

South Carolina Electric and Gas Company
Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

NND-16-0455

Enclosure 3

Proposed Changes to Licensing Basis Documents
(LAR 16-18)

Note:

Added text is shown as bold Blue Underline
Deleted text is shown as bold ~~Red Strikethrough~~
Omitted text is shown as three asterisks (* * *)

(This Enclosure consists of 3 pages, including this cover page)

UFSAR Subsection 3.8.4.5.2 “Supplemental Requirements for Steel Structures” - Revise to add Tier 2* text after the existing Tier 2 text in this subsection, as shown below:

(NOTE: Text is also proposed for incorporation in this location (after the existing Tier 2 UFSAR Subsection 3.8.4.5.2) by LAR 16-011 [ADAMS Accession Nos. ML16267A163.] The order of incorporation of either change, following NRC approval, will not impact review, approval, or incorporation of the change in the other LAR.)

* * *

- Sections Q1.24 and Q1.25.10 are supplemented as follows:

Shop painting is in accordance with Section M of the Manual of Steel Construction, Load and Resistance Factor Design, First Edition. Exposed areas after installation are field painted in accordance with the applicable portion of Chapter M of the Manual of Steel Construction, Load and Resistance Factor Design, First Edition.] See Subsection 6.1.2.1 for additional description of the protective coatings.*

- [In Section Q1.26.2.2, for the non-conforming partial penetration welds associated with reinforcement bar size #9 and size #11 C3J couplers installed on carbon steel embedment plates under CA20 at V.C. Summer Unit 2 and Unit 3 and under CA01 at Unit 2 that did not undergo non-destructive examination at the time of fabrication, the strength and quality of the welds is demonstrated through non-destructive examination and static tension testing of portions of the uninstalled production and through visual examination of the total production population as follows:

- Visual Examination: Coupler welds from the production fabrication populations underwent visual examination by the manufacturer. The manufacturer’s visual examinations provided satisfactory results.
- Static Tension Testing: Weldable coupler connections of reinforcing bar to structural steel shall develop 125% of the specified yield strength of the bar in accordance with ACI 349-01, Section 12.14.3.4. The mechanical connection strength requirement is applied to the weld to demonstrate that the coupler weld is stronger than the reinforcing bar strength requirement, thereby satisfying provisions for design limits outlined in AISC N690-1994. To determine that the populations of #9 sized and #11 sized C3J coupler welds on carbon steel embedment plates is adequate in the ability to perform their intended design function, static tension testing of portions of the uninstalled populations of welds is evaluated experimentally in two phases.

Phase I: Static tension testing has been performed on a total of four #9 sized and two #11 sized couplers. The static tension testing results were evaluated to obtain the 90/95% confidence interval break strength. The Phase I test results demonstrate that the 90/95% confidence interval break strength exceeds 125% of the specified yield strength of the reinforcing bar and demonstrate that the rebar or thread is the weak link in the mechanical connection.

UFSAR Subsection 3.8.4.5.2 (cont.)

Phase II: Testing was performed to investigate the strength of the coupler weld. A total of 33 samples were tested, 30 #9 sized couplers and 3 #11 sized couplers. The statically-tested samples failed within the coupler body, and demonstrate that the production PJP with fillet weld is stronger than the coupler body. To confirm that the statically-tested sample population is representative of the installed populations of coupler welds, the test sample population considered factors such as sample size, weld process, semi-automatic processes, human performance factors, welding procedure specification, non-destructive examination, filler metal, and coupler material.

Safety margin was calculated using the nominal tensile strength and the 90/95% confidence interval test coefficient based on the test samples and is penalized by lower bound failure modes and a finite sample size. The safety margin, or Factor of Safety (FoS), was calculated against both the 125% yield strength of the rebar and against the system strength (i.e., weakest link of the system, rebar or thread). The minimum safety margin with respect to the 125% yield strength of the rebar was calculated to be 2.08 for the #9 sized couplers and 2.19 for the #11 sized couplers. The minimum safety margin with respect to the system strength was calculated to be 1.42 for the #9 sized couplers and 1.59 for the #11 sized couplers.

- Non-destructive examination: Magnetic particle examination was performed on 10% of the total population of coupler welds from the uninstalled production population of carbon steel embedment plates. The magnetic particle examinations provided satisfactory results.]*

South Carolina Electric and Gas Company
Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3

NND-16-0455

Enclosure 4

Affidavit from South Carolina Electric and Gas Company for
Withholding Under 10 CFR 2.390

(LAR 16-18)

(This Enclosure consists of 3 pages, including this cover page)

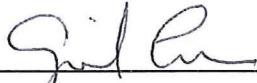
Affidavit of April Rice for LAR 16-18, NND-16-0455

1. My name is April Rice. I am the Manager, Nuclear Licensing, for South Carolina Electric & Gas Company (SCE&G). I have been delegated the function of reviewing proprietary information sought to be withheld from public disclosure and am authorized to apply for its withholding on behalf of SCE&G.
2. I am making this affidavit on personal knowledge, in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations, and in conjunction with SCE&G's filing on dockets 52-027 and 52-028, Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, Request for License Amendment LAR 16-18. I have personal knowledge of the criteria and procedures used by SCE&G to designate information as a trade secret, privileged or as confidential commercial or financial information.
3. Based on the reason(s) at 10 CFR 2.390(a)(4), this affidavit seeks to withhold from public disclosure Enclosure 2 of SCE&G letter NND-16-0455, LAR 16-18.
4. The following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - a. The information sought to be withheld from public disclosure has been held in confidence by SCE&G and Westinghouse Electric Company.
 - b. The information is of a type customarily held in confidence by SCE&G and Westinghouse Electric Company and not customarily disclosed to the public.
 - c. The release of the information might result in the loss of an existing or potential competitive advantage to SCE&G and/or Westinghouse Electric Company.
 - d. Other reasons identified in Enclosure 5 of SCE&G letter NND-16-0455, LAR 16-18 and those reasons are incorporated here by reference.
5. Additionally, release of the information may harm SCE&G because SCE&G has a contractual relationship with the Westinghouse Electric Company regarding proprietary information. SCE&G is contractually obligated to seek confidential and proprietary treatment of the information.
6. 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.
7. To the best of my knowledge and belief, 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.

NND-16-0455

Enclosure 4 – Affidavit from South Carolina Electric and Gas Company
(LAR 16-18)

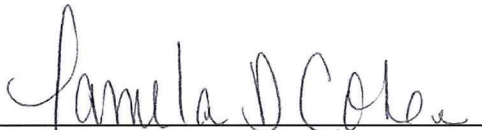
I declare under penalty of perjury that the foregoing is true and correct.


April Rice

Executed on 10-27-16
Date

SWORN and SUBSCRIBED to before me on this 27th day of October, 2016 in

Fairfield county, South Carolina


Notary Public

My Commission Expires: April 15, 2023



**South Carolina Electric and Gas Company
Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3**

NND-16-0455

Enclosure 5

**Westinghouse Authorization Letter CAW-16-4482, Affidavit,
Proprietary Information Notice and Copyright Notice**

(LAR 16-18)

(This Enclosure consists of 14 pages, including this cover page)

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information Notice and Copyright Notice
(LAR 16-18)



Westinghouse Electric Company
New Plants and Major Projects
1000 Westinghouse Drive, Building 1
Cranberry Township, Pennsylvania 16066
USA

Document Control Desk
U S Nuclear Regulatory Commission
Washington, DC 20852-2738

Direct tel: (412) 374-3382
Direct fax: (724) 940-8505
e-mail: russpa@westinghouse.com
Proj letter: VSL_VSG_000455

CAW-16-4482

September 29, 2016

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Transmittal of License Amendment Request VSG-FSAR-GLN-008, Revision 0 (Westinghouse LAR-140, SCE&G LAR 16-18) (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-16-4482 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 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by South Carolina Electric & Gas Company.

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-16-4482, and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

Very truly yours,

A handwritten signature in cursive script, reading "Paul A. Russ".

Paul A. Russ, Director

Licensing & Regulatory Support

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information Notice and Copyright Notice
(LAR 16-18)



Westinghouse Electric Company
New Plants and Major Projects
1000 Westinghouse Drive, Building 1
Cranberry Township, Pennsylvania 16066
USA

Enclosures to CAW-16-4482

1. AFFIDAVIT CAW-16-4482
2. PROPRIETARY INFORMATION NOTICE and COPYRIGHT NOTICE
3. South Carolina Electric & Gas Company, Letter for Transmittal to the NRC
4. VSG-FSAR-GLN-008, Revision 0, "AP1000 Licensing Applicability Determination and 10 CFR 50.59 / 10 CFR 52 Appendix D Section VIII Screening: CAPAL Issue ID 100409799; SC-4; LAR-140"

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information
Notice and Copyright Notice
(LAR 16-18)

ENCLOSURE 1

CAW-16-4482

AFFIDAVIT

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, Paul A. Russ, am 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 my knowledge, information, and belief.

A handwritten signature in black ink, appearing to read "Paul A. Russ", is written over a horizontal line.

Paul A. Russ, Director
Licensing & Regulatory Support

- (1) I am Director, Licensing & Regulatory Support, 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 constitute Westinghouse policy and provide 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.
- (iii) 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.
- (iv) 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.
- (v) 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.
- (vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in VSG-FSAR-GLN-008, Revision 0, “AP1000 Licensing Applicability Determination and 10 CFR 50.59 / 10 CFR 52 Appendix D Section VIII Screening: CAPAL Issue ID 100409799; SC-4; LAR-140,” for submittal to the Commission, being transmitted by South Carolina Electric & Gas Company letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse is that associated with the NRC review of the License Amendment Request VSG-FSAR-GLN-008, Revision 0 (Westinghouse LAR-140, SCE&G LAR 16-18), and may be used only for that purpose.

- (a) This information is part of that which will enable Westinghouse to:
 - (i) Manufacture and deliver products to utilities based on proprietary designs.
- (b) Further this information has substantial commercial value as follows:
 - (i) Westinghouse plans to sell the use of similar information to its customers for the purpose of licensing of new nuclear power stations.
 - (ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.
 - (iii) 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 technical evaluation justifications 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.

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information
Notice and Copyright Notice
(LAR 16-18)

ENCLOSURE 2

PROPRIETARY INFORMATION NOTICE and COPYRIGHT NOTICE

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.

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information
Notice and Copyright Notice
(LAR 16-18)

ENCLOSURE 3

South Carolina Electric & Gas Company, Letter for Transmittal to the NRC

South Carolina Electric & Gas Company

Letter for Transmittal to the NRC

The following paragraphs should be included in your letter to the NRC Document Control Desk:

Enclosed are:

1. One copy of VSG-FSAR-GLN-008, Revision 0, “*AP1000* Licensing Applicability Determination and 10 CFR 50.59 / 10 CFR 52 Appendix D Section VIII Screening: CAPAL Issue ID 100409799; SC-4; LAR-140”

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-16-4482, accompanying Affidavit, Proprietary Information Notice, and Copyright Notice.

As Item 1 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.

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Westinghouse Affidavit should reference CAW-16-4482 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, 1000 Westinghouse Drive, Building 3 Suite 310, Cranberry Township, Pennsylvania 16066.

NND-16-0455

Enclosure 5 – Westinghouse Authorization Letter CAW-16-4482, Affidavit, Proprietary Information
Notice and Copyright Notice
(LAR 16-18)

ENCLOSURE 4

VSG-FSAR-GLN-008, Revision 0, “*AP1000* Licensing Applicability Determination and 10 CFR 50.59 /
10 CFR 52 Appendix D Section VIII Screening: CAPAL Issue ID 100409799; SC-4; LAR-140”