

**Southern Nuclear Operating Company
Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

ND-15-2085

Enclosure 8

**Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from
Integrated Systems Validation (ISV) Daily Assessments**

(Non-Proprietary)

(This Enclosure consists of 11 pages, including this cover page)

1.0 Summary of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessment

Integrated System Validation (ISV) was conducted as part of the Human Factors Engineering (HFE) Verification and Validation process. Conduct of the AP1000 ISV resulted in a number of Potential HEDs (PHEDs). These PHEDs have the potential to impact the simulator, plant design, operator training, and/or procedures.

In order to elevate simulator fidelity to a level suitable for the conduct of operating tests commensurate with the requirements of 10 CFR 55.45(b), Priority 1 PHEDs specific to the operation of the simulator have been evaluated and corrected. A list of all ISV Priority 1 PHEDs and how they were resolved appears in Table E8-1 and E8-1S. These tables also include PHEDs related to other elements of the Integrated System Validation; specifically, procedures and training.

2.0 PHED Assessment

Westinghouse performed a preliminary assessment of ISV issues during the conduct of the ISV to identify those scenario failures that could have benefited from a fourth trial run while the Utility Crews were present. These assessments identified 15 Priority 1 PHEDs.

Westinghouse' resolution of these 15 PHEDs identified four items requiring simulator model or Human System Interface (HSI) changes and 11 PHEDs specific to procedures and training. The changes resolved the Alarm Workload PHED.

2.1 Supplemental Information

Subsequent reviews of ISV test results and Design Verification results per APP-OCS-GEH-120, APP-OCS-GEH-320 and APP-OCS-GEH-420 identified 10 additional PHEDs (Table E8-1S). There are no Priority 1 HEDs related to the Task Support Verification (APP-OCS-GER-220). The 10 additional HEDs are considered potential since final APP-OCS-GER-420 has not yet been released.

Westinghouse's evaluation of the 10 additional PHEDs determined that five of the additional PHEDs had initiating conditions similar to those responsible for some of the initial 15 PHEDs. Of the remaining five, two PHEDs will be resolved via a procedure change, one was found to not impact the suitability of the simulator with respect to a CAS and two PHEDs were specific to procedures and training (including the CPS issue). Detailed resolutions can be found in Table E8-1S.

**Table E8-1
 Priority 1 PHEDs**

#	PHED Description - (# trial failures of # trials performed)	Resolution
1	[]a,c ([]a,c)	[]a,c []a,c []a,c
2	[]a,c ([]a,c) []a,c []a,c	[]a,c []a,c []a,c []a,c []a,c
3	[]a,c ([]a,c) []a,c []a,c	[]a,c
4	[]a,c ([]a,c)	[]a,c []a,c []a,c

Table E8-1 (continued)

#	PHED Description - (# trial failures of # trials performed)	Resolution
		[] []]a,c
5	[]]a,c ([]]a,c	[]]a,c []]a,c
6	[]]a,c ([]]a,c	[]]a,c
7	[]]a,c ([]]a,c	[]]a,c
8	[]]a,c ([]]a,c	[]]a,c
9	[]]a,c ([]]a,c	[]]a,c []]a,c

Table E8-1 (continued)

#	PHED Description - (# trial failures of # trials performed)	Resolution
]a,c
10	[]a,c ([]a,c) []a,c	[]a,c []a,c
11	[]a,c ([]a,c) []a,c []a,c	[]a,c []a,c []a,c
12	[]a,c ([]a,c) []a,c	[]a,c []a,c []a,c
13	[]a,c ([]a,c) []a,c []a,c	[]a,c []a,c

Table E8-1S (continued)

#	PHED Description (ISV Report HED #)	Resolution
]a,c is received. A best practice learned from the ISV members was to move this window to the lower portion of the screen and review it periodically and scroll through the notifications and take actions based on those notifications vice closing the window after each notification. []a,c
18	<u>Core Makeup Tank (CMT) Operating Status:</u> []a,c ISV-05-09.1: Non-operating CMT could be seen to meet CMT operating criteria []a,c ISV-07-04.1: []a,c (WEC-ISV-42; Linked to RIHA HEDs)	[]a,c []a,c []a,c This issue does not impact the suitability of the simulator for the conduct of operating tests. Procedure and background document changes were implemented to clearly define how the CMT is expected to respond while injecting. The CMT operating characteristics used in making this evaluation can be viewed from a single graphical display by the operator.
19	<u>Procedure Use and Adherence:</u> FRP entry - Crews inconsistently applied rules for FRP entry conditions, delaying appropriate actions and reducing the margin of safety. ISV-05-10.1: []a,c ISV-05-10.2: []a,c (WEC-ISV-43; []a,c	[]a,c []a,c As indicated previously, this issue does not impact the suitability of the simulator for the conduct of operating tests. []a,c That information is provided to the operators through their training programs. Procedure use and adherence will continue to be emphasized through training.

Table E8-1S (continued)

#	PHED Description (ISV Report HED #)	Resolution
20	<p><u>PMS Functionality and Indications:</u> Functionality of PMS and missing PMS indications conflict with operator expectations or procedures. ISV-06-01.1: []]]_{a,c} (WEC-ISV-47; DCP 4916)</p>	<p>[]]_{a,c}]]_{a,c} In addition, EOPs contain Continuous Action Steps where appropriate to check if ADS Stage 4 actuation criteria have been met. These continuously monitored steps include []]_{a,c}</p>
21	<p><u>Instrument Qualification:</u> []]]_{a,c} ISV-07-04.1: []]]_{a,c} (WEC-ISV-50; []]_{a,c})</p>	<p>[]]_{a,c} []]_{a,c} []]_{a,c} CMT NR level instruments are qualified detectors and provide the required information for post-accident monitoring. CMT WR level instruments []]]_{a,c} The expectation is for operators to use all available indications while taking accident mitigating actions. This would include CMT WR level, NR level, and temperature indications. This issue does not impact the suitability of the simulator for the conduct of operating tests.</p>
22	<p><u>Design of Procedures:</u> Design of procedures []]]_{a,c} ISV-07-02: Procedure bases documents should contain all required background information for the performance of the given</p>	<p>[]]_{a,c} []]_{a,c} In response to this issue, []]]_{a,c} The updated material is contained in Revision 9 to APP-GW-GJP-201, "Background Information For E-0, Reactor Trip Or</p>

Table E8-1S (continued)

#	PHED Description (ISV Report HED #)	Resolution
	(WEC-ISV-62; Link to Daily Assessment Issues)	
25	<p>[]_{a,c} <u>Digital Rod Control System</u> <u>(DRCS) Soft Controls:</u> <p>[] <p>[]_{a,c} <p>(WEC-DV-20)</p> </p></p></p>	<p>[]_{a,c} <p>[]_{a,c} <p>[]_{a,c} SNC has determined that this issue does not impact the suitability of the simulator for the conduct of operating tests.</p> </p></p>

**Southern Nuclear Operating Company
Vogtle Electric Generating Plant (VEGP) Units 3 and 4**

ND-15-2085

Enclosure 8W

**Westinghouse Authorization Letter CAW-15-4321, Application for Withholding
Proprietary Information From Public Disclosure, Accompanying Affidavit, Proprietary
Information Notice and Copyright Notice**

(This Enclosure consists of 11 pages, including this cover page)

AP1000®

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Our Reference: SVP_SV0_003556

November 13, 2015

Subject: Updated Transmittal of Proprietary and Non-Proprietary Versions of ND-15-2085, “Enclosure 8P/8 Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments”

- Attachments:**
1. CAW-15-4321 Affidavit and Application for Withholding Proprietary Information from Public Disclosure
 2. Proprietary Information Notice and Copyright Notice
 3. ND-15-2085, Enclosure 8 (Non-Proprietary Document)
 4. ND-15-2085, Enclosure 8P (Proprietary Document)

Dear Mr. Rauckhorst:

In response to Owners’ request, Contractor, specifically Westinghouse Electric Company LLC, is transmitting to Owners, proprietary and non-proprietary versions of Owners’ ND-15-2085, “Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments.”

Attachment 1 to this letter is the Westinghouse Application for Withholding Proprietary Information from Public Disclosure, CAW-15-4321, and accompanying affidavit which 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.

Attachment 2 to this letter provides the Proprietary Information Notice and Copyright Notice, which is to be included in the utilities transmittal to the NRC.

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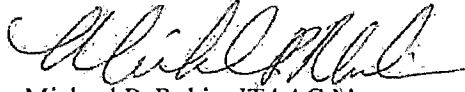
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Questions related to the content of this letter should be directed to the undersigned with copy to Lee Woodcock, Consortium Commercial Director, at woodc1j@westinghouse.com.

Sincerely,



Michael P. Rubin, ITAAC Manager
on behalf of:

Gerard F. Couture
Consortium Licensing Director
Vogle Units 3 & 4

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Todd Yelverton – SNC
Shawn Shaler – SNC
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CAW-15-4321

11/13/2015

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Transmittal of "ND-15-2085 Enclosure 8P/8 Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments"

The proprietary information for which withholding is being requested in the above-referenced report is further identified in Affidavit CAW-15-4321 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 Southern Nuclear Company (SNC).

Correspondence with respect to the proprietary aspects of the Application for Withholding or the Westinghouse Affidavit should reference CAW-15-4321, 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 that reads "Paul A. Russ".

Paul A. Russ, Director

U.S. Licensing & Regulatory Support

/Enclosures

CAW-15-4231
November 13, 2015
Page 2 of 2

1. Affidavit, Proprietary Information Notice, Copyright Notice dated November 13, 2015
2. "ND-15-2085 Enclosure 8P Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments" (Proprietary)
3. "ND-15-2085 Enclosure 8 Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments" (Non-Proprietary)

cc: Gregory Glenn Westinghouse
Sarah DiTommaso Westinghouse
Gerard Couture Westinghouse
Steven Radomski Westinghouse
Wesley Sparkman SNC
Mark Chitty SNC
Mark Crosby SNC
David Midlik SNC

CAW-15-4231
November 13, 2015

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

I, Paul A. Russ, am authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of my knowledge, information, and belief.



Paul A. Russ, Director
U.S. Licensing & Regulatory Support

- (1) I am Director, U.S. Licensing & Regulatory Support, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse Application for Withholding Proprietary Information from Public Disclosure accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
 - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitute Westinghouse policy and provide the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.
 - (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
 - (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
 - (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
 - (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
 - (f) It contains patentable ideas, for which patent protection may be desirable.
- (iii) There are sound policy reasons behind the Westinghouse system which include the following:
- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
 - (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.

- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.
 - (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
 - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
 - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iv) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- (v) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (vi) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in "ND-15-2085 Enclosure 8P Evaluation of Priority One (1) Potential Human Engineering Discrepancies (PHEDs) from Integrated Systems Validation (ISV) Daily Assessments" (Proprietary), for submittal to the Commission, being transmitted by Southern Nuclear Company (SNC) 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 Southern Nuclear Company commission approved simulator, and may be used only for that purpose.

- (a) This information is part of that which will enable Westinghouse to:
 - (i) Manufacture and deliver products to utilities based on proprietary designs.

- (b) Further this information has substantial commercial value as follows:
 - (i) Westinghouse plans to sell the use of similar information to its customers for the purpose of licensing new nuclear power stations.

 - (ii) Westinghouse can sell support and defense of industry guidelines and acceptance criteria for plant-specific applications.

 - (iii) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar technical evaluation justifications and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

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).

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