



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

August 17, 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 – RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION – LOCA DBA DOSE ANALYSES

- Reference: 1) Letter from Ravindra G. Joshi (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 129 Related to SRP Section 15.00.03 for the Bellefonte Units 3 and 4 Combined License Application, dated October 14, 2008.
- 2) Response letter from Andrea L. Sterdis (TVA) to Document Control Desk (NRC), Response to Request for Additional Information – LOCA DBA Dose Analyses, dated November 14, 2008.
- 3) Response letter from Andrea L. Sterdis (TVA) to Document Control Desk (NRC), Response to Request for Additional Information – LOCA DBA Dose Analyses, dated February 2, 2009.

This letter provides the Tennessee Valley Authority's (TVA) supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) item 15.00.03-01 included in the Reference 1 letter.

A supplemental response to the TVA responses in References 2 and 3 addressing the NRC request in a telecom on April 28, 2009, is provided in the enclosure. Please note that this transmittal includes a CD data disk that contains PROPRIETARY input and output files necessary for the NRC Staff to perform confirmatory analyses.

This submittal contains proprietary information of Westinghouse Electric Company LLC. In conformance with the requirements of 10 CFR Section 2.390, as amended, of the Commission's regulations, we are enclosing with this submittal (see Attachment 15.00.03-001C) an Application for Withholding from Public Disclosure and an affidavit. This affidavit sets forth the basis on which the information identified as proprietary may be withheld from public disclosure by the Commission.

D085
NRD

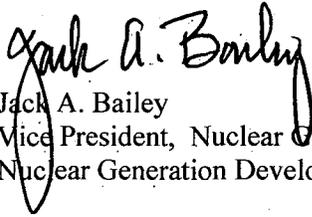
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Page 2

Correspondence with respect to this affidavit or Application for Withholding should reference CAW-09-2593 and should be addressed to J. Winters, Manager, Regulatory Affairs and Standardization, Westinghouse Electric Company LLC, P.O. box 355, Pittsburgh, Pennsylvania 15230-0355.

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.

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

Executed on this 17th day of Aug, 2009.



Jack A. Bailey
Vice President, Nuclear Generation Development
Nuclear Generation Development & Construction

Enclosure
cc: See Page 3

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cc: (w/Enclosure)

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

cc: (w/o Enclosure)

B.C. Anderson, NRC/HQ
M. M. Comar, NRC/HQ
B. Hughes, 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
K. N. Slays, NuStart
J. M. Sebrosky, NRC/HQ

Enclosure
TVA letter dated August 17, 2009
RAI Response

Response to NRC Request for Additional Information letter No. 129 dated October 14, 2008
(2 pages, including this page)

Subject: LOCA DBA Doses in the Final Safety Analysis Report

RAI Number

Date of TVA Response

15.00.03-01

November 14, 2008; February 2, 2009
Supplemented with this letter – see following pages

Associated Additional Attachments / Enclosures

Pages Included

Attachment 15.00.03-01A - Description of ORIGIN2 2001 Calculation	4
Attachment 15.00.03-01B - Description of ORIGIN-S 2008 Calculation	6
Attachment 15.00.03-01C - Westinghouse Third Party Affidavit	8
Attachment 15.00.03-01D - PROPRIETARY CD Data Disk with ORIGIN-S Files	1
Attachment 15.00.03-01A - Public Version-Description of ORIGIN2 2001	2
Attachment 15.00.03-01B - Public Version-Description of ORIGIN-S 2008	2

Enclosure
TVA letter dated August 17, 2009
RAI Response

NRC Letter Dated: October 14, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 15.00.03-01

By letter dated August 14, 2008, NRC informed the AP1000 vendor that an assumption made in evaluating the LOCA DBA for Revision 16 of the AP1000 DCD was not technically justified. Both FSAR Chapter 15 and Section 6.4 of the subject COL application incorporate by reference the design basis accident analyses in Revision 16 of the AP1000 DCD. Provide an evaluation of the LOCA that does not make use of the rejected assumption. Describe any design or siting changes that are intended to compensate for the rejected assumption.

BLN RAI ID: 2394

BLN RESPONSE SUPPLEMENTAL INFORMATION:

During a telecom on April 28, 2009, the NRC requested that TVA provide additional information on the 4% fuel design conservatism as well as the Origen code input and output files.

TVA is attaching a copy of the ORIGEN2 and ORIGEN-S computer codes Input and Output files to support the NRC reviews and analysis in support of the following statement in the referenced RAI response.

These reductions in conservatisms are justified as follows:

a. Core source term

1. Core design - A 4% conservatism was originally included in core design calculations to provide margin for uncertainties in the predicted core designs. The core source term calculations have been revised for the first three core loadings and an equilibrium core cycle that will be utilized for AP1000. Refining the site specific core source terms based on a more detailed evaluation of the first three core loadings and an equilibrium core cycle reduces the uncertainty in the core design so that the original 4% design conservatism is not necessary.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

None

ASSOCIATED ATTACHMENTS/ENCLOSURES:

Attachment 15.00.03-01A - Description of ORIGEN2 2001 Calculation

Attachment 15.00.03-01B - Description of ORIGIN-S 2008 Calculation

Attachment 15.00.03-01C - Westinghouse Third Party Affidavit

Attachment 15.00.03-01D - PROPRIETARY CD Data Disk with ORIGIN-S Files

Attachment 15.00.03-01A - Public Version-Description of ORIGEN2 2001 Calculation

Attachment 15.00.03-01B - Public Version-Description of ORIGIN-S 2008 Calculation

Attachment 15.00.03-001A
TVA letter dated August 17, 2009
RAI Response

Westinghouse Proprietary Class 2
Withhold from Public Disclosure Under 10 CFR 2.390

Attachment 15.00.03-001A
Description of ORIGEN2 2001 Calculation
(4 Pages including Cover Sheet)

Attachment 15.00.03-01C
TVA letter dated August 17, 2009
RAI Responses

Attachment 15.00.03-001C
Westinghouse Third Party Application and Affidavit
(8 Pages including Cover Sheet)



Westinghouse Electric Company
Nuclear Services
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USA

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

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Our ref: CAW-09-2593

June 4, 2009

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: "Westinghouse ORIGEN information for the 2001 DCD and 2008 BLN evaluations"
(Proprietary)

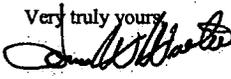
Reference: Letter from Rob Sisk to Document Control Desk, DCP/NUS1214, dated June 4, 2009

The Application for Withholding is submitted by Westinghouse Electric Company LLC (Westinghouse), pursuant to the provisions of Paragraph (b) (1) of Section 2.390 of the Commission's regulations. It contains commercial strategic information proprietary to Westinghouse and customarily held in confidence.

The proprietary material for which withholding is being requested is identified in the proprietary version of the subject report. In conformance with 10 CFR Section 2.390, Affidavit CAW-09-2593 accompanies this Application for Withholding, setting forth the basis on which the identified proprietary information may be withheld from public disclosure.

Accordingly, it is respectfully requested that the subject information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to this Application for Withholding or the accompanying affidavit should reference CAW-09-2593 and should be addressed to J. Winters, Manager, Regulatory Affairs and Standardization, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

Very truly yours,

J. Winters, Manager
Regulatory Affairs and Standardization

cc: G. Bacuta (NRC OWFN 12E-1)

Enclosures

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

88

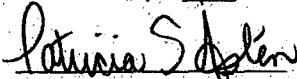
COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared J. Winters, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:

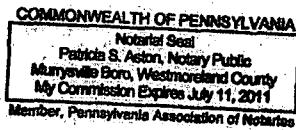


J. Winters, Manager
Regulatory Affairs and Standardization

Sworn to and subscribed before
me this June day of 4th, 2009



Notary Public



- (1) I am Manager, Regulatory Affairs and Standardization, in Nuclear Services, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse "Application for Withholding" accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

 - (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
- (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
 - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
 - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
 - (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
 - (v) The proprietary information sought to be withheld in this submittal is that contained in the files on the enclosed CD "Westinghouse ORIGEN information for the 2001 DCD and 2008 BLN evaluations" (Proprietary) for submittal to the Commission, being transmitted by TVA letter (DCP/NUS1214) and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk.

This information is part of that which will enable Westinghouse to:

- (a) Assist the customer in obtaining NRC approval by responding to NRC.
- (b) Manufacture and deliver products to utilities based on proprietary designs
- (c) Determine compliance with regulations and standards.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of the information to its customers for the purpose of plant construction and operation
- (b) Westinghouse can sell support and defense of safety systems based on the technology in the report.
- (c) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar systems and services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

COPYRIGHT NOTICE

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

Attachment 15.00.03-01D
PROPRIETARY ORIGIN-S Input and Output Files

CD Contains:

equilib.inp

equilib.out

Cycle1.inp

Cycle1.out

Cycle2.inp

Cycle2.out

Cycle3.inp

Cycle3.out

CN-REA-01-25.txt

Attachment 15.00.03-01A
TVA letter dated August 17, 2009
RAI Responses

Attachment 15.00.03-001A
Public Version-Description of ORIGEN2 2001 Calculation
(2 Pages including Cover Sheet)

Sensitive Information - Withheld Under 10 CFR 2.390(d)

Attachment 15.00.03-01B
TVA letter dated August 17, 2009
RAI Responses

Attachment 15.00.03-001B
Public Version-Description of ORIGEN-S 2008 Calculation
(2 Pages including Cover Sheet)

Sensitive Information - Withheld Under 10 CFR 2.390(d)