the AP1000 DCD, as stated in Revision 17 of the AP1000 DCD. The staff is reviewing this information on Docket Number 52-006. The results of the NRC staff's technical evaluation of the information related to the control and instrumentation systems incorporated by reference in the BLN COL FSAR, Revision 1, will be documented in a supplement to NUREG-1793. The supplement to NUREG-1793 is not yet complete, and this is being tracked as part of Open Item 1-1. The staff will update Section 7.7 of this SER to reflect the final disposition of the DC amendment application.

PKG No.: ML091610586

ADAMS Accession Number: ML083390149

OFFICE	NWE1/LA	NWE1/PM	DE/ICE1	OCG	NWE1/BC
NAME	KGGoldstein	TSimms	TJackson	AHodgdon	SCoffin
DATE	9/16/09	9/16/09	9/18/09	9/25/09	11/02/09

OFFICIAL RECORD COPY