

PROPRIETARY INFORMATION – WITHHOLD UNDER 10 CFR 2.390

**VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261**

July 10, 2012

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

Serial No. 12-420
NL&OS/GDM R0
Docket Nos. 50-280/281
License Nos. DPR-32/37

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
SURRY POWER STATION UNITS 1 AND 2
30-DAY REPORT OF EMERGENCY CORE COOLING SYSTEM (ECCS)
MODEL CHANGES PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.46**

In accordance with 10 CFR 50.46(a)(3)(ii), Dominion hereby submits information regarding an evaluation of fuel pellet thermal conductivity (TCD) with fuel burnup in the Westinghouse Best Estimate Large Break Loss of Coolant Accident (LBLOCA) analysis methodology for Surry Power Station (SPS) Units 1 and 2 and its effect on peak cladding temperature (PCT). SPS Units 1 and 2 use the Westinghouse Automated Statistical Treatment of Uncertainty Method (ASTRUM) LBLOCA evaluation methodology (EM) documented in WCAP-16009-P-A (Reference 1).

Attachment 1 documents 10 CFR 50.46 reporting text and the estimated PCT effect of fuel pellet TCD and peaking factor burndown. The peaking factor burndown used in the TCD evaluation is conservative for current cycles and will be added to the Reload Safety Analysis Checklist for validation as part of the reload design process. Attachment 1 also documents 10 CFR 50.46 reporting text and the estimated effect for the discretionary change regarding the non-uniform pellet radial power profile in HOTSPOT. Revised LBLOCA PCT margin utilization sheets that include PCT estimates for both effects are included in Attachment 1.

To summarize the information in Attachment 1, the calculated PCT for the LBLOCA analyses is changed by +183°F for fuel pellet TCD and by -13°F for the non-uniform pellet radial power profile. The new licensing basis value is 2037°F for SPS Units 1 and 2. When considering the effects of fuel pellet TCD, SPS Units 1 and 2 continue to demonstrate compliance with 10 CFR 50.46(b)(1).

Attachments 2 and 3 to this letter provide additional information regarding the evaluation to determine the estimated effect of fuel pellet TCD and peaking factor burndown and the evaluation for the non-uniform pellet radial power profile. This information provides additional details not specified in Attachment 1. Attachment 2 includes details regarding runset selection as well as run attributes and key results. As some of this information is proprietary, a Westinghouse Proprietary Class 2 and a Westinghouse Non-Proprietary

**Attachment 2 to this letter contains Proprietary Information which is to be withheld from public disclosure under 10 CFR 2.390.
Upon removal of Attachment 2, this letter is decontrolled.**

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Class 3 version of the additional information regarding the evaluation are included as Attachments 2 and 3, respectively.

Evaluation of 10 CFR 50.46 Reporting

The estimated impact from fuel pellet TCD on the SPS ASTRUM LBLOCA EM is +183°F for Units 1 and 2. Since the magnitude of the change in PCT is greater than 50°F for Units 1 and 2, the evaluation of fuel pellet TCD represents a significant change in PCT as defined in 10 CFR 50.46(a)(3)(i).

10 CFR 50.46(a)(3)(ii) requires the licensee to provide a report within 30 days, including a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 10 CFR 50.46. Dominion has reviewed the information provided by Westinghouse and determined that the adjusted LBLOCA PCT values and the manner in which they were derived continue to comply with the requirements of 10 CFR 50.46. Dominion has evaluated the requirement for reanalysis specified in 10 CFR 50.46(a)(3)(ii) and hereby proposes the following schedule for reanalysis.

Before June 15, 2017, Dominion will submit to the NRC for review and approval a LBLOCA analysis that applies NRC-approved methods that include the effects of fuel TCD. The date for the analysis submittal is based on the following milestones, which must be completed in order to perform a revised licensing basis LBLOCA analysis with an NRC-approved ECCS EM that explicitly accounts for TCD:

- 1) NRC approval of a fuel performance analysis methodology that includes the effects of TCD. The new methodology for developing inputs to the LBLOCA EM would replace the current SPS licensing basis methodology in WCAP-15063-P-A, Revision 1 (Reference 2), which is referenced in Section 3.4 of the SPS Updated Final Safety Analysis Report (UFSAR).
- 2) NRC approval of a LBLOCA EM that includes the effects of TCD and accommodates the ongoing 10 CFR 50.46(c) rulemaking process. The new methodology would replace the current licensing basis analysis methodology in WCAP-16009-P-A (Reference 1), which is referenced in Section 14.5 of the SPS UFSAR.

This information satisfies the 30-day reporting requirements of 10 CFR 50.46(a)(3)(ii) for SPS Units 1 and 2.

Proprietary Information

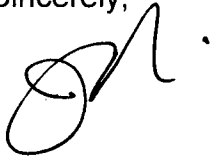
Attachment 2 contains information proprietary to Westinghouse Electric Company LLC. This Classification is supported by a Westinghouse Application for Withholding Proprietary Information from Public Disclosure and the accompanying Affidavit signed by Westinghouse, the owner of the information, which is provided in Attachment 4. 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 10 CFR 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 2.390. Correspondence with respect to the copyright or proprietary aspects of Attachment 2 or the supporting Westinghouse affidavit should reference letter CAW-12-3498 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066. A redacted (non-proprietary) version of Attachment 2 has been included as Attachment 3 for public disclosure.

If you have any questions regarding this submittal, please contact Mr. Gary Miller at (804) 273-2771.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Alan Price', with a stylized flourish at the end.

J. Alan Price
Vice President – Nuclear Engineering

Commitment made in this letter:

1. Before June 15, 2017, Dominion will submit to the NRC for review and approval a LBLOCA analysis that applies an NRC-approved ECCS Evaluation Model that includes the effects of fuel thermal conductivity degradation.

Attachments:

1. 10 CFR 50.46 Reporting Text and Peak Cladding Temperature Margin Utilization Sheets for Surry Units 1 and 2.
2. Additional Information Regarding Evaluation for Surry Units 1 and 2 (VPA / VIR). (Proprietary)
3. Additional Information Regarding Evaluation for Surry Units 1 and 2 (VPA / VIR). (Non-proprietary)
4. Westinghouse Electric Company LLC, Application for Withholding Proprietary Information from Public Disclosure and the Accompanying Affidavit.

References:

1. WCAP-16009-P-A, "Realistic Large-Break LOCA Evaluation Methodology Using the Automated Statistical Treatment Of Uncertainty Method (ASTRUM)," January 2005.
2. WCAP-15063-P-A, Revision 1 with Errata, "Westinghouse Improved Performance Analysis and Design Model (PAD 4.0)," July 2000.

cc: U.S. Nuclear Regulatory Commission - Region II
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ATTACHMENT 1

**10 CFR 50.46 REPORTING TEXT AND PEAK CLADDING TEMPERATURE
MARGIN UTILIZATION SHEETS FOR SURRY UNITS 1 AND 2**

**VIRGINIA ELECTRIC AND POWER COMPANY
(DOMINION)
SURRY POWER STATION UNITS 1 AND 2**

Evaluation of Fuel Pellet Thermal Conductivity Degradation and Peaking Factor Burndown (Non-Discretionary Change)

Background

Fuel pellet thermal conductivity degradation (TCD) and peaking factor burndown were not explicitly considered in the Surry Units 1 and 2 Large Break Loss-of-Coolant Accident (LBLOCA) Automated Statistical Treatment of Uncertainty Method (ASTRUM) analysis with 15x15 Upgrade Fuel. The Nuclear Regulatory Commission (NRC) Information Notice 2011-21 (Reference 1) notified addressees of recent information obtained concerning the impact of irradiation on fuel thermal conductivity and its potential to cause significantly higher predicted peak clad temperature (PCT) in realistic emergency core cooling system (ECCS) evaluation models. This evaluation provides an estimated effect of fuel pellet TCD and peaking factor burndown on the PCT calculation for the ECCS at Surry Units 1 and 2. This change represents a Non-Discretionary Change in accordance with Section 4.1.2 of WCAP-13451 (Reference 2).

Affected Evaluation Model

2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM (Reference 3)

Estimated Effect

A quantitative evaluation as discussed in Reference 4 (excluding offsetting effects and the non-uniform radial power profile) was performed to assess the PCT effect of fuel TCD and peaking factor burndown on the Surry Units 1 and 2 LBLOCA analysis and concluded that the estimated PCT impact is +183°F for 10 CFR 50.46 reporting purposes. The peaking factor burndown included in the evaluation is provided in Tables 1, 2, and 3. Dominion and its vendor, Westinghouse Electric Company LLC, utilize processes which ensure that the LOCA analysis input values conservatively bound the as-operated plant values for those parameters.

Table 1: FDH Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FDH⁽¹⁾⁽²⁾
0	1.7
30,000	1.7
60,000	1.3
62,000	1.3

(1) Includes uncertainties.

(2) Hot assembly average power uses same burndown, since it is a function of FDH.

Table 2: Steady State FQ Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FQ Steady- State⁽¹⁾
0	2.0
30,000	2.0
60,000	1.5
62,000	1.5

(1) Does not include uncertainties.

Table 3: Transient FQ Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FQ Transient⁽¹⁾
0	2.5
30,000	2.5
60,000	2.0
62,000	2.0

(1) Includes uncertainties.

References

1. NRC Information Notice 2011-21, McGinty, T. J., and Dudes, L. A., "Realistic Emergency Core Cooling System Evaluation Model Effects Resulting From Nuclear Fuel Thermal Conductivity Degradation," December 13, 2011. (NRC ADAMS # ML 113430785)
2. WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992.
3. WCAP-16009-P-A, "Realistic Large Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005.
4. LTR-NRC-12-27, Letter from J. A. Gresham (Westinghouse) to NRC, "Westinghouse Input Supporting Licensee Response to NRC 10 CFR 50.54(f) Letter Regarding Nuclear Fuel Thermal Conductivity Degradation (Proprietary/Non-Proprietary)," March 7, 2012.

Pellet Radial Profile Option (Discretionary Change)

Background

The radial power profile of fuel pellets in the analysis of record was assumed to be uniform when setting up the conduction network over the fuel pellet in HOTSPOT. However, the accuracy of this approximation decreases for highly burned fuel since the radial power profile tends to increase from the center towards the outside of the fuel pellet at higher burnups. As such, an option was added in HOTSPOT to use a non-uniform radial power profile consistent with the WCOBRA/TRAC code. These changes were considered to be a discretionary change for the Westinghouse BELOCA Evaluation Models (Reference 1). However, the Surry analysis of record (AOR) performed in 2010 did not include the discretionary change. As such, it is now applied as discussed in Reference 2. These changes were considered to be Discretionary changes in accordance with Section 4.1.1 of WCAP-13451 (Reference 3).

Affected Evaluation Models

2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM (Reference 4)

Estimated Effect

A quantitative evaluation was performed to assess the PCT effect of the non-uniform pellet radial power profile in HOTSPOT on the Surry Units 1 and 2 LBLOCA analysis and concluded that the estimated PCT impact is -13°F for 10 CFR 50.46 reporting purposes.

References

1. LTR-NRC-06-8, Letter from B. F. Maurer (Westinghouse) to NRC, "U. S. Nuclear Regulatory Commission, 10 CFR 50.46 Annual Notification and Reporting for 2005," March 16, 2006.
2. LTR-NRC-12-27, Letter from J. A. Gresham (Westinghouse) to NRC, "Westinghouse Input Supporting Licensee Response to NRC 10 CFR 50.54(f) Letter Regarding Nuclear Fuel Thermal Conductivity Degradation (Proprietary/Non-Proprietary)," March 7, 2012.
3. WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992.
4. WCAP-16009-P-A, "Realistic Large Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005.

Westinghouse LOCA Peak Clad Temperature Summary for ASTRUM Best Estimate Large Break

Plant Name: Surry Unit 1

Utility Name: Dominion Generation

Analysis Information

EM: ASTRUM (2004) **Analysis Date:** 10/6/2010 **Limiting Break Size:** DEG
FQ: 2.5 **FdH:** 1.7
Fuel: Upgrade **SGTP (%):** 7
Notes: Core Power \leq 100% of 2597 MWt; SG Model 51F; 15x15 Upgrade Fuel with Zirlo® or Optimized ZIRLO™ cladding, Non-IFBA or IFBA, IFMs

	<u>Clad Temp (°F)</u>	<u>Notes</u>
LICENSING BASIS		
Analysis-Of-Record PCT	1853	
PCT ASSESSMENTS (Delta PCT)		
A. PRIOR ECCS MODEL ASSESSMENTS		
1. None	0	
B. PLANNED PLANT MODIFICATION EVALUATIONS		
1. Evaluation of Additional Containment Metal	0	
C. 2012 ECCS MODEL ASSESSMENTS		
1. Evaluation of Pellet Thermal Conductivity Degradation and Peaking Factor Burndown	183	b
2. Pellet Radial Profile Option	-13	
D. OTHER		
1. Transition Core (applied to mixed OFA/Upgrade core only)	14	a
LICENSING BASIS PCT + PCT ASSESSMENTS	PCT = 2037	

Notes:

- (a) The transition core penalty is to be applied only for cycles containing both OFA fuel and Upgrade fuel.
- (b) This assessment considers burnup effects which include thermal conductivity degradation and peaking factor burndown.

Westinghouse LOCA Peak Clad Temperature Summary for ASTRUM Best Estimate Large Break

Plant Name: Surry Unit 2

Utility Name: Dominion Generation

Analysis Information

EM: ASTRUM (2004) **Analysis Date:** 10/6/2010 **Limiting Break Size:** DEG
FQ: 2.5 **FdH:** 1.7
Fuel: Upgrade **SGTP (%):** 7
Notes: Core Power \leq 100% of 2597 MWt; SG Model 51F; 15x15 Upgrade Fuel with Zirlo® or Optimized ZIRLO™ cladding, Non-IFBA or IFBA, IFMs

	<u>Clad Temp (°F)</u>	<u>Notes</u>
LICENSING BASIS		
Analysis-Of-Record PCT	1853	
PCT ASSESSMENTS (Delta PCT)		
A. PRIOR ECCS MODEL ASSESSMENTS		
1. None	0	
B. PLANNED PLANT MODIFICATION EVALUATIONS		
1. Evaluation of Additional Containment Metal	0	
C. 2012 ECCS MODEL ASSESSMENTS		
1. Evaluation of Pellet Thermal Conductivity Degradation and Peaking Factor Burndown	183	b
2. Pellet Radial Profile Option	-13	
D. OTHER		
1. Transition Core (applied to mixed OFA/Upgrade core only)	14	a
LICENSING BASIS PCT + PCT ASSESSMENTS	PCT = 2037	

Notes:

- (a) The transition core penalty is to be applied only for cycles containing both OFA fuel and Upgrade fuel.
- (b) This assessment considers burnup effects which include thermal conductivity degradation and peaking factor burndown.

ATTACHMENT 3

WESTINGHOUSE LETTER LTR-LIS-12-262 NP

**ADDITIONAL INFORMATION REGARDING EVALUATION
FOR SURRY UNITS 1 AND 2 (VPA / VIR)**

(Non-Proprietary)

**VIRGINIA ELECTRIC AND POWER COMPANY
(DOMINION)
SURRY POWER STATION UNITS 1 AND 2**

1.0 Background

The Nuclear Regulatory Commission (NRC) approved 2004 Westinghouse Realistic Large Break LOCA Evaluation Model Using ASTRUM (Reference 1) is based on the PAD 4.0 fuel performance code (Reference 2). PAD 4.0 was licensed without explicitly considering fuel pellet thermal conductivity degradation (TCD) with burnup. Explicit modeling of fuel pellet TCD in the fuel performance code leads to changes in the fuel rod design parameters beyond beginning-of-life which are input to the large-break LOCA (LBLOCA) analysis. The effects of explicitly modeling fuel pellet TCD on the Surry Units 1 and 2 LBLOCA analysis have been considered. Modeling of fuel pellet TCD is considered a Non-Discretionary Change to the performed LBLOCA analysis in accordance with Section 4.1.2 of WCAP-13451 (Reference 3).

Fuel performance data that accounts for fuel pellet TCD (using an unlicensed model) was used as input to the Surry Units 1 and 2 evaluation. The new PAD fuel performance data was generated with a representative model that includes explicit modeling of fuel pellet TCD. Therefore, the evaluations performed consider the fuel pellet TCD effects cited in NRC Information Notice 2011-21 (Reference 4).

2.0 Large Break LOCA Input Parameters and Assumptions

The evaluation of fuel TCD and peaking factor burndown considered the following input parameter changes to the LBLOCA analysis:

- Fuel rod design data with PAD 4.0 + TCD
- Peaking factor burndown shown in Table 2-1, Table 2-2, and Table 2-3

Table 2-1: FDH Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FDH ⁽¹⁾⁽²⁾
0	1.7
30,000	1.7
60,000	1.3
62,000	1.3

(1) Includes uncertainties.

(2) Hot assembly average power uses same burndown, since it is a function of FDH.

Table 2-2: Steady State FQ Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FQ Steady- State⁽¹⁾
0	2.0
30,000	2.0
60,000	1.5
62,000	1.5

(1) Does not include uncertainties.

Table 2-3: Transient FQ Burndown Considered in the Evaluation of TCD

Rod Burnup (MWD/MTU)	FQ Transient⁽¹⁾
0	2.5
30,000	2.5
60,000	2.0
62,000	2.0

(1) Includes uncertainties.

3.0 Large Break LOCA Description of Evaluation

The evaluation method discussed in Reference 5 was used to determine the estimated effect of fuel pellet TCD and peaking factor burndown. It is noted that no analysis input changes beyond fuel TCD and peaking factor burndown were required to demonstrate compliance with the 10 CFR 50.46(b)(1), (b)(2), and (b)(3) criteria. Additionally, it is noted that the analysis of record (AOR) and TCD evaluation did not include the non-uniform radial power profile.

To estimate the effect of fuel TCD and peaking factor burndown, a total of 45 WCOBRA/TRAC executions were performed. The uncertainty attributes of these executions were taken from among the most limiting cases from the original 124-run ASTRUM analysis. The evaluation considered an adequate range of burnup such that the effects of TCD and related burnup effects were captured. Additional details of the runset selection are discussed in Section 5.0. HOTSPOT executions were performed for each WCOBRA/TRAC case to consider the effect of local uncertainties for both IFBA (Integral Fuel Burnable Absorber) and non-IFBA fuel.

The estimated effect of TCD was then taken as the difference between the maximum PCT when considering the effects of fuel TCD and peaking factor burndown and the 95/95 PCT from the Surry ASTRUM analysis with 15x15 Upgrade Fuel.

4.0 Large Break LOCA Results

Consistent with the ASTRUM methodology, the most limiting PCT from the evaluation was taken as the representative PCT. The limiting PCT case when evaluating the effect of fuel TCD and peaking factor burndown was 2036°F, less than the 2200°F acceptance criterion. When including the discretionary change implementing the pellet radial profile option in HOTSPOT, the limiting PCT case was 2023°F. Given the current analysis with 15x15 Upgrade Fuel PCT of 1853°F, the estimate of effect of fuel TCD and peaking factor burndown is a penalty of 183°F, and the estimate of effect for the pellet radial profile is a benefit of 13°F. Therefore, the total change to the Surry PCT is +170°F.

5.0 Additional Information Regarding Runset Selection

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$$]^{a,c}$$
[illegible]

1^{a,c}

[illegible]

6.0 Additional Information Regarding Code Versions and the Evaluation Model

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a,c

[

]a,c

The information in Tables 7-1 and 7-2 is presented to facilitate Dominion's report to the NRC. The particular parameters included are based on RAIs received for other TCD evaluations. It is noted that Table 7-1 is sorted by decreasing delta TFUEL (fuel average temperature).

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Westinghouse Non-Proprietary Class 3

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Westinghouse Non-Proprietary Class 3

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Docket Nos. 50-280/281
Attachment 3

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Serial No. 12-420
Docket Nos. 50-280/281
Attachment 3

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8.0 References

1. WCAP-16009-P-A, "Realistic Large Break LOCA Evaluation Methodology Using the Automated Statistical Treatment of Uncertainty Method (ASTRUM)," January 2005.
2. WCAP-15063-P-A with Errata, Rev.1, "Westinghouse Improved Performance Analysis and Design Model (PAD 4.0)," July 2000.
3. WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992.
4. NRC Information Notice 2011-21, McGinty, T. J., and Dudes, L. A., "Realistic Emergency Core Cooling System Evaluation Model Effects Resulting From Nuclear Fuel Thermal Conductivity Degradation," December 13, 2011. (NRC ADAMS # ML 113430785)
5. LTR-NRC-12-27, "Westinghouse Input Supporting Licensee Response to NRC 10 CFR 50.54(f) Letter Regarding Nuclear Fuel Thermal Conductivity Degradation (Proprietary/Non-Proprietary)," March 7, 2012.

ATTACHMENT 4

**WESTINGHOUSE ELECTRIC COMPANY LLC. APPLICATION FOR WITHOLDING
PROPRIETARY INFORMATION FROM PUBLIC DISCLOSURE AND THE
ACCOMPANYING AFFIDAVIT
(8 PAGES)**

**VIRGINIA ELECTRIC AND POWER COMPANY
(DOMINION)
SURRY POWER STATION UNITS 1 AND 2**



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Proj letter: VRA-12-42

CAW-12-3498

June 12, 2012

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: LTR-LIS-12-262 Attachment 2, "Additional Information Regarding Evaluation for Surry Units 1 and 2 (VPA/VIR)" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-12-3498 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 Dominion.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference CAW-12-3498, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 428, 1000 Westinghouse Drive, Cranberry Township, Pennsylvania 16066.

Very truly yours,

A handwritten signature in black ink, appearing to read 'J. A. Gresham', written over a horizontal line.

J. A. Gresham, Manager
Regulatory Compliance

Enclosures

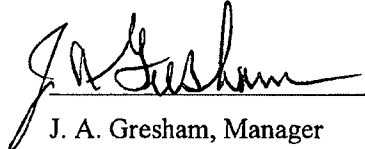
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COMMONWEALTH OF PENNSYLVANIA:

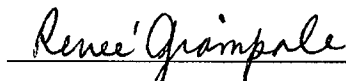
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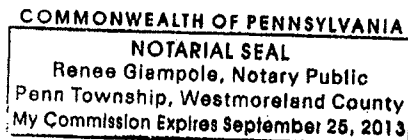
COUNTY OF BUTLER:

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

Sworn to and subscribed before me
this 12th day of June 2012


Notary Public



- (1) I am Manager, Regulatory Compliance, 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 LTR-LIS-12-262 Attachment 2, "Additional Information Regarding Evaluation for Surry Units 1 and 2 (VPA/VIR)" (Proprietary), dated June 11, 2012, for submittal to the Commission, being transmitted by Dominion 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 results of and method for the Thermal Conductivity Degradation evaluation for Surry Units 1 and 2, and may be used only for that purpose.

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

- (a) Provide input to Dominion to provide to the U.S. Nuclear Regulatory Commission for review of the Surry Units 1 and 2 50.46 submittal.
- (b) Provide additional information on the fuel thermal conductivity degradation evaluation for Surry.
- (c) Provide licensing support for customer submittal.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of the information to its customers for the purpose of evaluating the PCT impacts of Thermal Conductivity Degradation.
- (b) Westinghouse can sell support and defense of the technology to its customer in the licensing process.
- (c) 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 calculations 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.

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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).

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