



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

July 8, 2009

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 – REVISION TO PART 2 – FINAL SAFETY ANALYSIS REPORT SECTION 2.3, METEOROLOGY

This letter provides voluntary revisions to the Tennessee Valley Authority's (TVA) combined license (COL) application. The specific revisions identified in the enclosure will be included in a future revision of the BLN application.

If you should have any questions, please contact Tom Spink at 1101 Market Street, LP5A, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-7062, or via email at tespink@tva.gov.

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

Executed on this 8th day of July, 2009.

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

Enclosure
cc: See Page 2

D085
A053
NRD

Document Control Desk

Page 2

July 8, 2009

cc: (Enclosures)

- E. Cummins, Westinghouse
- S. P. Frantz, Morgan Lewis
- M. W. Gettler, FP&L
- R. C. 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
- T. Simms, NRC/HQ
- G. A. Zinke, NuStart

cc: (w/o Enclosure)

- B. 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. Register, DOE/PM
- L. Reyes, NRC/RII
- J. M. Sebrosky, NRC/HQ

Enclosure
TVA letter dated July 8, 2009
RAI Responses

NRC Review of Final Safety Analysis Report

TVA has identified the need for update of the Bellefonte site specific atmospheric dispersion factors in COLA FSAR Subsections 2.0 and 2.3, and Appendix 2DD.

BLN RAI ID: 3523

BLN RESPONSE:

The COLA FSAR Section 2.0, Table 2.0-202, Section 2.3 Table 2.3-321, and Appendix 2DD, Table 2DD-204 will be revised as shown in the Application Revisions section below in a future revision.

This revision is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

1. COLA Part 2, FSAR Chapter 2, Section 2.0, Table 2.0-201, BLN Site Characteristic for the Atmospheric Dispersion Value for Site Boundary (annual average) is revised from:

$$0.28 \times 10^{-5} \text{ sec/m}^3$$

To read:

$$0.14 \times 10^{-5} \text{ sec/m}^3$$

2. COLA Part 2, FSAR Chapter 2, Section 2.0, Table 2.0-202 values for the FSAR χ/Q 's will be revised from the current Revision 1 to read as shown in Attachment 1. The column heading for the "Fuel Building Rail Bay Door" on sheet 3 of 4 is also revised to read "Radwaste Building Truck Staging Area Door." The Notes are not revised and remain as shown in Revision 1 of the FSAR.

3. COLA Part 2, FSAR Chapter 2, Section 2.3, Table 2.3-321 values for the χ/Q 's will be revised from the current Revision 1 to read as shown in Attachment 2. The column headings for the "Fuel Building Rail Bay Door" on sheets 1 and 2 are also revised to read "Radwaste Building Truck Staging Area Door." The Notes are not revised and remain as shown in Revision 1 of the FSAR.

4. COLA Part 2, FSAR Chapter 2, Appendix 2DD, Table 2DD-204 will be revised from the current Revision 1 to omit the first set of comparisons on Sheet 2 of 6 since this set is a duplicate of the third set on Sheet 1 of 6.

5. COLA Part 2, FSAR Chapter 2, Appendix 2DD, Table 2DD-204 will be revised from the current Revision 1 to replace the second set of comparisons on Sheet 2 of 6 with the set of comparisons shown in Attachment 3.

6. COLA Part 2, FSAR Chapter 2, Appendix 2DD, Table 2DD-204 will be revised from the current Revision 1 to replace the first set of comparisons on Sheet 5 of 6 with the set of comparisons shown in Attachment 3.

Enclosure
TVA letter dated July 8, 2009
RAI Responses

These changes are PLANT-SPECIFIC.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

Attachment 1 – Revisions for Table 2.0-202

Attachment 2 – Revisions for Table 2.3-321

Attachment 3 – Revisions for Table 2DD-204

Table 2.0-202 (Sheet 1 of 4)
COMPARISON OF CONTROL ROOM ATMOSPHERIC DISPERSION FACTORS FOR ACCIDENT ANALYSIS
FOR AP1000 DCD AND BELLEFONTE NUCLEAR PLANT UNITS 3 & 4
NOTE: Site χ/Q Values are from Table 2.3-321

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)			χ/Q (s/m ³) at Annex Building Door for the Identified Release Points ^(b)		
	Plant Vent or PCS Air Diffuser ^(c)	Plant Vent	PCS Air Diffuser	Plant Vent or PCS Air Diffuser ^(c)	Plant Vent	PCS Air Diffuser
	DCD	FSAR	FSAR	DCD	FSAR	FSAR
0 – 2 hours	3.0E-3	1.9E-3	1.6E-3	1.0E-3	4.1E-4	4.4E-4
2 – 8 hours	2.5E-3	1.6E-3	7.6E-4	7.5E-4	3.6E-4	3.6E-4
8 – 24 hours	1.0E-3	7.5E-4	3.5E-4	3.5E-4	1.7E-4	1.5E-4
1 – 4 days	8.0E-4	5.5E-4	2.6E-4	2.8E-4	1.3E-4	1.2E-4
4 – 30 days	6.0E-4	4.3E-4	2.1E-4	2.5E-4	9.8E-5	9.1E-5

Attachment 1 – Revisions for Table 2.0-202
TVA letter dated July 8, 2009
RAI Responses

(continuation of Table 2.0-202 (Sheet 1 of 4))

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)				χ/Q (s/m ³) at Annex Building Door for the Identified Release Points ^(b)			
	Steam Line Break Releases	Steam Line Break Releases	Condenser Air Removal Stack ^(g)	Condenser Air Removal Stack	Steam Line Break Releases	Steam Line Break Releases	Condenser Air Removal Stack ^(g)	Condenser Air Removal Stack
	DCD	FSAR	DCD	FSAR	DCD	FSAR	DCD	FSAR
0 – 2 hours	2.4E-2	9.7E-3	6.0E-3	1.5E-3	4.0E-3	8.2E-4	2.0E-2	2.1E-3
2 – 8 hours	2.0E-2	3.3E-3	4.0E-3	1.2E-3	3.2E-3	5.2E-4	1.8E-2	7.8E-4
8 – 24 hours	7.5E-3	2.1E-3	2.0E-3	5.4E-4	1.2E-3	2.5E-4	7.0E-3	3.2E-4
1 – 4 days	5.5E-3	1.5E-3	1.5E-3	3.6E-4	1.0E-3	1.9E-4	5.0E-3	3.2E-4
4 – 30 days	5.0E-3	9.2E-4	1.0E-3	3.0E-4	8.0E-4	1.5E-4	4.5E-3	2.2E-4

Table 2.0-202 (Sheet 2 of 4)
COMPARISON OF CONTROL ROOM ATMOSPHERIC DISPERSION FACTORS FOR ACCIDENT ANALYSIS
FOR AP1000 DCD AND BELLEFONTE NUCLEAR PLANT UNITS 3 & 4
NOTE: Site χ/Q Values are from Table 2.3-321

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)		χ/Q (s/m ³) at Annex Building Door for the Identified Release Points ^(b)	
	Ground Level Containment Release Points ^{(d) (h)}		Ground Level Containment Release Points ^(d)	
	DCD	FSAR	DCD	FSAR
0 – 2 hours	6.0E-3	2.7E-3	1.0E-3	4.7E-4
2 – 8 hours	3.6E-3	2.0E-3	7.5E-4	4.2E-4
8 – 24 hours	1.4E-3	7.9E-4	3.5E-4	1.9E-4
1 – 4 days	1.8E-3	7.1E-4	2.8E-4	1.5E-4
4 – 30 days	1.5E-3	5.9E-4	2.5E-4	1.2E-4

Attachment 1 – Revisions for Table 2.0-202
 TVA letter dated July 8, 2009
 RAI Responses

(continuation of Table 2.0-202 (Sheet 2 of 4))

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)		χ/Q (s/m ³) at Annex Building Door for the Identified Release Points ^(b)	
	PORV and Safety Valve Releases ^(e)		PORV and Safety Valve Releases ^(e)	
	DCD	FSAR	DCD	FSAR
0 – 2 hours	2.0E-2	9.7E-3	4.0E-3	8.5E-4
2 – 8 hours	1.8E-2	3.5E-3	3.2E-3	5.0E-4
8 – 24 hours	7.0E-3	2.1E-3	1.2E-3	2.5E-4
1 – 4 days	5.0E-3	1.5E-3	1.0E-3	1.8E-4
4 – 30 days	4.5E-3	8.7E-4	8.0E-4	1.5E-4

Table 2.0-202 (Sheet 3 of 4)
COMPARISON OF CONTROL ROOM ATMOSPHERIC DISPERSION FACTORS FOR ACCIDENT ANALYSIS
FOR AP1000 DCD AND BELLEFONTE NUCLEAR PLANT UNITS 3 & 4
NOTE: Site χ/Q Values are from Table 2.3-321

	χ/Q (s/m ³) at HVAC Intake for the Identified Release Points ^(a)			χ/Q (s/m ³) at Annex Building Door for the Identified Release Points ^(b)		
	Fuel Handling Area ^(f)	Fuel Building Blowout Panel	Radwaste Building Truck Staging Area Door	Fuel Handling Area ^(f)	Fuel Building Blowout Panel	Radwaste Building Truck Staging Area Door
	DCD	FSAR	FSAR	DCD	FSAR	FSAR
0 – 2 hours	6.0E-3	1.4E-3	1.1E-3	6.0E-3	3.5E-4	3.3E-4
2 – 8 hours	4.0E-3	1.2E-3	9.5E-4	4.0E-3	2.9E-4	2.8E-4
8 – 24 hours	2.0E-3	5.9E-4	4.8E-4	2.0E-3	1.4E-4	1.4E-4
1 – 4 days	1.5E-3	4.5E-4	3.6E-4	1.5E-3	1.1E-4	1.1E-4
4 – 30 days	1.0E-3	3.3E-4	2.5E-4	1.0E-3	8.3E-5	7.8E-5

Table 2.3-321 (Sheet 1 of 2)
 CONTROL ROOM ATMOSPHERIC DISPERSION FACTORS
 (χ/Q) FOR ACCIDENT DOSE ANALYSIS, BLN UNITS 3 & 4

χ/Q (s/m³) AT HVAC INTAKE

Time Interval	Plant Vent	PCS Air Diffuser	Fuel Bldg. Blowout Panel	Radwaste Building Truck Staging Area Door
0 – 2 hours	1.9E-03	1.6E-03	1.4E-03	1.1E-03
2 – 8 hours	1.6E-03	7.6E-04	1.2E-03	9.5E-04
8 – 24 hours	7.5E-04	3.5E-04	5.9E-04	4.8E-04
1 – 4 days	5.5E-04	2.6E-04	4.5E-04	3.6E-04
4-30 days	4.3E-04	2.1E-04	3.3E-04	2.5E-04

Attachment 2 – Revisions for Table 2.3-321
 TVA letter dated July 8, 2009
 RAI Responses

(continuation of Table 2.3-321 (Sheet 1 of 2))

	Steam Line Break Releases	PORV & Safety Valves	Condenser Air Removal Stack	Containment Shell
0 – 2 hours	9.7E-03	9.7E-03	1.5E-03	2.7E-03
2 – 8 hours	3.3E-03	3.5E-03	1.2E-03	2.0E-03
8 – 24 hours	2.1E-03	2.1E-03	5.4E-04	7.9E-04
1 – 4 days	1.5E-03	1.5E-03	3.6E-04	7.1E-04
4-30 days	9.2E-04	8.7E-04	3.0E-04	5.9E-04

Table 2.3-321 (Sheet 2 of 2)
 CONTROL ROOM ATMOSPHERIC DISPERSION FACTORS
 (χ/Q) FOR ACCIDENT DOSE ANALYSIS, BLN UNITS 3 & 4

χ/Q (s/m³) AT ANNEX BUILDING ACCESS

Time Interval	Plant Vent	PCS Air Diffuser	Fuel Bldg. Blowout Panel	Radwaste Building Truck Staging Area Door
0 – 2 hours	4.1E-04	4.4E-04	3.5E-04	3.3E-04
2 – 8 hours	3.6E-04	3.6E-04	2.9E-04	2.8E-04
8 – 24 hours	1.7E-04	1.5E-04	1.4E-04	1.4E-04
1 – 4 days	1.3E-04	1.2E-04	1.1E-04	1.1E-04
4-30 days	9.8E-05	9.1E-05	8.3E-05	7.8E-05

Attachment 2 – Revisions for Table 2.3-321
 TVA letter dated July 8, 2009
 RAI Responses

(continuation of Table 2.3-321 (Sheet 2 of 2))

	Steam Line Break Releases	PORV & Safety Valves	Condenser Air Removal Stack	Containment Shell
0 – 2 hours	8.2E-04	8.5E-04	2.1E-03	4.7E-04
2 – 8 hours	5.2E-04	5.0E-04	7.8E-04	4.2E-04
8 – 24 hours	2.5E-04	2.5E-04	3.2E-04	1.9E-04
1 – 4 days	1.9E-04	1.8E-04	3.2E-04	1.5E-04
4-30 days	1.5E-04	1.5E-04	2.2E-04	1.2E-04

Attachment 3 – Revisions for Table 2DD-204
 TVA letter dated July 8, 2009
 RAI Responses

Remove the first set of comparisons on Sheet 2 of 6 since this set is a duplicate of the third set of comparisons on Sheet 1 of 6.

The set of comparisons to be deleted reads:

CR HVAC Intake	AP1000 DCD (sec/m ³)	One-Year Value (sec/m ³)	Two-Year Value (sec/m ³)	Ratio of One-Year Value to DCD	Ratio of Two-Year Value to DCD	Change in Margin
	Steam Line Break	Steam Vent	Steam Vent	Steam Vent	Steam Vent	Steam Vent
0 – 2 hours	2.4E-02	9.7E-03	1.1E-02	40.4%	45.8%	-5.4%
2 – 8 hours	2.0E-02	3.3E-03	4.3E-03	16.5%	21.5%	-5.0%
8 – 24 hours	7.5E-03	2.1E-03	2.0E-03	28.0%	26.7%	1.3%
1 – 4 days	5.5E-03	1.5E-03	1.4E-03	27.3%	32.7%	-5.5%
4 – 30 days	5.0E-03	9.2E-04	1.3E-03	18.4%	26.0%	-7.6%

Attachment 3 – Revisions for Table 2DD-204
TVA letter dated July 8, 2009
RAI Responses

Replace the second set of comparisons on Sheet 2 of 6 as shown below.

The set of comparisons to be replaced reads:

CR HVAC Intake	AP1000 DCD (sec/m ³)	One-Year Value (sec/m ³)	Two-Year Value (sec/m ³)	Ratio of One-Year Value to DCD	Ratio of Two-Year Value to DCD	Change in Margin
	Steam Line Break	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack
0 – 2 hours	2.4E-02	1.5E-03	1.5E-03	6.3%	6.3%	0.0%
2 – 8 hours	2.0E-02	1.2E-03	1.3E-03	6.0%	6.5%	-0.5%
8 – 24 hours	7.5E-03	5.4E-04	5.6E-04	7.2%	7.5%	-0.3%
1 – 4 days	5.5E-03	3.6E-04	3.7E-04	6.5%	6.7%	-0.2%
4 – 30 days	5.0E-03	3.0E-04	3.0E-04	6.0%	6.0%	0.0%

This set of comparisons should be replaced with:

CR HVAC Intake	AP1000 DCD (sec/m ³)	One-Year Value (sec/m ³)	Two-Year Value (sec/m ³)	Ratio of One-Year Value to DCD	Ratio of Two-Year Value to DCD	Change in Margin
	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack
0 – 2 hours	6.0E-03	1.5E-03	1.5E-03	25.0%	25.0%	0.0%
2 – 8 hours	4.0E-03	1.2E-03	1.3E-03	30.0%	32.5%	-2.5%
8 – 24 hours	2.0E-03	5.4E-04	5.6E-04	27.0%	28.0%	-1.0%
1 – 4 days	1.5E-03	3.6E-04	3.7E-04	24.0%	24.7%	-0.7%
4 – 30 days	1.0E-03	3.0E-04	3.0E-04	30.0%	30.0%	0.0%

Attachment 3 – Revisions for Table 2DD-204
 TVA letter dated July 8, 2009
 RAI Responses

Replace the first set of comparisons on Sheet 5 of 6 as shown below.

The set of comparisons to be replaced reads:

Annex Bldg Entrance	AP1000 DCD (sec/m ³)	One-Year Value (sec/m ³)	Two-Year Value (sec/m ³)	Ratio of One-Year Value to DCD	Ratio of Two-Year Value to DCD	Change in Margin
	Steam Line Break	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack
0 – 2 hours	4.0E-03	2.1E-03	2.4E-03	52.5%	60.0%	-7.5%
2 – 8 hours	3.2E-02	7.8E-04	9.6E-04	24.4%	30.0%	-5.6%
8 – 24 hours	1.2E-03	3.2E-04	4.7E-04	26.7%	39.2%	-12.5%
1 – 4 days	1.0E-03	3.2E-04	4.4E-04	32.0%	44.0%	-12.0%
4 – 30 days	8.0E-04	2.2E-04	3.2E-04	27.5%	40.0%	-12.5%

This set of comparisons should be replaced with:

Annex Bldg Entrance	AP1000 DCD (sec/m ³)	One-Year Value (sec/m ³)	Two-Year Value (sec/m ³)	Ratio of One-Year Value to DCD	Ratio of Two-Year Value to DCD	Change in Margin
	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack	CAR Stack
0 – 2 hours	2.0E-02	2.1E-03	2.4E-03	10.5%	12.0%	-1.5%
2 – 8 hours	1.8E-02	7.8E-04	9.6E-04	4.3%	5.3%	-1.0%
8 – 24 hours	7.0E-03	3.2E-04	4.7E-04	4.6%	6.7%	-2.1%
1 – 4 days	5.0E-03	3.2E-04	4.4E-04	6.4%	8.8%	-2.4%
4 – 30 days	4.5E-03	2.2E-04	3.2E-04	4.9%	7.1%	-2.2%