



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

May 30, 2008

10 CFR 52.79

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

In the Matter of ) Docket Numbers 52-014 and 52-015  
Tennessee Valley Authority )

NUCLEAR REGULATORY COMMISSION (NRC) – BELLEFONTE NUCLEAR  
PLANT (BLN) – CHANGES TO ENVIRONMENTAL REPORT CHAPTER 8 – NEED  
FOR POWER

Reference: Letter from Ashok Bhatnagar (TVA) to Mr. R. William Borchardt (NRC),  
Application for Combined License for BLN Units 3 and 4,” dated  
October 30, 2007.

The purpose of this letter is to identify changes to the Applicant’s Bellefonte Nuclear Plant Units 3 and 4 (BLN), Part 3, Environmental Report (ER) Chapter 8, Need for Power evaluation. The changes identified in this letter were identified by TVA staff during post-submittal reviews of the BLN combined license application (COLA). These changes affect neither the findings of the power supply review in ER Section 9.2, nor the need for power assessment determination regarding the anticipated need for additional baseload generation presented in Section 9.4.

By the referenced letter, dated October 30, 2007, TVA submitted an application for a combined license for two AP1000 advanced passive pressurized-water reactors at the BLN site. Chapter 8 of the BLN ER presents a summary of the evaluation that demonstrates a need for additional baseload generation capacity within the relevant service area. Following submittal of the BLN COLA, TVA identified several discrepancies in the text, tables, and figures provided in ER Chapter 8. The sources of these discrepancies include changes that were made to reflect TVA’s decision to complete construction of its Watts Bar Unit 2 (WBN-2) nuclear reactor, changes to correct editorial errors regarding the current and expected generating capacity of several of TVA’s operating units and planned power sources, and unrelated minor changes to more clearly reflect TVA’s projected power demand and to correct other editorial errors.

DOBS  
NRO

May 30, 2008

These changes are discussed in greater detail and presented with marked-up text in Enclosures 2 and 3. The changes identified in these enclosures will be made in a future revision of the BLN application.

Enclosure 3 to this letter contains proprietary information, and TVA requests it be withheld from disclosure in accordance with 10 CFR 2.390. The appropriate affidavit is included in Enclosure 1 to this letter.

If there are any questions regarding this application, please contact Phillip Ray at 1101 Market Street, LP 5A, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-7030, or via email at pmray@tva.gov.

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

Executed on this 30<sup>th</sup> day of May, 2008.



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

Enclosure 1: Affidavit For Withholding Information

- 2: Changes to Bellefonte COLA, Part 3 Environmental Report Chapter 8- Need for Power.
- 3: Changes to Bellefonte COLA Part 9 Withheld Information for Environmental Chapter 8- Need for Power

Enclosures

cc (Enclosures and Attachments):

M.P. Cazaubon, NuStart  
R.B. Clary, SCE&G  
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. Hood, NRC/HQ  
R.H. Kitchen, PGN  
M.C Kray, NuStart  
D. Lindgren, Westinghouse  
G.D. Miller, PG&N  
G. Serviere, EDF-INA  
G.A Zinke, NuStart

cc (w/o Enclosures and Attachments):

A.M Monroe, SCE&G  
C. R Pierce, SNC  
R. Register, DOE/PM  
L. Reyes, NRC/RII

ENCLOSURE 1  
CHANGES TO BLN ENVIRONMENTAL REPORT CHAPTER 8-NEED FOR POWER  
May 30, 2008

**AFFIDAVIT FOR WITHHOLDING  
INFORMATION**

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Pg. 1-2**

Enclosure 1

United States Nuclear Regulatory Commission  
Washington, District of Columbia

In the Matter of )  
)  
)  
Tennessee Valley Authority )  
Bellefonte Nuclear Plant, )  
Units 3 and 4 )  
Combined License Application )  
)  
)

**AFFIDAVIT**

STATE OF TENNESSEE )  
)  
COUNTY OF HAMILTON )

Andrea L. Sterdis, after first being duly sworn, deposes and says:

1. I am employed as the Manager, New Nuclear Licensing and Industry Affairs in Nuclear Generation Development and Construction at the Tennessee Valley Authority (TVA), an agency and instrumentality of the United States Government. I am familiar with the Combined License Application for TVA’s Bellefonte Nuclear Plant, Units 3 and 4 (“Combined License Application”) and have personal knowledge of the matters stated herein.

2. I am submitting this affidavit in accordance with 10 CFR § 2.390 and 10 CFR § 9.17, and because certain information contained in Enclosure 3 to this letter has been determined by TVA to be of the type customarily held in strict confidence by the agency and is protected from disclosure under the Freedom of Information Act (FOIA), 5 U.S.C. § 552(B), TVA’s implementing FOIA regulations, 18 CFR § 1301, and the Trade Secrets Act, 18 U.S.C. §1905.

3. The information which should not be released to the public has been collected and organized into Enclosure 3 of this letter.

4. The entire text of Section 8.3 of the Combined License Application Part 3, including Tables 8.3-2, 8.3-3, 8.3-4, and 8.3-5, as well as Figures 8.3-2 and 8.3-3, which are included in Enclosure 3, should be withheld from public disclosure under 10 CFR § 2.390(a)(4) and (5), as this section’s figures and tables detail TVA’s power supply capacity and projections for ability to generate. As such, the disclosure of this

information would reveal processes, methods or apparatus, including supporting data and analyses, that would give TVA's competitors the benefit of TVA's research and development without adequate compensation, thereby giving those competitors an unfair advantage.

5. Information provided in Appendix 8A (Tables 8A-1 and 8A-2) of the Combined License Application Part 3, which is included in Enclosure 3, should be withheld from public disclosure under 10 CFR § 2.390(a)(4) and (5). The information contained therein consists of projections. The disclosure of this information would permit competitors to review TVA's assessments of predicted market circumstances and planned responses. Possession of this knowledge would allow competitors to manipulate their market position and decision making while taking TVA's strategy into account. This would place TVA at an unfair disadvantage in competing for market share at a competitive price. Much of this information contains detailed information about the results of analytical models, methods and processes, including computer codes, which TVA or its contractors have developed.

6. All of the information sought to be withheld ("the information") is being submitted to the NRC in confidence.

7. The information is the sort of information regularly and customarily held in confidence by TVA and is, in fact, so held.

8. The information has consistently been held in confidence by TVA.

9. No public disclosure of the information has been made.

10. The information is not available in public sources.

11. All disclosures of the information to third parties, including any transmittals to the NRC, have been made pursuant to regulatory provisions or proprietary agreements which provide that the information is to be maintained in confidence.



A handwritten signature in cursive script, reading "Andrea L. Sterdis".

Andrea L. Sterdis  
Manager, New Nuclear Licensing and  
Industry Affairs  
Nuclear Generation Development and  
Construction  
Tennessee Valley Authority  
423-751-7119

Sworn to and subscribed before me

this 30<sup>th</sup> day of May, 2008.

A handwritten signature in cursive script, reading "Carolyn P. Creek".  
\_\_\_\_\_  
Notary Public

My commission expires: Aug. 17, 2011

ENCLOSURE 2  
CHANGES TO BLN ENVIRONMENTAL REPORT CHAPTER 8 – NEED FOR POWER  
May 30, 2008

**CHANGES TO  
BELLEFONTE COLA, PART 3  
ENVIRONMENTAL REPORT  
CHAPTER 8 - NEED FOR POWER**

**MAY 30, 2008**

**Pages 1 – 7**

## **DISCUSSION OF CHANGES:**

### Changes to Address Wholesale Distributor Customer Non-Renewals

ER Subsection 8.2.1.2 presents TVA's historical energy and demand since 1990 and the forecast to 2022 for residential and commercial and industrial loads, net system requirements, and load factor. This subsection includes a statement that TVA wholesale distributor customers are assumed to continuously renew their power supply contracts throughout the planning period. This sentence was meant to convey an understanding of an assumption that was made in the analysis, but it was determined that it could be misinterpreted to mean that TVA is not aware of any wholesale distributor customers that are planning not to renew their contracts. In actuality, TVA is aware of three small distributors that have announced plans not to renew their power supply contracts. To resolve this potential misinterpretation, the statement in ER Section 8.2.1.2 is replaced with the following:

“Three relatively small distributors have served notice to TVA of their intent to terminate their contracts; however, because these customers represent less than 1.5% of TVA's load, the loss of these customers will not significantly affect the magnitude or timing of the need for additional baseload capacity. Therefore, for simplicity, TVA's current wholesale distributor customers are assumed to continuously renew their power supply contracts throughout the planning period.”

This change affects ER Subsection 8.2.1.2, Forecasts of Energy, Capacity, and Load Factors, only.

### Changes to Update Tables and Figures and Correct Editorial Errors

Tables and Figures in ER Section 8.2 are revised to incorporate more current socioeconomic data, such as household and population values and gross regional product values. In addition, an editorial change is made to add the Low forecast values that were inadvertently omitted from Table 8.2-8. These changes are summarized below:

- Figure 8.2-9 is updated with current regional and national economic growth projections. These changes do not affect the corresponding text in Chapter 8.
- Table 8.2-5 is updated with current growth regional product (GRP) projections. Two values are updated: GRP for 2012-2017 and GRP for 2017-2022. These changes do not affect the corresponding text in Chapter 8.
- Table 8.2-7 is updated with current socioeconomic projections. Ten values are updated: all household and population values for 2012-2017; all household data for 2017-2022; and population data for the medium forecast for 2017-2022. These changes do not affect the corresponding text in Chapter 8.
- Table 8.2-8 is revised to include the Low forecast values that were inadvertently omitted from Table 8.2-8. These changes do not affect the corresponding text in Chapter 8.



ER Section 8.4, Table 8.4-1 and Figure 8.4-9, are updated to provide updated emission data and projections. The specific changes are summarized below:

- Figure 8.4-9 is replaced with a revised figure. This is an editorial change to remove incorrect emissions projections (i.e., dashed lines). These changes do not affect the corresponding text in Chapter 8.
- Table 8.4-1 is updated with revised emissions reduction projections. These changes do not affect the corresponding text in Chapter 8.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

1. Revise COLA Part 3, ER Subsection 8.2.1.2, second paragraph, as follows:

The demand and energy for the medium load forecast grow at a rate based on expected economic growth. ~~TVA wholesale distributor customers are assumed to continuously renew their power supply contracts throughout the planning period. Three relatively small distributors have served notice to TVA of their intent to terminate their contracts; however, because these customers represent less than 1.5% of TVA's load, the loss of these customers will not significantly affect the magnitude or timing of the need for additional baseload capacity. Therefore, for simplicity, TVA's current wholesale distributor customers are assumed to continuously renew their power supply contracts throughout the planning period.~~ Industrial load growth is expected to be served by wholesale distributor customers. TVA continues to serve its retail customers under contract as of June 30, 2007; load growth assumptions for these customers reflect historical sales and announced plans. One customer, the United States Enrichment Corporation (USEC), has announced plans to move its nuclear fuel enrichment production from its plant in Paducah, Kentucky, to a new facility in Portsmouth, Ohio, where it is expected to be served by other suppliers.

2. Revise COLA Part 3, ER Table 8.2-5, as follows:

TABLE 8.2-5  
AVERAGE ANNUAL REAL GROWTH RATE

| Forecast | 1990-2006 | 2007-2012 | 2012-2017                   | 2017-2022                   |
|----------|-----------|-----------|-----------------------------|-----------------------------|
| GDP      | 3.0%      | 3.0%      | 3.1%                        | 3.1%                        |
| GRP      | 3.6%      | 3.1%      | <del>2.7%</del> <u>3.2%</u> | <del>2.7%</del> <u>3.1%</u> |

3. Revise COLA Part 3, ER Table 8.2-7, as follows:

TABLE 8.2-7  
 ANNUAL AVERAGE GROWTH RATE

| Number of Households |           |                             |                             |
|----------------------|-----------|-----------------------------|-----------------------------|
| Forecast             | 2007-2012 | 2012-2017                   | 2017-2022                   |
| High                 | 1.5%      | <del>1.5%</del> <u>1.4%</u> | <del>1.5%</del> <u>1.3%</u> |
| Medium               | 1.3%      | <del>1.3%</del> <u>1.1%</u> | <del>1.2%</del> <u>1.0%</u> |
| Low                  | 1.1%      | <del>1.0%</del> <u>0.8%</u> | <del>0.8%</del> <u>0.6%</u> |

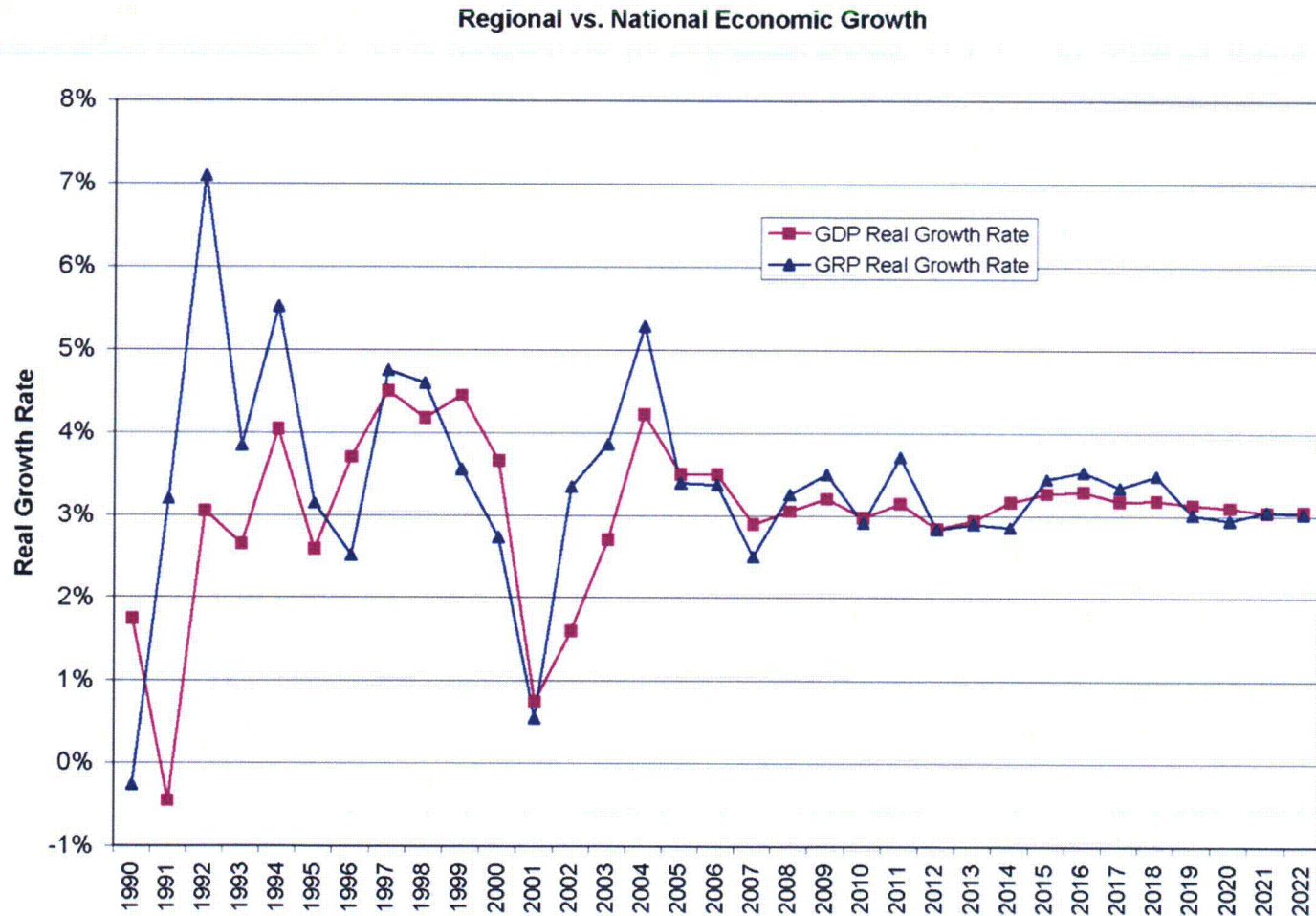
| Total Population |           |                             |                             |
|------------------|-----------|-----------------------------|-----------------------------|
| Forecast         | 2007-2012 | 2012-2017                   | 2017-2022                   |
| High             | 1.3%      | <del>1.5%</del> <u>1.6%</u> | 1.5%                        |
| Medium           | 1.0%      | <del>1.1%</del> <u>1.0%</u> | <del>1.1%</del> <u>1.0%</u> |
| Low              | 0.6%      | <del>0.7%</del> <u>0.6%</u> | 0.6%                        |

4. Revise COLA Part 3, ER Table 8.2-8, as follows:

TABLE 8.2-8  
 AVERAGE ANNUAL GROWTH RATE PER CAPITA PERSONAL INCOME

| Forecast | 2006-2010 | 2010-2015 | 2015-2020 |
|----------|-----------|-----------|-----------|
| High     | 2.6%      | 2.1%      | 1.9%      |
| Medium   | 2.1%      | 2.0%      | 1.6%      |
| Low      | 1.1%      | 1.4%      | 1.0%      |

5. Replace Figure 8.2-9 with the following figure:



**FIGURE 8.2-9**  
**Regional vs. National Economic Growth**

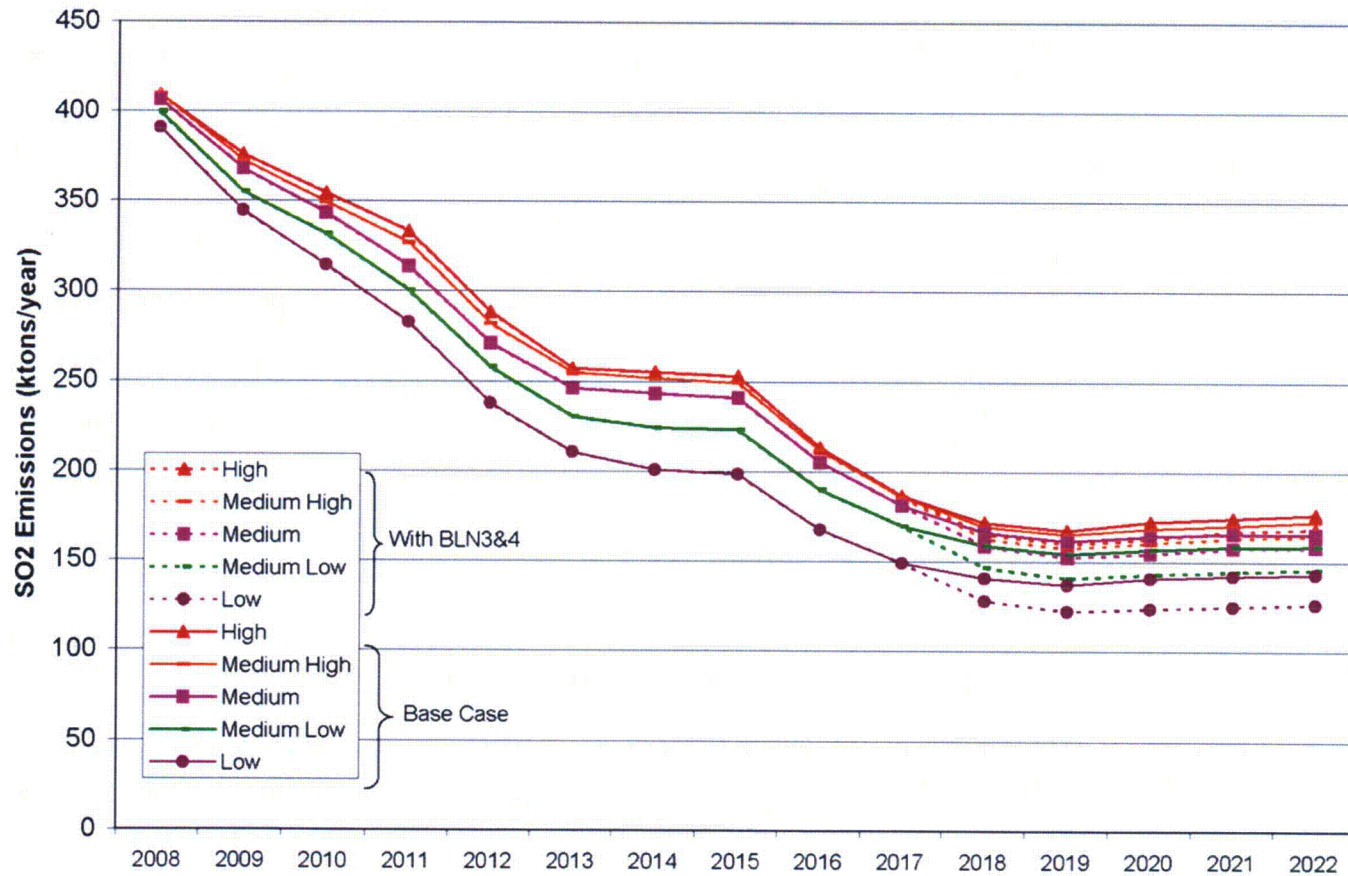
6. Revise COLA Part 3, ER Table 8.4-1, as follows:

TABLE 8.4-1  
2020 EMISSIONS REDUCTIONS

| Load Forecast | SO <sub>2</sub> | NO <sub>x</sub> | CO <sub>2</sub> | Hg             | Average        |
|---------------|-----------------|-----------------|-----------------|----------------|----------------|
| High          | - <u>56</u> %   | - <u>79</u> %   | - <u>113</u> %  | - <u>91</u> %  | - <u>89</u> %  |
| Medium High   | - <u>45</u> %   | - <u>78</u> %   | - <u>113</u> %  | - <u>91</u> %  | - <u>89</u> %  |
| Medium        | - <u>56</u> %   | - <u>78</u> %   | -12%            | -10%           | - <u>89</u> %  |
| Medium Low    | - <u>79</u> %   | - <u>89</u> %   | -9%             | - <u>89</u> %  | - <u>89</u> %  |
| Low           | - <u>112</u> %  | - <u>113</u> %  | - <u>89</u> %   | - <u>112</u> % | - <u>111</u> % |

7. Replace Figure 8.4-9 with the following figure:

**Effect on SO<sub>2</sub> Emissions of BLN3 2018, BLN4 2019**



**FIGURE 8.4-9**  
**Reduction in SO<sub>2</sub> Emissions due to BLN Unit 3 (2018) and BLN Unit 4 (2019)**