

PROPRIETARY



Nuclear Innovation
North America LLC
4000 Avenue F, Suite A
Bay City, Texas 77414

September 6, 2012
U7-C-NINA-NRC-120058
10 CFR 2.390

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket No. PROJ0772
Response to Request for Additional Information

Reference: Letter from Michael Eudy to Mark McBurnett, "Request for Additional Information Re: South Texas Project Nuclear Operating Company Topical Report (TR) WCAP-17203-P, Fast Transient and ATWS Methodology (TAC No. ME4505)," June 27, 2012 (ML12178A146)

Attached is the response to the following NRC staff question included the reference:

NRR RAI 23 S2

The response contains information proprietary to Westinghouse Electric Corporation. Since this letter contains information proprietary to Westinghouse Electric Company LLC, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b) (4) of Section 2.390 of the Commission's regulations.

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

T007
NIR0

STI 33588697

Attachment 1 contains the proprietary response to the RAI question. Attachment 2 contains the non-proprietary version of the response. Attachment 3 contains the request for withholding of proprietary information, the affidavit, the proprietary information notice, and the copyright notice.

Correspondence with respect to the copyright or proprietary aspects of this information or the supporting Westinghouse Affidavit should reference CAW-12-3523 and should be addressed to: J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania, 16066.

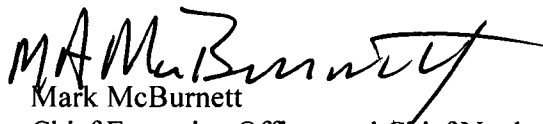
If this letter becomes separated from the proprietary material it is no longer proprietary.

There are no commitments in this letter.

If you have any questions, please contact Scott Head at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

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

Executed on 9-6-12



Mark McBurnett
Chief Executive Officer and Chief Nuclear Officer
Nuclear Innovation North America LLC

jet

Attachments:

1. NRR RAI 23 S2 (Proprietary)
2. NRR RAI 23 S2 (Non-Proprietary)
3. Request for Withholding Proprietary Information

cc: w/o attachment except*
(paper copy)

Director, Office of New Reactors
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
1600 E. Lamar Blvd.
Arlington, TX 76011-4511

Kathy C. Perkins, RN, MBA
Assistant Commissioner
Division for Regulatory Services
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

Alice Hamilton Rogers, P.E.
Inspection Unit Manager
Texas Department of State Health Services
P. O. Box 149347
Austin, Texas 78714-9347

*Steven P. Frantz, Esquire
A. H. Gutterman, Esquire
Morgan, Lewis & Bockius LLP
1111 Pennsylvania Ave. NW
Washington D.C. 20004

*Michael Eudy
*Ekaterina Lenning
Two White Flint North
11545 Rockville Pike
Rockville, MD 20852

(electronic copy)

*George F. Wunder
*Michael Eudy
*Ekaterina Lenning
Fred Brown
U. S. Nuclear Regulatory Commission

Jamey Seely
Nuclear Innovation North America

Peter G. Nemeth
Crain, Caton & James, P.C.

Richard Peña
Kevin Pollo
L. D. Blaylock
CPS Energy

NRR RAI 23.S2

- a) Information submitted in response to NRR RAI 23 S1 confirms that the topical report methodology for anticipated operational occurrences (AOOs) relies on a two-parameter statistical analysis. This conclusion holds, regardless of whether the linear heat generation rate (LHGR) operating limit is specified via transformation through an adjustment to the minimum critical power ratio (MCPR) operating limit via Equation (6) in the topical report or directly through a transient thermal mechanical operating limit (TTMOL). Therefore, to ensure that all fuel design limits are satisfied on a statistical basis with a 95% probability at a 95% confidence level, please either [

] ^{a,c}, (3) demonstrate for currently operating boiling water reactors and the advanced boiling water reactor that, in generality, whenever MCPR limits are satisfied, LHGR limits are necessarily satisfied also, or (4) propose a statistically equivalent alternative that ensures [

] ^{a,c}.

- b) The response to NRR RAI 23 S1 did not adequately demonstrate the validity of Equation (6) in the topical report as an alternative to the TTMOL approach for specifying LHGR operating limits. For Equation (6) to be valid, it appears necessary to establish a general relationship between LHGR and MCPR (e.g., identical scaling during transient conditions). However, the physical basis for such a relationship under transient conditions is unclear, and various analyses presented in the responses to requests for information on WCAP-17203 further suggest that such a scaling relationship does not hold in generality. Furthermore, as noted in part (a) above, the use of Equation (6) as an alternative to the TTMOL approach provides no advantage in the statistical analysis. As such, if Equation (6) is to be used, please provide the following additional information to demonstrate its validity:

1. If Equation (6) is considered an exact equality, please provide the derivation of this equation.
2. If Equation (6) is considered an approximation, please provide justification for this approximation under transient conditions and prove in generality that this approximation is necessarily conservative relative to the LHGR operating limits defined by the TTMOL approach. Please explicitly specify key assumptions used in the demonstration. Empirical calculations illustrating that Equation (6) is a conservative approximation even under conditions that are shown to be generically bounding with respect to differential scaling between MCPR and LHGR may be used to supplement the demonstration.

- c) The response to NRR RAI 23 S1 proposed two “equivalent” methods for performing the [

] ^{a,c} statistical analysis for an anticipated transient without scram (ATWS). However, only the second approach is sufficient to ensure compliance with all three ATWS limits jointly on a statistical basis with a 95% probability at a 95% confidence level. Please revise the topical report to commit to using only the second approach, or, if desired, propose an alternate, statistically equivalent, methodology that ensures all three ATWS limits are satisfied jointly with at least a 95% probability at a 95% confidence level.

- d) Please replace the existing terminology in the topical report associated with the “analysis of variance” method with a descriptor that reflects the actual statistical method employed (i.e., statistical properties of the normal distribution).

Response to NRR RAI 23.S2

- a) Westinghouse commits to performing a []^{a,c} to evaluate MCPR and LHGR. Alternatively, either of these two limits (MCPR or LHGR) may be []
 []^{a,c} The other limit is then evaluated using a []^{a,c}, as described in the LTR.
- b) As the response to part a) states, the LHGR operating limit will be addressed in Westinghouse methodology either by []
 []^{a,c}. Therefore it is not necessary to discuss the relationship between LHGR and MCPR in the form of Equation (6) since Equation 6 will not be used. []
 []^{a,c}
- c) Westinghouse will revise the topical report to commit to using only []
 []^{a,c}

To reflect the NRC considerations, the following changes will be made in Section 7.4 in the LTR (changes are marked *italics*):

Original Formulation:

- **Define the tolerance limits** – probability level of 95% and confidence interval of 95% is used in the uncertainty evaluation for each operating limit or safety margin to acceptance criteria.

Updated Formulation:

- **Define the tolerance limits** – probability level of 95% and confidence interval of 95% is used in the uncertainty evaluation for *all* operating limits of safety margin to acceptance criteria. []

[]^{a,c}

- d) Westinghouse will replace the method name “analysis of variance” in the approved version of the LTR in the six locations where it is used with “statistical properties of the normal distribution”.

CAW-12-3523

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared B. F. Maurer, 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:

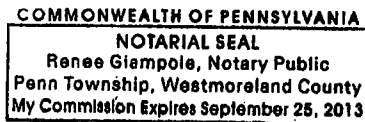


B. F. Maurer, Manager
ABWR Licensing

Sworn to and subscribed before me
this 28th day of August 2012



Notary Public



- (1) I am Manager, ABWR Licensing, 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 Proprietary Information from Public Disclosure 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 which is appropriately marked in "Responses to NRR's Supplemental RAI 23.S2 on WCAP-17203" (Proprietary), dated August 28, 2012, for submittal to the Commission, being transmitted by Nuclear Innovation North America (NINA) letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is in response to the NRC's request for additional information regarding WCAP-17203-P and may be used only for that purpose.

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

- (a) Assist the customer in obtaining NRC review and approval of the Westinghouse Fast Transient and ATWS Methodology topical as applied to current and ABWR plant designs.

Further this information has substantial commercial value as follows:

- (a) Its use by a competitor would improve their competitive position in the design and licensing of a similar product for ABWR fast transient and ATWS analysis.
- (b) 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 fuel design and licensing defense 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.