



Program Management Office  
102 Addison Road  
Windsor, CT 06095

WCAP-17100-P/NP, Revision 1  
Project Number 694

March 4, 2010

OG-10-77

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

Subject: PWR Owners Group  
**Submittal of WCAP-17100-P/NP, Revision 1, "PRA Model for the Westinghouse Shut Down Seal," PA-RMSC-0499**

References:

1. "PWR Owners Group Submittal of WCAP-17100-P/NP, Revision 0, "PRA Model for the Westinghouse Shut Down Seal," PA-RMSC-0499," OG-09-282, dated July 17, 2009.
2. NRC Letter, Jonathan Rowley of NRR to Anthony Nowinowski of the PWR Owners Group Program Management Office, "Request for additional information Re: Pressurized Water Reactor Owners Group Topical Report WCAP-17100-P/NP, Revision 0, "PRA Model for the Westinghouse Shut Down Seal" (TAC NO. ME1785), November 30, 2008
3. "PWR Owners Group Responses to the NRC Request for Additional Information (RAI) on Topical Report (TR) WCAP-17100-P/NP, Revision 0, "PRA Model for the Westinghouse Shut Down Seal" (PA-RMSC-0499)," OG-10-20, dated January 27, 2010

The purpose of this letter is to submit the Pressurized Water Reactor Owners Group (PWROG) Topical Report (TR) WCAP-17100-P/NP, Revision 1, in accordance with the Nuclear Regulatory Commission (NRC) TR program for review and acceptance for referencing in regulatory actions. WCAP-17100-P/NP, Revision 1 includes changes to WCAP-17100-P/NP, Revision 0 based on responses to requests for additional information (RAIs) and previously discussed with NRC during a February 24, 2010 conference call.

DO48  
NRO

Designated as original  
per Jonathan Rowley  
(Jonathan Rowley)

Also, Enclosure 3 is Westinghouse authorization letter AW-10-2765, accompanying affidavit, Proprietary Information Notice, and Copyright Notice.

WCAP-17100-P, Revision 1, contains 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 AW-10-2765 and should be addressed to Mr. J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

In support of the Office of Nuclear Reactor Regulation’s prioritization efforts, the following prioritization scheme matrix was completed and justification for the points assigned is provided below.

**WCAP-17100-P/NP, Revision 1, “PRA Model for the Westinghouse Shut Down Seal”**

<b>TR Prioritization Scheme Matrix</b>			
*Industry input on shaded areas was not requested.			
<b>Factors</b>	<b>Select the Criteria That the TR satisfies</b>	<b>Points Assigned For Each Criteria</b>	<b>Total Points (if points are cumulative, total them for each factor in this column)</b>
TR Classification (Points are cumulative)	Generic Safety Issue	6	3 (RCP seal behavior is a continuing issue in regulatory interactions.)
	Emergent Technical Issue	3	
	Standard TR	1	
Applicability (Points are not cumulative)	Industry-wide Implementation	3	2 (TR is applicable to all plants with Westinghouse RCP seals.)
	Applicable to entire groups of licensees (BWROG, PWROG, BWRVIP, etc.)	2	
	Applicable only to partial groups of licensees	1	
Specialized Resource Availability (Points are cumulative)	NRC staff expertise is readily available (The NRC staff will evaluate this criteria)	1.5	0.5 (At least one PWROG plant has indicated that they plan to install the Westinghouse RCP Shut Down Seals and credit the seals in risk-informed processes in the Spring of 2010.)
	Technical data is available/readily accessible (The NRC staff will evaluate this criteria)	1	
	TR approval is needed by a certain date to support a licensing activity. Explain when and why?	0.5	
Total Points (Add the total points from each factor and total here):			5.5

**TR Classification:** The modeling of the behavior of Westinghouse Reactor Coolant Pump (RCP) seals for postulated plant events that result in a loss of all RCP seal cooling has been a continuing issue in regulatory interactions with the industry. The NRC has previously reviewed RCP seal behavior as described in WCAP-15603-A, Rev. 1 “WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse PWRs” and NRC Information Notice 2005-14, “Fire

Protection Findings On Loss Of Seal Cooling To Westinghouse Reactor Coolant Pumps.” The installation of the Westinghouse Shut Down Seal changes the seal behavior for these events as described by the Probabilistic Risk Assessment and deterministic models in this topical report. NRC review and approval of these models will resolve many issues related to the seal behavior and greatly reduce future interactions and resource requirements between the industry and the NRC.

**Applicability:** This Topical Report is applicable to all PWROG members with Westinghouse reactor coolant pumps and includes all Westinghouse Nuclear Steam Supply System (NSSS) plants plus TMI Unit 1.

**Specialized Resource Availability:** At least one PWROG plant has indicated that they plan to install the Westinghouse RCP Shut Down Seals and credit the seals in risk-informed processes in the Spring of 2010. Several other PWROG plants have indicated interest in installing the Shut Down seals later in 2010. This Topical Report is being submitted to the NRC for review and approval in order to conserve utility and NRC resources in reviewing PRA models and deterministic models (e.g., Appendix R to 10 CFR 50) used for regulatory interactions.

This letter transmits four copies of WCAP-17100-P, Revision 1 (Enclosure 1) and two copies of WCAP-17100-NP Revision 1 (Enclosure 2). Approval of the enclosed Topical Report does not require a change to the standard Technical Specifications.

Correspondence related to this transmittal should be addressed to:

Mr. W. Anthony Nowinowski, Program Manager  
PWR Owners Group, Program Management Office  
Westinghouse Electric Company  
Mail Stop ECE 5-16  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230-0355

If you have any questions, please do not hesitate to contact me at (704) 382-8619 or Mr. W. Anthony Nowinowski, Program Manager of the PWR Owners Group, Program Management Office at (412) 374-6855.

Sincerely yours,

 for M. Arey

Melvin L. Arey, Chairman  
PWR Owners Group

MLA:BSG:las

cc: PWROG Management Committee  
PWROG Risk Management Subcommittee  
PWROG Licensing Subcommittee  
PWROG Steering Committee  
PWROG PMO  
J. Gresham, Westinghouse  
J. Hodgson, Westinghouse  
B. Howard, Westinghouse  
B. Kunkel, Westinghouse  
M. Lucci, Westinghouse  
R. Lutz, Westinghouse  
D. Olinksi, Westinghouse  
M. Skocik, Westinghouse  
J. Rowley, US NRC

- Enclosure 1. Four copies of WCAP-17100-P, Revision 1, "PRA Model for the Westinghouse Shut Down Seal" (Proprietary)
- Enclosure 2: Two copies of WCAP-17100-NP, Revision 1, "PRA Model for the Westinghouse Shut Down Seal" (Non-Proprietary)
- Enclosure 3: One copy of the Application for Withholding, AW-10-2765 (Non-proprietary) with accompanying affidavit, Proprietary Information Notice and Copyright Notice.



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AW-10-2765

March 4, 2010

APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE

Subject: WCAP-17100-P, Revision 1, "PRA Model for the Westinghouse Shut Down Seal"  
(Proprietary)

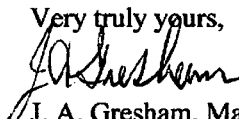
Reference: Letter from M. L. Arey to Document Control Desk, OG-10-77, dated March 4, 2010.

The Application for Withholding Proprietary Information from Public Disclosure 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 AW-10-2765 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 AW-10-2765 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

Very truly yours,  
  
J. A. Gresham, Manager  
Regulatory Compliance and Plant Licensing

Enclosures

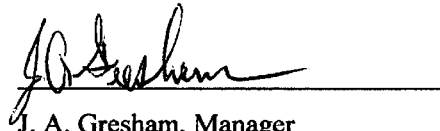
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

SS

COUNTY OF ALLEGHENY:

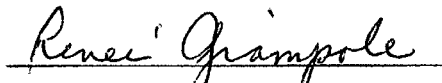
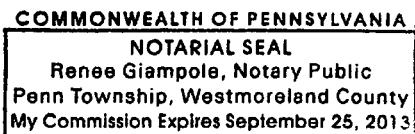
Before me, the undersigned authority, personally appeared J. A. Gresham, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit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



J. A. Gresham, Manager

Regulatory Compliance and Plant Licensing

Sworn to and subscribed before me  
this 4th day of March 2010

  
Notary Public

- (1) I am Manager, Regulatory Compliance and Plant 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 WCAP-17100-P, Revision 1, "PRA Model for the Westinghouse Shut Down Seal" (Proprietary), dated February 2010, for submittal to the Commission, being transmitted by the Pressurized Water Reactors Owners Group (PWROG) in letter, OG-10-77, and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted by Westinghouse for the PWROG is expected to be applicable in other licensee submittals in response to certain NRC requirements for justification of models describing the behavior of the Westinghouse Shut Down Seal in risk-informed regulatory applications and deterministic licensing basis analyses, and may be used only for that purpose.

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

- (a) Develop plant specific Probabilistic Risk Assessment and deterministic models to describe the behavior of the Westinghouse Shut Down Seal for postulated plant events that result in a loss of all RCP seal cooling.
- (b) Expediently modify risk-informed regulatory applications and gain any required NRC approval of those changes.
- (c) Expediently modify licensing basis analyses and gain any required NRC approvals of those changes.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for purposes of developing Probabilistic Risk Assessment (PRA) models for risk-informed regulatory applications and licensing basis models for plants installing the Shut Down Seal.
- (b) Westinghouse can sell support and defense of results and conclusions of the subject WCAP.
- (c) The information requested to be withheld reveals the distinguishing aspects of a new technology and 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 product, calculational models, 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.