



Program Management Office  
1000 Westinghouse Drive, Suite 380  
Cranberry Township, PA 16066

Project Number 694

September 12, 2013

OG-13-313

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

Subject: PWR Owners Group  
**Transmittal of the PWROG Meeting Summary and Presentation Material  
Pertaining to the August 20, 2013 PWROG-NRC Meeting to Address NRC  
Questions Regarding SSPS Cards, PA-LSC-1170R0**

The purpose of this letter is to submit the PWR Owners Group meeting summary pertaining to the August 20, 2013 meeting between the PWROG and NRC staff regarding solid state protection system (SSPS) cards and the staff's questions related to the 50.59 screenings.

Also enclosed is the PWROG meeting presentation material that was used during the PWROG-NRC meeting as well as the Westinghouse authorization letter CAW-13-3807, accompanying affidavit, Proprietary Information Notice, and Copyright Notice.

The enclosed presentation material and meeting summary contain information proprietary to Westinghouse Electric Company LLC; it is supported by an affidavit signed by Westinghouse, 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 this 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 information listed above or supporting Westinghouse affidavit should reference CAW-13-3807 and should be addressed to Mr. James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company LLC, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

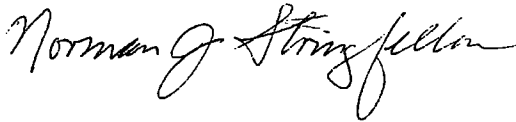
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Correspondence related to this transmittal should be addressed to:

Mr. W. Anthony Nowinowski, Program Manager  
PWR Owners Group, Program Management Office  
Westinghouse Electric Company  
1000 Westinghouse Drive  
Cranberry Township, PA 16066

If you have any questions, please do not hesitate to contact me at (410) 495-6510 or Mr. W. Anthony Nowinowski, Program Manager of the PWR Owners Group, Program Management Office at (412) 374-6855.

Sincerely yours,



Jack Stringfellow, Chairman  
PWR Owners Group

NJS:CH:rfn

cc: PWROG Licensing Subcommittee (Participants of PA-LSC-1170R0)  
PWROG PMO  
PWROG Steering and Management Committee  
S. Greenlee, Exelon  
J. Gresham, Westinghouse  
D. Olinski, Westinghouse  
J. Andrachek, Westinghouse  
J. Moorehead, Westinghouse  
T. Harbaugh, Westinghouse  
J. Rowley, US NRC  
P. Hiland, US NRC

Enclosure 1: Summary of the August 20, 2013 PWROG-NRC Meeting to Discuss the New SSPS Boards (Non-Proprietary)  
Enclosure 2: Design and Testing of the Replacement SSPS Boards (Proprietary)  
Enclosure 3: Application for Withholding, CAW-13-3807 (Non-Proprietary) with accompanying Affidavit, Proprietary Information Notice and Copyright Notice

### **Summary of the August 20, 2013 PWROG-NRC Meeting to Discuss the New SSPS Boards**

On August 20, 2013, the PWROG provided a summary of the issues associated with the new SSPS boards that have been identified to date (simple logic versus complex logic, board replacement versus system upgrade, and validation of software development tools versus exhaustive testing), and the PWROG position with respect to those issues. The NRC staff provided feedback on these issues, and additional questions were raised during the meeting. The purpose of providing this summary was, and the accompanying discussion at the meeting was to ensure that the PWROG has a clear understanding of all the issues associated with the new SSPS boards.

Westinghouse provided five documents to the NRC for information only, on August 15, 2013, prior to the August 20, 2013 meeting. The NRC had some questions regarding this information and requested that additional supplementary, clarifying information be provided in response to these NRC questions. Westinghouse will prepare this additional, supplementary information and submit it to the NRC for information only.

The NRC stated that the generic Operability Evaluation that is being prepared should address various new SSPS board installation scenarios, i.e., some new boards in one train, all new boards in one train, all new boards in both trains, etc., and also include any Operating Experience associated with any failures of the new SSPS boards. The Staff agreed to work with the PWROG to review the Operability Evaluation, to ensure that it addressed their concerns.

Pat Hiland was going to discuss the SSPS issue with Dan Dorman on Wednesday, August 21, 2013. The NRC will consider and determine if there is a process to work with the PWROG on the "generic" 10 CFR 50.59 Screen/Evaluation that is being prepared. This process may assist the Regional Inspectors in their reviews of the plant specific 10 CFR 50.59 Screens/Evaluations.

If the "generic" 10 CFR 50.59 Screen/Evaluation concludes that prior NRC approval is required to install the new SSPS boards, the Enforcement Guidance Memorandum (EGM) process could potentially be used. This process would provide time for the development, submittal, and NRC approval of a Topical Report, and allow the plants that have installed the new SSPS boards to realize the safety benefits of the new SSPS boards.

A summary of the issues associated with the new SSPS design boards that were discussed at the August 20, 2013 PWROG-NRC meeting are discussed below.

1. Regarding CPLD operation and testing, provide a description of how the CPLD logic was implemented and how the function blocks work. Additionally, discuss what analysis and/or testing was performed to verify the logic that was

implemented within the CPLD (at the chip level). The differences between the CPLD and FPGA devices should be discussed.

2. The Staff acknowledged that 100% testing of the chip may not be necessary. However, it is necessary to test all combinations and all possible sequences of combinations. Have all of the potential ways that this CPLD could malfunction been addressed? How do the design and testing address this? Provide detail on why the testing protocol was fully bounding for all postulated faults. One way to address this is to show all of the active pathways, and how they were tested, and if an internal gate failed, that it would be identified by a self-test.
3. Provide an expanded discussion on the new features of the SSPS boards (e.g., continuous self-test, card edge LED indications and Single Point Vulnerability (SPV) elimination) and why these features do not impact the original functions performed by the SSPS boards. Provide an expanded discussion on the three boards that process safety signals that were tested, and any impact of the other five boards that do not process safety signals.
4. Since there is no clear definition of a “system upgrade” versus a “board replacement,” provide an expanded discussion that:
  - a. Clearly discusses why replacing the SSPS boards is not a system upgrade.
  - b. Addresses common cause failures (CCFs), and how the board design and testing addressed CCFs.
5. Since a CPLD is being used to implement the original logic functions, provide a discussion on how the current Actuation Logic Test Surveillance Requirement required by Technical Specifications 3.3.1, “RTS Instrumentation,” and 3.3.2, “ESFAS Instrumentation,” tests the same functions, to verify operability. Additionally, discuss how the SSPS semi-automatic tester covers all possible logic combinations with the new SSPS boards installed.
6. Describe the process that was used by the third party vendor for the software design under the Westinghouse Appendix B program. Compare this process to EPRI Report TR 106439 on commercial grade dedication.

7. Regarding the Failure Modes and Effects Analysis (FMEA) and CCF evaluation that was performed on the three SSPS boards that process safety signals, discuss whether credit was taken for the continuous self test feature for any of the CCF evaluations.
  
8. Describe other potential environmental impacts (temperature, noise, etc.) on the CPLD that was tested during new SSPS board design and qualification. Was the introduction of faults into the software considered and addressed?



Westinghouse Electric Company  
Engineering, Equipment and Major Projects  
1000 Westinghouse Drive  
Cranberry Township, Pennsylvania 16066  
USA

U.S. Nuclear Regulatory Commission  
Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

Direct tel: (412) 374-4643  
Direct fax: (724) 720-0754  
e-mail: greshaja@westinghouse.com

CAW-13-3807

September 12, 2013

APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE

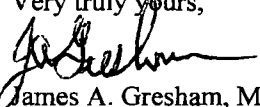
Subject: OG-13-313, Enclosure 2, "Design and Testing of the Replacement SSPS Boards" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced presentation material is further identified in Affidavit CAW-13-3807 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.

The subject document was prepared and classified as Westinghouse Proprietary Class 2. Westinghouse requests that the document be considered proprietary in its entirety. As such, a non-proprietary version will not be issued.

Accordingly, this letter authorizes the utilization of the accompanying Affidavit by Pressurized Water Reactor Owners Group (PWROG).

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse Affidavit should reference CAW-13-3807 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 310, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,  
  
James A. Gresham, Manager  
Regulatory Compliance

Enclosures

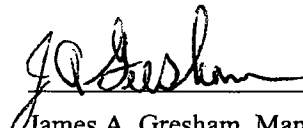
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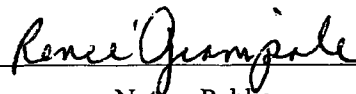
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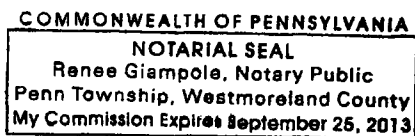
COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared James A. Gresham, 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:

  
James A. Gresham, Manager  
Regulatory Compliance

Sworn to and subscribed before me  
this 12th day of September 2013

  
Notary Public



- (1) I am Manager, Regulatory Compliance, in Engineering, Equipment and Major Projects, 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.
- (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.
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- (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 OG-13-313, Enclosure 2, "Design and Testing of the Replacement SSPS Boards (Proprietary), for submittal to the Commission, being transmitted by PWROG letter OG-13-313 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 Westinghouse's request for NRC review only of the PWROG Meeting Material enclosed with OG-13-313, and may be used only for that purpose.

- (a) This information is part of that which will enable Westinghouse to:
  - (i) Obtain NRC review of the PWROG meeting material pertaining to the August 20, 2013 PWROG-NRC Meeting to Address NRC Questions Regarding SSPS Cards, PA-LSC-1170R0.
  - (ii) Support PWROG submittal of a generic 10 CFR 50.59 Evaluation for SSPS new design circuit board installation.
  
- (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 supporting operating plants that use the solid state protection system to end of plant life.
  - (ii) Westinghouse can sell support and defense of extending SSPS system operation until end of plant life.
  - (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 SSPS technical support 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 is the proprietary version of a document furnished to the NRC in connection with requests for generic and/or plant-specific review and approval. The document is to be considered proprietary in its entirety.

### **COPYRIGHT NOTICE**

The report transmitted herewith bears a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in this report which is 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. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.

PWR Owners Group

Letter for Transmittal to the NRC

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

Enclosed is:

1. OG-13-313, Enclosure 2 "Design and Testing of the Replacement SSPS Boards" (Proprietary)

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-13-3807, accompanying Affidavit, Proprietary Information Notice, and Copyright Notice.

The subject document was prepared and classified as Westinghouse Proprietary Class 2. Westinghouse requests that the document be considered proprietary in its entirety. As such, a non-proprietary version will not be issued.

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-13-3807 and should be addressed to James A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 310, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.