

Attachment 5 to
W3F1-2015-0038
PWROG-15054-NP

PWROG-15054-NP
Revision 1

Waterford Unit 3 RAI Response for Applicant Action Items 1, 2, and 7

PA-MSC-0983, Revision 1, Task 8

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Reactor Internals Design and Analysis II

June 2015

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Primary Systems Design and Repair

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TABLE OF CONTENTS

1	BACKGROUND	1-1
2	RESPONSE TO RAI 4	2-1
3	REFERENCES.....	3-1

1 BACKGROUND

As requested by Entergy Operations, Inc. for Waterford Steam Electric Station, Unit 3, Westinghouse Electric Company is providing this letter report under PA-MS-0983, Task 8 [1]. This information is in regard to a Request for Additional Information (RAI) from the U.S. Nuclear Regulatory Commission [2]:

On February 5, 2005, Entergy Operations Inc., the licensee, as part of its implementation of the extended power uprate, made a commitment to submit an aging management program (AMP) for the reactor vessel internals (RVI) components at Waterford Steam Electric Station, Unit 3 (WF3). Consistent with this commitment, by letter dated December 16, 2013, Entergy submitted an AMP for the RVI components at WF3. The Electric Power Research Institute's technical report MRP-227-A, "Materials Reliability Program: Pressurized Water Reactor (PWR) Internals Inspection and Evaluation Guidelines," December 2008, and its supporting reports were used as the technical bases for developing WF3's AMP.

After reviewing your request, the U.S. Nuclear Regulatory Commission staff has determined that additional information is required to complete the review. During a phone call on September 4, 2014, the licensee agreed to provide the additional information requested on two schedules. RAI-1 and RAI-3 are to be provided within 90 days of receipt of this letter and RAI-2 and RAI-4 are to be provided by May 31, 2015.

This document only supplies the response to RAI 4. RAIs 1, 2, and 3 are covered in other documents. Westinghouse has provided their response to RAI 4, included here in Section 2.

Revision 1 of this document provides clarification to the response given in Section 2.

2 RESPONSE TO RAI 4

Description of RAI 4:

As discussed in Section 3.3.7 of Revision 1 to the safety evaluation for MRP-227 dated December 16, 2011 (ADAMS Accession No. ML11308A770), Action Item 7 requires that the licensees of Westinghouse reactors develop plant-specific analyses to be applied for their facilities to demonstrate that lower support column cast austenitic stainless steel, (CASS) bodies will maintain their function during the extended period of operation. However, licensees are observing degradation in CASS bodies during the current operating license. MRP-227-A Table 3-2 (Final disposition of Combustion Engineering internals) classifies CASS lower support columns as Primary Components based on susceptibility to irradiation embrittlement (IE) and irradiation assisted stress-corrosion cracking and thermal embrittlement (TE). After further review of the existing literature data for the threshold limits for IE and TE of CASS materials, the NRC staff developed a new position for screening of CASS materials for combined IE and TE. The bases for the staff's new threshold limits are described in the document "NRC position on Aging Management of CASS Reactor Vessel Internal Components," at ADAMS Accession No. ML14163A112.

To enable an assessment of the adequacy of aging management for the lower support columns in response to TE and IE, the NRC staff requests that the licensee address Action Item 7 of the December 16, 2011, safety evaluation for Revision 1 of MRP-227-A under the current operating license.

Response to RAI 4:

Lower support columns fabricated and installed at Waterford Unit 3 per as-built drawing records are wrought stainless steel and are not cast austenitic stainless steel. Therefore, Action Item 7 for cast austenitic stainless steel materials is not applicable to the Waterford Unit 3 support columns.

3 REFERENCES

- 1 PWROG Project Authorization, PA-MSC-0983, Rev. 1, "Support for Applicant Action Items 1, 2, and 7 from the Final Safety Evaluation on MRP-227, Revision 0."
- 2 U.S. NRC Letter, "Waterford Steam Electric Station, Unit 3 – Request for Additional Information Regarding the Reactor Vessel Internals Aging Management Program (TAC No. MF3247)," October 21, 2014 (NRC ADAMS Accession No. ML14232A023).

Attachment 6 to

W3F1-2015-0038

Affidavit



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CAW-15-4197

June 1, 2015

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

Subject: PWROG-15039-P, Rev. 0, "Waterford Unit 3 Summary Report for the Fuel Design / Fuel Management Assessments to Demonstrate MRP-227-A Applicability" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-15-4197 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 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-15-4197 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, appearing to read "J. A. Gresham".

James A. Gresham, Manager

Regulatory Compliance

June 1, 2015

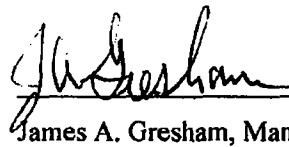
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, James A. Gresham, 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.



James A. Gresham, Manager

Regulatory Compliance

- (1) I am Manager, Regulatory Compliance, 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 PWROG-15039-P, Rev. 0, "Waterford Unit 3 Summary Report for the Fuel Design / Fuel Management Assessments to Demonstrate MRP-227-A Applicability" (Proprietary), for submittal to the Commission, being transmitted by PWROG letter OG-15-210 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 letter, "Waterford Steam Electric Station, Unit 3 - Request for Additional Information Regarding the Reactor Vessel Internals Aging Management Program (TAC No. MF3247)," ML14232A023 October 21, 2014 and may be used only for that purpose.

- (a) This information is part of that which will enable Westinghouse to:
 - (i) Support reactor vessel internals aging management.
- (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 reactor internals aging management
 - (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.

PROPRIETARY INFORMATION NOTICE

Transmitted herewith is the proprietary and non-proprietary versions of a document furnished to the NRC associated with the NRC letter, "Waterford Steam Electric Station, Unit 3 - Request for Additional Information Regarding the Reactor Vessel Internals Aging Management Program (TAC No. MF3247)," ML14232A023 October 21, 2014 and may be used only for that purpose.

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).

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Entergy Nuclear Operations Inc

Letter for Transmittal to the NRC

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

Enclosed are:

1. PWROG-15039-P, Rev. 0, "Waterford Unit 3 Summary Report for the Fuel Design / Fuel Management Assessments to Demonstrate MRP-227-A Applicability" (Proprietary)
2. PWROG-15039-NP, Rev. 0, "Waterford Unit 3 Summary Report for the Fuel Design / Fuel Management Assessments to Demonstrate MRP-227-A Applicability" (Non-Proprietary)

Also enclosed is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure CAW-15-4197, 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-15-4197 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.