



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

January 30, 2001  
NOC-AE-01000992  
STI: 31219379  
File No.: G21.02  
10CFR50.90  
10CFR2.790

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

South Texas Project  
Unit 2  
Docket No. STN 50-499

Response to Request for Additional Information re: License Amendment Request Associated  
with Modifying Alternate Repair Criteria of Steam Generator Tubes at Certain  
Intersections of Tubes and Tube Support Plates (TAC MA8271)

STP Nuclear Operating Company (STPNOC) formally submits an addendum to WCAP-15163, Rev. 1 (proprietary) and to WCAP-15164, Rev. 1 (non-proprietary), which document a bounding analysis and, in conjunction with the two meetings described below, respond to Reference 1. This submittal makes a point-by-point response to Reference 1 unnecessary.

In February 2000, STPNOC proposed to revise the Technical Specifications to implement 3-volt alternate repair criteria for certain Unit 2 steam generator tubes for one fuel cycle (Reference 2). WCAP-15163, Rev. 1 (attached to Reference 2) provided the technical basis for the proposed 3-volt criteria.

The NRC Materials Branch submitted an informal request for additional information (RAI) regarding the 3-volt alternate repair criteria, WCAP-15163, and the proposed Technical Specification changes. Informal responses were provided to the informal RAI on November 22, 2000. The NRC also submitted a formal RAI (Reference 1) that identified several questions regarding vibration and related topics, RELAP-5 and its application, steam generator thermal response, other analysis-related items, and probabilistic risk analysis considerations.

During a November 17, 2000, meeting with NRC management and staff, STPNOC presented additional justification for the application of RELAP-5 and presented a review of the conservatism included in our approach. The NRC noted that the application of RELAP-5 to determine tube support plate loading during a main steam line break was not inappropriate, but that validation of the code version against available test data was necessary prior to its application to provide input hydraulic loading for the tube support plate displacement analysis for Unit 2.

AP01

In response to the NRC position, STPNOC initiated an analysis based on conservative first-principles assumptions, independent of RELAP-5, to determine the bounding hydraulic loads and tube support plate deflections. The bounding analysis was performed because the time required to develop the complete validation of the specific application of RELAP-5 as requested in Reference 1 would prevent timely implementation of the alternate repair criteria for which approval had been requested. The objective of the bounding analysis was to demonstrate the significant margin for the probability of burst that exists for the 3-volt criteria. To reduce uncertainties due to cross-flow, application of the 3-volt criteria was limited to the hot-leg tubes intersecting the three tube support plates above the flow distribution baffle in the steam generators (plates C, F, and J). To add further conservatism, sixteen tubes at each of the three tube support plates will be expanded to lock the plates in place.

STPNOC presented the bounding analysis approach and preliminary results to NRC management and staff on December 8, 2000. On January 10, 2001, STPNOC informally submitted the WCAP addendum to the NRC staff. Staff comments on the draft addendum have been incorporated into the attachments to this letter.

STPNOC also submitted a revised Technical Specification change package reflecting application of the revised 3-volt alternate repair criteria on January 24, 2001 (Reference 3).

It is our understanding from discussions with the NRC Project Manager that the Materials Branch is satisfied with our responses to the informal RAI and that a formal submittal is unnecessary. It is also our understanding from the December 8, 2000, meeting that the NRC has the necessary resources available to review the attached information and render a decision by March 1, 2001. We would appreciate such a timely review to allow implementation of the alternate repair criteria during the Unit 2 refueling outage scheduled to begin soon thereafter.

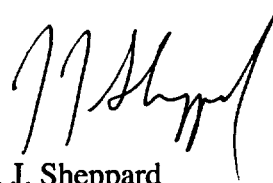
Enclosed with this letter are:

- Addendum to WCAP-15164, Rev. 1, January 2001 (Non-Proprietary)
- Addendum to WCAP-15163, Rev. 1, January 2001 (Proprietary)
- Westinghouse authorization letter, CAW-01-1435, and the accompanying affidavit, a Proprietary Information Notice, and a Copyright Notice.

As the Addendum to WCAP-15163, Rev. 1 contains information proprietary to Westinghouse Electric Company, LLC ("Westinghouse"), 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 NRC and addresses with specificity the considerations listed in 10 CFR 2.790(b)(4).

Correspondence with respect to the copyright or proprietary aspects of the item listed above or the supporting Westinghouse affidavit should reference CAW-01-1435 and should be addressed to H. A. Sepp, Manager of Regulatory and Licensing Engineering, Westinghouse Electric Company, LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

If there are any questions regarding this submittal, please contact Mr. Mark Kanavos, Manager, Replacement Steam Generator Project Engineering, at (361) 972-7181.



J. J. Sheppard  
Vice President,  
Engineering & Technical Services

**References:**

1. Letter, T. Kim to W. Cottle, "South Texas Project, Unit 2 - Request for Additional Information re: License Amendment Request Associated with Modifying Alternate Repair Criteria of Steam Generator Tubes at Certain Intersections of Tubes and Tube Support Plates (TAC No. MA8271)," AE-NOC-00000699, dated October 31, 2000
2. Letter, J. J. Sheppard to NRC Document Control Desk, "Proposed Amendment to South Texas Project Technical Specification 3/4.4.5 - Modify Acceptance Criteria for Repair of Steam Generator Tubes at Certain Intersections of Tubes and Tube Support Plates," NOC-AE-000702, dated February 21, 2000
3. Letter, J. J. Sheppard to NRC Document Control Desk, "Supplement to Proposed Amendment to South Texas Project Technical Specification 3/4.4.5 - Modify Acceptance Criteria for Repair of Steam Generator Tubes at Certain Intersections of Tubes and Tube Support Plates (TAC No. MA8271)," NOC-AE-01000997, dated January 24, 2001.

**Attachments:**

1. Affidavit
2. Westinghouse letter CAW-01-1435, "Application for Withholding Proprietary Information from Public Disclosure," dated January 24, 2001
3. Addendum to WCAP-15164, Revision 1, "South Texas Unit 2: 3V Alternate Repair Criteria Application of Bounding Analysis and Tube Expansions," January 2001 (Non-Proprietary)
4. Addendum to WCAP-15163, Revision 1, "South Texas Unit 2: 3V Alternate Repair Criteria Application of Bounding Analysis and Tube Expansions," January 2001, (Proprietary)

cc: with Attachments 1 and 2 only unless  
otherwise noted

Ellis W. Merschoff  
Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, Texas 76011-8064

John A. Nakoski  
Addressee Only  
U. S. Nuclear Regulatory Commission  
Project Manager, Mail Stop OWFN/7-D-1  
Washington, DC 20555-0001

Mohan C. Thadani  
Addressee Only  
U. S. Nuclear Regulatory Commission  
Project Manager, Mail Stop OWFN/7-D-1  
Washington, DC 20555-0001  
(Attachment 4 included)

Cornelius F. O'Keefe  
c/o U. S. Nuclear Regulatory Commission  
P. O. Box 910  
Bay City, TX 77404-0910

A. H. Gutterman, Esquire  
Morgan, Lewis & Bockius  
1800 M. Street, N.W.  
Washington, DC 20036-5869

M. T. Hardt/W. C. Gunst  
City Public Service  
P. O. Box 1771  
San Antonio, TX 78296

A. Ramirez/C. M. Canady  
City of Austin  
Electric Utility Department  
721 Barton Springs Road  
Austin, TX 78704

Jon C. Wood  
Matthews & Branscomb  
112 East Pecan, Suite 1100  
San Antonio, Texas 78205-3692

Institute of Nuclear Power  
Operations - Records Center  
700 Galleria Parkway  
Atlanta, GA 30339-5957

Richard A. Ratliff  
Bureau of Radiation Control  
Texas Department of Health  
1100 West 49th Street  
Austin, TX 78756-3189

D. G. Tees/R. L. Balcom  
Houston Lighting & Power Co.  
P. O. Box 1700  
Houston, TX 77251

C. A. Johnson/R. P. Powers  
AEP - Central Power and Light Company  
P. O. Box 289, Mail Code: N5012  
Wadsworth, TX 77483

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001  
(Attachments 3 and 4 included)

# **Attachment 1**

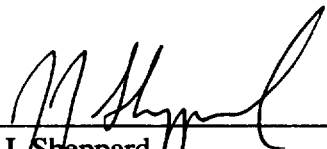
## **Affidavit**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

|                                       |   |                   |
|---------------------------------------|---|-------------------|
| In the Matter of                      | ) |                   |
|                                       | ) |                   |
| STP Nuclear Operating Company, et al. | ) | Docket No. 50-499 |
|                                       | ) |                   |
| South Texas Project                   | ) |                   |
| Unit 2                                | ) |                   |

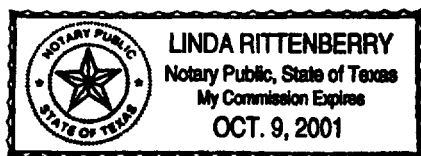
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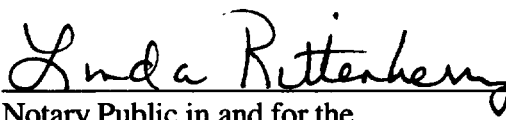
I, J. J. Sheppard, being duly sworn, hereby depose and state that I am Vice President, Engineering & Technical Services, of STP Nuclear Operating Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached response to a request for additional information regarding the proposed 3-volt alternate repair criteria for certain Unit 2 steam generator tubes; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.

  
\_\_\_\_\_  
J. J. Sheppard  
Vice President,  
Engineering & Technical Services

STATE OF TEXAS                   )  
  )  
COUNTY OF MATAGORDA       )

Subscribed and sworn to before me, a Notary Public in and for the State of Texas,  
this 30<sup>th</sup> day of January, 2001.



  
\_\_\_\_\_  
Notary Public in and for the  
State of Texas

## **Attachment 2**

**Westinghouse letter CAW-01-1435**



Westinghouse Electric Company, LLC

Box 355  
Pittsburgh Pennsylvania 15230-0355

January 24, 2001

CAW-01-1435

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

Attention: Mr. Samuel J. Collins

**APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE**

Subject: South Texas Project Nuclear Operating Company, South Texas Unit 2 Nuclear Plant

- Addendum to WCAP-15163, Rev. 1, South Texas Unit 2; 3V Alternate Repair Criteria Application of Bounding Analyses and Tube Expansions
- Addendum to WCAP-15164, Rev. 1, South Texas Unit 2; 3V Alternate Repair Criteria Application of Bounding Analyses and Tube Expansions (Non-Proprietary)

Dear Mr. Collins:

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-01-1435 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, 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 10 CFR Section 2.790 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by South Texas Project Nuclear Operating Company.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-01-1435 and should be addressed to the undersigned.

Very truly yours,

H. A. Sepp, Manager  
Regulatory and Licensing Engineering

Enclosures

cc: S. Bloom/NRR/OWFN/DRPW/PDIV2 (Rockville, MD) 1L

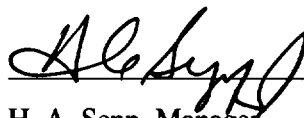
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared H., A. Sepp, 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:



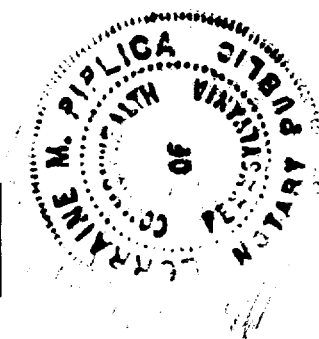
H. A. Sepp, Manager

Regulatory and Licensing Engineering

Sworn to and subscribed  
before me this 29<sup>th</sup> day  
of January, 2008



Notary Public



- (1) I am Manager, Regulatory and Licensing Engineering, in the Nuclear Services Business Unit of the 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 rulemaking proceedings, and am authorized to apply for its withholding on behalf of the Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10CFR Section 2.790 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 the Westinghouse Electric Company LLC 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 2.790 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 which 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 10CFR Section 2.790, 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 Addendum to WCAP-15163, Rev. 1, South Texas Unit 2; 3V Alternate Repair Criteria Application of Bounding Analyses and Tube Expansions” (Proprietary) for the South Texas Unit 2 Nuclear Plant being transmitted by the South Texas Project Nuclear Operating Company letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk, Attention: Mr. Samuel J. Collins. The proprietary information submitted for use by South Texas Project Nuclear Operating Company for the South Texas Unit 2 Nuclear Plant is expected to be applicable in other licensee submittals.

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

- (a) Provide the technical basis for a proposed Alternate Report Criteria (ARC) for outer diameter stress corrosion cracking occurring at the tube support plate (TSP) intersections in the South Texas Unit 2 steam generators.
- (b) Provide additional information to support the 3V ARC, specifically with regard to the conservatism of the hydraulic loading on which the TSP displacements are based,
- (c) Document the added conservatism provided by expanding a number of tubes at each of three hot leg TSPs to lock the TSPs in place.

Further this information has substantial commercial value as follows:

- (a) Westinghouse's plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation.
- (b) Westinghouse can sell support and defense of this information to its customers in the licensing process.

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 licensing support documentation 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 design programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended for developing testing and analytical methods and performing tests.

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 2.790 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) contained within parentheses 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 2.790(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 2.790 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 3**

**Addendum to WCAP-15164, Rev. 1**

**(Non-Proprietary)**