B. H. Whitley
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242

SOUTHERN COMPANY

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ND-13-1823
10 CFR 50.90

U.S. Nuclear Regulatory Commission
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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Second Supplement to
Request for License Amendment:
Revision to Human Factors Engineering
Task Support Verification Plan / GEH-220 (LAR-13-011S2)

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC), the licensee for Vogtle Electrical Generating Plant (VEGP) Units 3 and 4, previously submitted a license amendment request (LAR-13-011) for the Combined Licenses for VEGP Units 3 and 4, Numbers NPF-91 and NPF-92, respectively. The original LAR was dated March 25, 2013, and its ADAMS Accession Number is ML13087A351. SNC submitted its first supplement to the LAR by letter dated May 21, 2013, ADAMS Accession Number ML13144A125.

This second supplement to the LAR addresses concerns raised by the NRC Staff regarding the scope of the claim of proprietary information in the original LAR submittal. Specifically, the NRC Staff requested that certain portions of the original LAR not be considered proprietary. Further, SNC proposes additional modifications to the original LAR, including replacing Revision 0 of APP-OCS-GEH-220 with a new Revision 1.

Enclosed with this letter are replacements for the LAR's Enclosure 1A (proprietary) and Enclosure 1B (nonproprietary) previously submitted on March 25, 2013, ADAMS Accession Number ML13087A351. These are, respectively, **Enclosure 8 (proprietary)** and Enclosure 9 (nonproprietary). Enclosure 10 contains the proposed changes to the Updated Final Safety Analysis Report (UFSAR) for VEGP Units 3 and 4 and replaces Enclosure 2. **Enclosure 11 (proprietary)** is a copy of APP-OCS-GEH-220, Revision 1. Enclosure 12 is the nonproprietary version of Enclosure 11 and is labeled APP-OCS-GEH-222, Revision 1. **Enclosure 13 (proprietary)** is a redline generated by Microsoft Word between Revision 1 and Revision 0 of APP-OCS-GEH-220. Enclosures 14 and 15 are affidavits supporting withholding requests (discussed below).

The information provided in Enclosure 8 does not materially change the scope of the LAR. Consequently, this supplement does not require a revised Significant Hazards Consideration determination.

This letter contains no regulatory commitments.

Enclosures 8, 11, and 13 contain proprietary information that Westinghouse and SNC request to be withheld from public disclosure under 10 CFR 2.390. Enclosures 14 and 15 support this request and are affidavits signed by appropriate representatives of Westinghouse and SNC. The affidavits set forth the bases upon which the information may be withheld from public disclosure by the Commission and address the considerations in 10 CFR 2.390(b)(4).

Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting affidavits should reference CAW-13-3773 and should be addressed to J.A. Gresham, Manager, Regulatory Compliance, Westinghouse Electric Company, Suite 428, 1000 Westinghouse Drive, Cranberry Township, PA 16066, and also to Brian H. Whitley, SNC, at the contact information within this letter.

SNC requests staff approval of the license amendment by October 30, 2013, to support the timelines for executing the Integrated System Validation. Delayed approval of this license amendment may result in a delay of the licensing of the operators, thereby delaying SNC's ability to operate VEGP Units 3 and 4. SNC expects to implement the proposed amendment (through incorporation into the UFSAR) within 30 days of approval of the requested changes.

In accordance with 10 CFR 50.91, SNC is notifying the State of Georgia of this LAR by transmitting a copy of this letter and enclosures to the designated State Official.

Should you have any questions, please contact Brian Meadors at (205) 992-7331.

(Affirmation and signature are provided on the following page)

Mr. B. H. Whitley states that he is the Regulatory Affairs Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

B. H. Whitley

BHW/CBM/kms

Sworn to and subscribed before me this 22nd *day of* August, *2013*

Notary Public: Kristin Marie Seibert

My commission expires: August 16, 2016

Enclosures:
8) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment, Revision to Human Factors Engineering Task Support Verification Plan / GEH-220 (LAR-13-011S2) **(proprietary)**
9) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Request for License Amendment, Revision to Human Factors Engineering Task Support Verification Plan / GEH-220 (LAR-13-011S2) (nonproprietary)
10) Vogtle Electric Generating Plant (VEGP) Units 3 and 4 – Proposed Changes to the Updated Final Safety Analysis Report (UFSAR) (LAR-13-011S2) (nonproprietary)
11) APP-OCS-GEH-220, "AP1000 Human Factors Engineering Task Support Verification Plan," Revision 1 **(proprietary)**
12) APP-OCS-GEH-222, "AP1000 Human Factors Engineering Task Support Verification Plan," Revision 1 (nonproprietary)
13) Redline generated by Microsoft Word between Revision 1 and Revision 0 of APP-OCS-GEH-220 **(proprietary)**
14) Affidavit of Brian H. Whitley, Southern Nuclear Operating Co.
15) Westinghouse Authorization Letter CAW-13-3773, its accompanying affidavit, Proprietary Information Notice, and Copyright Notice

cc:

Southern Nuclear Operating Company/ Georgia Power Company
Mr. S. E. Kuczynski (w/o enclosures)
Mr. J. A. Miller
Mr. D. A. Bost (w/o enclosures)
Mr. B. L. Ivey
Mr. M. D. Rauckhorst (w/o enclosures)
Mr. J. T. Gasser (w/o enclosures)
Mr. D. H. Jones (w/o enclosures)
Mr. J. R. Johnson (w/o enclosures)
Mr. T. E. Tynan (w/o enclosure 8, 11, and 13)
Mr. D. M. Lloyd
Mr. B.H. Whitley
Mr. C. R. Pierce
Mr. D. L. Fulton
Mr. C. H. Mahan
Mr. J. T. Davis
Ms. A. G. Aughtman
Mr. M. C. Medlock
Mr. W. A. Sparkman
Document Services RTYPE: VND.RA.L06
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Nuclear Regulatory Commission
Mr. V. M. McCree (w/o enclosures)
Mr. F. M. Akstulewicz (w/o enclosures)
Mr. L. Burkhart (w/o enclosures)
Mr. D. H. Jaffe
Mr. R. G. Joshi
Ms. D. L. McGovern
Mr. B. M. Bavol
Ms. M. A. Sutton
Mr. M. E. Ernstes
Mr. G. Khouri
Mr. L. M. Cain
Mr. J. D. Fuller
Mr. C. B. Abbott
Mr. C. Huffman

State of Georgia
Mr. J. H. Turner (w/o enclosure 8, 11, and 13)

Oglethorpe Power Corporation
Mr. M. W. Price
Mr. K. T. Haynes

Municipal Electric Authority of Georgia
Mr. J. E. Fuller
Mr. S. M. Jackson

Dalton Utilities
Mr. D. Cope

CB&I
Mr. J. Simmons (w/o enclosures)
Mr. G. Grant (w/o enclosures)
Ms. K. Stoner (w/o enclosures)
Mr. C. A. Castell

Westinghouse Electric Company, LLC
Mr. T. C. Geer (w/o enclosures)
Mr. S. W. Gray (w/o enclosures)
Mr. F. G. Gill
Mr. P. A. Russ
Mr. G. F. Couture
Mr. M. Y. Shaqqo

Other
Mr. R. W. Prunty, Bechtel Power Corporation
Ms. K. K. Patterson, Tetra Tech NUS, Inc. (w/o enclosure 8, 11, and 13)
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.
Mr. S. Roetger, Georgia Public Service Commission
Ms. S. W. Kernizan, Georgia Public Service Commission
Mr. K. C. Greene, Troutman Sanders
Mr. S. Blanton, Balch Bingham
Ms. J. G. Ezell, South Carolina Electric & Gas Company
Mr. B. Kitchen, Duke Energy
Mr. S. Franzone, Florida Power & Light

Southern Nuclear Operating Company

ND-13-1823

Enclosure 9 replacing Enclosure 1B

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Request for License Amendment

Revision to Human Factors Engineering

Task Support Verification Plan / GEH-220

(LAR-13-011S2)

(nonproprietary)

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1. Summary Description

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) requests an amendment to Combined License (COL) Nos. NPF-91 and NPF-92 for Vogtle Electric Generating Plant (VEGP) Units 3 and 4, respectively.

The proposed amendment would revise the Combined Licenses in regard to a Tier 2* reference listed in Updated Final Safety Analysis Report (UFSAR) Chapter 1, Table 1.6-1 (sheet 20 of 21) and UFSAR Chapter 18, Section 18.11.2, Reference 4, by revising APP-OCS-GEH-220, "AP1000 Human Factors Engineering Task Support Verification Plan," from Revision B to Revision 1. The Human Factors Engineering (HFE) Task Support Verification Plan is one of several verification and validation (V&V) activities performed on human-system interface (HSI) resources and the Operation and Control Centers System (OCS). Formal V&V activities are an integral part of the overall HFE design process.

In the HFE Task Support Verification Plan a number of changes need to be made in order to implement the plan; the plan cannot be fully executed as described in Revision B. The execution of the task support verification plan is required in order to close Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) 3.2.00.01a.

2. Detailed Description and Technical Evaluation

Overview

The HFE task support verification plan is one of several V&V activities performed on HSI resources and OCS. Formal V&V activities are an integral part of the overall HFE design process.

These V&V activities are a final check of the adequacy of the HFE design of the HSI resources and the OCS design. As feasible, the evaluations are based on Pass/Fail criteria as described in the HFE task support verification plan. A HFE Specialist will determine the acceptability of the design when the assessment is more qualitative in nature and does not lend itself to pass/fail criteria. The V&V activities are performed against the final configuration and control documentation, simulator or installed target system.

The objective of the task support verification activities is to confirm the availability of the required OCS and HSI resources in the final AP1000 design, identify deviations, and formally document the results.

A license amendment is necessary because a Tier 2* reference document, APP-OCS-GEH-220, is being revised. The existing document is Revision B; the new document will be Revision 1. The proposed changes would revise the Combined Licenses in regard to a Tier 2* reference listed in UFSAR Chapter 1, Table 1.6-1 (sheet 20 of 21), and Chapter 18, Section 18.11.2, Reference 4. Subsequent to the NRC approving the AP1000 Design Control Document (DCD), more detailed information has become available regarding the plant design, operating procedures and the development of the HSI and OCS. This information impacts the HFE Task Support Verification Plan referenced in the Updated Final Safety Analysis Report (UFSAR).

References to other documents

The summary of the proposed changes to APP-OCS-GEH-220 detailed below make reference to other Westinghouse documents. All the Westinghouse documents referenced are proprietary information and are withheld from the public pursuant to 10 CFR 2.390.

Tier 2*

UFSAR Chapter 1, Section 1.6, Table 1.6-1 (sheet 20 of 21), Material Referenced, APP-OCS-GEH-220, will be changed from Revision B to Revision 1. This document is a Tier 2* reference.

UFSAR Chapter 18, Section 18.11.2, Reference 4, APP-OCS-GEH-220, will be changed from Revision B to Revision 1. This document is a Tier 2* reference.

Justification for all changes

The changes below share a common licensing justification. That justification is as follows: The proposed changes to APP-OCS-GEH-220 (detailed below) are justified because the proposed changes to APP-OCS-GEH-220 are consistent with the guidance in NUREG-0711, Revision 2, Human Factors Engineering Program Review Model. The proposed changes are intended to better align the HFE Task Support Verification Plan with the AP1000 design and procedures. Revision 2 of NUREG-0711 provides guidance for definition and execution of a human factors program. In development of the APP-OCS-GEH-220, Revision 1, the guidance of NUREG-0711 Revision 2 was followed, and APP-OCS-GEH-220, Revision 1, is consistent with NUREG-0711 Revision 2.

Specific changes

1. "Record of Changes" corrects the description in the revision history for Revision 0 to delete the statement that a reference to WNA-WI-00207-WAPP "Human Factors Tracking System" was added. This reference was not added in Revision 0.

2. "Bibliography" is updated for revision numbers for APP-OCS-GEH-120, APP-OCS-GEH-320, APP-OCS-GEH-420 and APP-OCS-GEH-520. Document 14, APP-OCS-J1R-220, is updated from Rev 0 to Rev 1 in-line with the current approved OSA-2 Summary Report. APP-GW-GJP-150, Rev. 0, and two other documents are also added to the reference section. Updated document revision numbers for the related HF V&V plan in order for the revision numbers to be consistent throughout the documents.

3. "References" updates the reference to the Westinghouse Design Verification procedure (WEC 3.3.3) in-line with the current approved procedure.

4. Section 1.1 "Overview," is changed to account for design and procedure changes after the task support verification is complete. There was also a need to add a description of the mechanism to deal with changes post-task support verification. For the purposes of task support verification, verification is performed when the design of all necessary hardware, software, and procedural elements have been completed to the extent that they can support all aspects of the task support verification. After completion of the task support verification, there may be design and procedure changes. APP-OCS-GEH-220,

Revision B, did not include any acknowledgement of post-task support verification changes. A description of the necessity of the changes and the process for addressing these changes was added.

The new revision includes a short description of the configuration management process and how this process will be utilized to assess and maintain the validity of the task support verification results against subsequent design or operating procedure changes. The new, proposed revision adds a reference to this configuration management process, APP-GW-G0Y-002, "AP1000 Configuration Management Plan," and WNA-PC-00005-WAPP, "AP1000 I&C Projects Configuration Management Plan."

5. Section 1.2.1, "Applicability," is changed to correct the scope of the Operational Sequence Analyses (OSA) with respect to the Emergency Operating Procedures (EOPs) to performance for the "full range of activities in the EOPs" versus the previous performance for the "complete set of EOPs." There is some duplication between EOPs in terms of similar steps which require the same functional operator knowledge, skills, and abilities. Therefore, it is not necessary to analyze all EOPs in order to cover the full range of activities. This correction is also consistent with the task analysis scope as described in UFSAR section 18.5.1: "The traditional task analysis, or operational sequence analysis, is developed for a representative set of operational and maintenance tasks" and "tasks are selected to represent the full range of activities in the AP1000 emergency response guidelines."

   The verification activities will continue to ensure that the OSA for the EOPs will achieve the objective of verifying the full range of activities and eliminate duplicate verification activities.

6. Section 1.4, "List of Exceptions from WCAP-15860," is added to take four exceptions to commitments, scope, purpose, and issues as stated in WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan:"

   - Procedure verification will not be included in the HFE task support verification, but will be implemented by the AP1000 Plant Operations procedures group as part of their procedure verification and validation activities. This is not an actual change to the scope of the HFE Task Support Verification. The only change to the document is that this information is also included in a new section created to clearly identify the exceptions to WCAP-15860. This also adds a reference to APP-GW-GJP-150, "Operating Procedures Verification and Validation". APP-GW-GJP-150 provides details of the procedure V&V process undertaken by the Westinghouse Procedures Group.

   - Operational sequence task analyses are not performed on the complete set of EOPs, but on a set of EOPs covering the full range of activities, as described in APP-OCS-J1R-110, "Operational Sequence Analysis Methodology," and APP-OCS-J1R-210, "AP1000 Operational Sequence Analysis (OSA-2) Implementation Plan" (see Change 5 above).

- Aspects related to accuracy and precision will be covered through I&C testing activities. HFE issues related to dynamic response, such as completion of risk-important human actions within a time window defined by the probabilistic risk assessment, will be evaluated during the integrated system validation (ISV) per APP-OCS-GEH-320, "AP1000 Human Factors Engineering Integrated System Validation Plan." This also deleted the exception that task support verification will not cover the characteristics of the HSI such as accuracy and precision. The only exception is that dynamic response will not be addressed. The task analyses and task support verification address HSI characteristics to the extent possible given that both of these analyses are table-top assessments. The task analyses identifies the personnel task requirements in terms of, for example, the information required, the range and the precision (e.g., number of decimal places needed in numerical digital readouts). Therefore, these will be addressed in task support verification. However, the task support verification does not use a control system, development system or the simulator as an input to the assessment. Therefore, aspects such as dynamic response and control system timings cannot realistically be addressed. These will be tested as part of the I&C testing. The text has been corrected to include accuracy and precision within the scope of task support verification.

- The task analysis is performed on a representative set, instead of complete set, of operational and maintenance tasks. Consistent with this, indications, controls, and alarms appearing on an HSI resource not identified by any of the task analyses will be flagged and reviewed. However, the task analyses will not be revised as a result of the task support verification. If further analysis and review indicates that the indications, controls, and alarms are shown to be necessary to support operator performance, the additional tasks requiring the indications, controls, and alarms will be documented, but the task analyses will not be revised.

Several of the cited activities that are excepted from WCAP-15860 will be conducted under other programs or procedures external to the task support verification plan, such that the overall objectives continue to be met for the task support verification plan. The exception to limit the task analyses scope of the HSI resources to those identified by any task analyses will ensure the scope is not expanded outside the objective of the verification.

7. Section 2.1, “Background,” is revised to clarify descriptions of the [ ] a,c

   The objectives of the task support verification are not changed because of this change.

8. Section 2.2, “Verification Plan For Function-Based Task Analysis,” is updated to delete detailed information in the description about APP-OCS-J1A-030, to delete the discrepancy worksheet, and to add information about the SmartPlant Foundation (SPF) Human Factors (HF) Tracking System (a database tracking tool) into which any

discrepancy will be entered. This change concerning the SPF HF Tracking System is also changed throughout the document.

The changes provide updates to the method of documenting the discrepancies from a paper-based system to a computer-based system. These changes do not affect the scope, objectives, or method of performance of the task support verification plan.

9. Section 2.4.1, "Prerequisite," is revised to add a necessary reference to APP-OCS-GLR-001, "AP1000 Post-Accident Risk-Important Human Actions Summary Report." This document provides more up-to-date and detailed information regarding the risk-important human actions in-line with the current plant design and operating procedures. The list of risk-important human actions remains unchanged; however, it was necessary to provide documentation to update the assumptions and provide further details on these tasks.

10. Section 2.5, "Verification Plan for MTIS Activities", corrected typographical error. The Maintenance, Test, Inspection and Surveillance (MTIS) results are provided in the Operational Sequence Analysis (OSA)-1 documentation; not OSA-2.

11. Section 2.6, "Verification Plan for Emergency Operations Facility and Technical Support Center Task Functions," is revised to add a necessary reference to APP-OCS-J0A-001, "AP1000 Human Factors Engineering Analysis to Support Technical Support Center and Emergency Operations Facility Design."

    This change is necessary because the results of the Technical Support Center (TSC) and Emergency Operations Facility (EOF) task analysis are summarized in a separate document, APP-OCS-J0A-001, "AP1000 Human Factors Engineering Analysis to Support Technical Support Center and Emergency Operations Facility Design." The original scope of the task support verification plan to have a results report for the human factors analysis for the TSC and EOF is maintained. The only change is that the results of the TSC and EOF task analysis are documented in APP-OCS-J0A-001.

12. Section 3.1, "Verification Plan for Minimum Inventory Equipment," is revised to clarify that the requirements/commitments to be met are only those for minimum inventory equipment as specifed in UFSAR Section 18.12, versus what could be interpreted as a commitment for the entire UFSAR.

    The clarification to specify that the HSI minimum inventory equipment is specified in UFSAR Section 18.12 is made to provide consistency and to more clearly identify the location of the minimum inventory equipment in the UFSAR.

13. Section 4.2.1, "AP1000 Implementation," is revised to add a necessary reference to APP-OCS-J1-024, "AP1000 Operation and Control Centers Systems Presentation of Safety Functions Design Basis." The new reference is a new design document which provides detailed descriptions and design basis for how the AP1000 HSI resources address the Safety Parameter Display System (SPDS) requirement.

The addition of a new reference for descriptions and design basis of how the SPDS requirement is met provides detailed information that will aid the HFE Design Verification Plan and ISV Plan completion. This change to the task support verification plan does not affect the scope and method for task support verification.

14. Section 4.4.2, "Verification Plan," [ ] a,c

15. Section 4.11, "10 CFR 50.34(f)(2)(xix) – Post-Accident Monitoring Instrumentation," is clarified by deleting the sentence "The normal control room display system is used for the display of non-safety-related signals which are not required to be displayed by a qualified system," because this 10 CFR requirement is not applicable to equipment not required to be displayed by a qualified system.

    The clarification offered by removing this statement provides consistency in the task support verification plan by removing information that is not applicable. There is no change to the performance of the task support verification plan as a result of this change.

16. Section 4.13.1, "AP1000 Implementation," is clarified to reflect that it is the Main Control Room Emergency Habitability System that functions to protect the operators and support the MCR equipment and HSI resources. Further clarification and improvement is made by re-locating the last paragraph of the section to the first paragraph.

    The clarification of the verification plan assures that it is documented that the Main Control Room (MCR) Emergency Habitability System provides the control room operator and equipment protection in the event of the loss of non-safety related ac power and a design basis accident. Originally this just stated that the MCR environment was sufficient to protect the operators and equipment without succinctly relating how this was accomplished. Further clarification is provided by reorganizing the section to improve the readability and understanding by the reader.

17. Section 4.13.2, "Verification Plan," [ ] a,c The HSI resources for the Main Control Room (MCR) Emergency Habitability System will be addressed via the

minimum inventory task support verification, as described in Section 3.1, "Verification Plan for Minimum Inventory Equipment" of APP-OCS-GEH-220. The MCR Emergency Habitability System actuation is a control identified in Table 18.12.2-1, thereby requiring a manual control on the Primary Dedicated Safety Panel. This particular item from 10 CFR 50.34 is concerned with the equipment/structure (i.e., the compressed-air system and associated sealed connections). It is confirmed that this is in addition to verifying the HSI resources; not instead of.

18. Section 5.1, "Resource Assignment," is corrected to change the 'OCS Product Manager' to 'HF Manager' (in multiple sections) to be consistent with the current organizational structure.

    The corrections were made to correctly reflect the organization as it now exists. This change has no effect on the performance of the task support verification plan.

19. Section 5.1, "Resource Assignment," and Glossary: Changed the definition of "independent verifier" and included a reference to WEC 3.3.3.

    The definition change and the addition of a new reference are made to be in conformance with current Westinghouse Electric Company procedures regarding the personnel requirements for design verification activities.

20. Section 5.2, "Personnel Requirements and Techniques," is clarified by changing "HSI resources" to "item" since in some cases the objects to be verified are not HSI resources, but systems/equipment (e.g., from Item 17 above, functionality of MCR habitability system is the verification object).

    This clarification is similar to that made by Item 17 that the verification can be for systems/equipment that are not HSI resources. This clarification has no effect on the performance of the task support verification plan.

21. Section 5.3, "Documenting and Resolving Human Engineering Discrepancies:" [ ] a,c

    The information regarding the HED process has been removed, since it exists in APP-OCS-GEH-420, "AP1000 Human Factors Engineering Discrepancy Resolution Process." The APP-OCS-GEH-420 document is the most appropriate place to document the HED resolution process, and it enables the process to be described for all of the HFE V&V activities in one document. The overall scope of the V&V has not changed.

[redacted] a,c

22. Section 5.4, “Human Factors Discrepancy Form Requirements,” is revised to update the details and the example of discrepancy worksheet in Section 5.4 and Appendix A to reflect the current Task Support Verification form in the HF Tracking System.

    This section revision provides a description of a computer-based entry and tracking system for the Human Factors Discrepancies. The revision does not have any effect on the objectives and scope of the task support verification plan.

23. Section 5.5, “Deliverables,” is clarified related to discrepancy resolution. This change is the result of HED resolution being removed from APP-OCS-GEH-220 and included in APP-OCS-GEH-420, “AP1000 Human Factors Engineering Discrepancy Resolution Process,” (see Item 21).

    The clarification provided by this change is consistent with Item 21 above. As previously stated, this change has no effect on the overall performance of the task support verification plan.

24. There are several other minor editorial changes in sections not expressly listed above. These changes make the document more clear and have no effect on the objectives and scope of the task support verification plan.

Summary

The requested amendment reflects a proposed revision to a Tier 2* reference document, APP OCS-GEH-220, from Revision B to Revision 1. The proposed revision of this document changes the Task Support Verification Plan, and those changes will be reflected in the Updated Final Safety Analysis Report (UFSAR) as a revision to Tier 2* reference document APP-OCS-GEH-220. The proposed changes would revise the Combined Licenses in regard to a Tier 2* reference listed in UFSAR Chapter 1, Table 1.6-1 (sheet 20 of 21) and Chapter 18, Section 18.11.2, Reference 4, by changing the revision number of the GEH-220 document from Revision B to Revision 1.

As detailed above, the changes to the Task Support Verification Plan for the Human Factors Engineering do not adversely affect any design function described in the UFSAR. The new revision of APP-OCS-GEH-220 more accurately reflects how the task support verification plan will be implemented to satisfy Revision 2 of NUREG-0711, “Human Factors Engineering Program Review Model.” The new Task Support Verification Plan continues to be consistent with Revision 2 of NUREG-0711. There is no physical change to the plant itself. For these reasons, the proposed changes to the plan are acceptable.

3. Technical Evaluation (Incorporated into Section 2, above)

4. Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, VIII.B.6.b(4), requires prior NRC approval for Tier 2* information changes. The HFE Task Support Verification Plan is referenced in the UFSAR as Tier 2* information. Therefore, a license amendment is required.

10 CFR 50, Appendix A, Criterion XIII, "Instrumentation and Control," provides for instrumentation to be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls are to be provided to maintain these variables and systems within prescribed operating ranges. Human Factors Engineering evaluates procedures, instrumentation, and controls that respond to normal and accident plant conditions.

10 CFR 50.34(f)(2)(ii) requires that a program be established and begun during construction and follow into operation, for integrating and expanding current efforts to improve plant procedures. The scope of the program shall include emergency procedures, reliability analyses, human factors engineering, crisis management, operator training, and coordination with INPO and other industry efforts.

4.2 Precedent

No precedent is identified.

4.3 No Significant Hazards Consideration Determination

The requested change would revise the Combined Licenses in regard to the AP1000 at Vogtle Electrical Generating Plant (VEGP) Units 3 and 4 by changing a Tier 2* Reference listed in the Updated Final Safety Analysis Report (UFSAR) and incorporated by reference. The reference is part of the AP1000 Human Factors Engineering (HFE) V&V Program. There is no physical change to the plant itself.

Since the reference is a Tier 2* reference, changing the technical information contained in the task support verification plan constitutes a Tier 2* change, and NRC approval is required prior to implementation. An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The HFE Task Support Verification Plan is one of several verification and validation (V&V) activities performed on human-system interface (HSI) resources and the Operation and Control Centers System (OCS), where applicable. The Task Support Verification Plan is used to assess and verify displays and activities

related to normal and emergency operation. The changes are to the Task Support Verification Plan to clarify the scope and amend the details of the methodology. The Task Support Verification Plan does not affect the plant itself. Changing the Plan does not affect prevention and mitigation of abnormal events, e.g., accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses. The Probabilistic Risk Assessment is not affected. No safety-related structure, system, component (SSC) or function is adversely affected. The change does not involve nor interface with any SSC accident initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the UFSAR are not affected. Because the changes do not involve any safety-related SSC or function used to mitigate an accident, the consequences of the accidents evaluated in the UFSAR are not affected.

Therefore, there is no significant increase in the probability or consequences of an accident previously evaluated.

4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The changes to the Task Support Verification Plan change information related to validation and verification on Human System Interface and Operational Control Centers. Therefore, the changes do not affect the safety-related equipment itself, nor do they affect equipment which, if it failed, could initiate an accident or a failure of a fission product barrier. No analysis is adversely affected. No system or design function or equipment qualification will be adversely affected by the changes. This activity will not allow for a new fission product release path, nor will it result in a new fission product barrier failure mode, nor create a new sequence of events that would result in significant fuel cladding failures. In addition, the changes do not result in a new failure mode, malfunction or sequence of events that could affect safety or safety-related equipment.

Therefore, this activity does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The changes to the Task Support Verification Plan affect the validation and verification on the Human System Interface and the Operational Control Centers. Therefore, the changes do not affect the plant itself. These changes do not affect the design or operation of safety-related equipment or equipment whose failure could initiate an accident, nor does it adversely interface with safety-related equipment or fission product barriers. No safety analysis or design basis acceptance limit/criterion is challenged or exceeded by the requested change.

Therefore, the changes do not involve a significant reduction in a margin of safety.

4.4 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

5. Environmental Considerations

The requested amendment is a proposed revision to a Tier 2* reference document, APP-OCS-GEH-220, "AP1000 Human Factors Engineering Task Support Verification Plan," from Revision B to Revision 1. The proposed changes would revise the Combined Licenses in regard to a Tier 2* reference listed in UFSAR Chapter 1, Table 1.6-1 (sheet 20 of 21), and Chapter 18, Section 18.11.2, Reference 4.

The HFE task support verification plan is one of several verification and validation (V&V) activities performed on human-system interface (HSI) resources and the Operation and Control Centers System (OCS), where applicable. The task support verification plan does not affect the plant itself. The changes to the HFE task support verification plan are needed to support the closure of ITAAC 3.2.00.01a.

The proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), in that:

(i) There is no significant hazards consideration.

As documented in Section 4.3, No Significant Hazards Consideration, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." As mentioned above, the change affects the validation and verification on the Human System Interface and the Operation Control Centers System, as applicable. The task support verification plan does not affect the plant itself. The No Significant Hazards Consideration determined that (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed amendment changes a Tier 2* reference document, APP-OCS-GEH-220, "AP1000 Human Factors Engineering Task Support Verification Plan." As mentioned above, the proposed change will not affect how the plant is designed or constructed as the change affects the validation and verification of the Human System Interface and the Operation Control Centers System. The Task Support Verification Plan, including changes, is unrelated to any aspects of plant construction or operation that would introduce any changes to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents) or affect any plant radiological or non-radiological effluent release quantities. Furthermore, these changes do not diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed change to the Tier 2* referenced document is acceptable because it continues to comply with Revision 2 of NUREG-0711. As mentioned above, the proposed change will not affect how the plant is designed, constructed, or operated as the change only affects the verification and validation activities performed on Human-System Interface resources and the Operation and Control Centers System. The Task Support Verification Plan does not affect the plant itself. Consequently, the changes to the referenced document details of implementation have no effect on individual or cumulative occupational radiation exposure during plant operation. Therefore, the proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the proposed amendment, it has been determined that there are no anticipated construction and operational effects of the proposed amendment involving (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed amendment is not required.

6. References

None

Southern Nuclear Operating Company

ND-13-1823

Enclosure 10 replacing Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Proposed Changes to the Updated Final Safety Analysis Report (UFSAR)
(LAR-13-011S2)

(**nonproprietary)**

UFSAR Tier 2, Chapter 1, Table 1.6-1 (sheet 20 of 21)

Revise the title of Tier 2* Westinghouse Topical Report Number APP-OCS-GEH-220 as shown below.

AP1000 Human Factors Engineering Task Support Verification Plan, Revision ~~B~~ 1, Westinghouse Electric Company LLC]*

UFSAR Tier 2, Chapter 18, Section 18.11.2

Revise Tier 2* Reference 4 as shown below.

APP-OCS-GEH-220, "AP1000 Human Factors Engineering Task Support Verification Plan," Revision ~~B~~ 1, Westinghouse Electric Company LLC.]*

Southern Nuclear Operating Company

ND-13-1823
(LAR-13-011S2)

Enclosure 12

APP-OCS-GEH-222, "AP1000 Human Factors Engineering Task Support Verification Plan," Revision 1

(nonproprietary)

Note: The following enclosure is a thirty-nine page stand-alone document.

Westinghouse

Westinghouse Non-Proprietary Class 3

AP1000

Human Factors Engineering Task Support Verification Plan

APP-OCS-GEH-222,
Rev. 1

August 2013

APPROVALS

Function	Name and Signature
Author	Julie I. Reed* Fellow Engineer, Human Factors & Operations
Reviewer	Zhonghai Li* Senior Engineer, Human Factors & Operations
	Robert W. Beasley* Acting Project Manager, Human Factors Engineering
Approver	Steven P. Kerch* Acting Manager, Human Factors & Operations

*Electronically approved records are authenticated in the electronic document management system.

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LIST OF CONTRIBUTORS

Revision	Name and Title
A	Julie I. Reed Principal Engineer, Human Factors & Operations
A	Sarah J. Barczyk Manager, Technical Communications
B	Brandon P. Floder Engineering Technician, Control Room Design
0	Jenna L. Tyger Technical Communications, Technical Editor
0	Steven P. Kerch Technical Adviser, Operator Interface Engineering
0	Zhonghai Li Senior Engineer, Human Factors & Operations
1	Donna L. Ruff Senior Technical Writer, Technical Communications

REVISION HISTORY

RECORD OF CHANGES

Revision	Author	Description	Completed
A	Todd W. Van Meter	Preliminary Issue	6/2008
B	Todd W. Van Meter	Revision was created to prepare the document with proprietary markings for transmittal.	4/2009
0	Julie I. Reed	Incorporation of APP-GW-GEE-4051, Rev. 0. Numerous updates to the References and Bibliography in accordance with latest documents and revisions. Minor editorial clarifications throughout the document. Subsection 1.1.2, "Process Strategy": Added description of the mechanism to deal with design and procedure changes post-task support verification, and added reference to APP-GW-G0Y-002, "AP1000 Configuration Management Plan" and WNA-PC-00005-WAPP, "AP1000 I&C Projects Configuration Management Plan". Subsection 1.2.1, "Applicability": Replaced "complete set of" with "full range of activities in the" to make a correction on the scope of OSA in terms of covered EOPs. Section 1.4, "List of Exceptions from WCAP-15860": A new section is added. Section 2.1, "Background": Clarified descriptions of OSA-1 and OSA-2 scope and methodologies. Section 2.2, "Verification Plan For Function-Based Task Analysis": Deleted detailed information in description about APP-OCS-J1A-030. Deleted discrepancy worksheet and added information on the HF Tracking System into which discrepancy will be entered. This change is implemented across the document in all other relevant places. Subsection 2.3.1, "Prerequisite": Changed "program wide database (PWD)" to "AP1000 design" and included designinformation as an input to the development of OSA-1. Subsection 2.4.1, "Prerequisite": Added reference to APP-OCS-GLR-001, "AP1000 Post-Accident Risk-Important Human Actions Summary Report."	3/2013

REVISION HISTORY (cont.)

RECORD OF CHANGES (cont.)

Revision	Author	Description	Completed
0 (cont.)	Julie I. Reed	Section 2.6, "Verification Plan for Emergency Operations Facility and Technical Support Center Task Functions": Added reference to APP-OCS-J0A-001, "AP1000 Human Factors Engineering Analysis to Support Technical Support Center and Emergency Operations Facility Design." Section 3.1, "Verification Plan for Minimum Inventory Equipment": Clarified that the commitments to be met are those specified in the AP1000 DCD for minimum inventory equipment. Subsection 4.2.1, "AP1000 Implementation": Changed to reflect revision 0 of the OCS System Specification document and to include a reference to APP-OCS-J1-024, "AP1000 Operation and Control Centers Presentation of Safety Functions Design Basis". Subsection 4.4.2, "Verification Plan": Added the automatic depressurization system operation controls to the verification plan. Section 4.5, "10 CFR 50.34(f)(2)(viii) – Post-Accident Sampling": Deleted statement about contingency plans and post-accident access areas. Section 4.11, "10 CFR 50.34(f)(2)(xix) – Post-Accident Monitoring Instrumentation": Deleted sentence "The normal control room display system is used for the display of non-safety-related signals which are not required to be displayed by a qualified system". Subsection 4.13.1, "AP1000 Implementation": Clarified that it is the MCR emergency habitability system that functions to protect the operators and support the MCR equipment and HSI resources. The last paragraph was moved to be the first paragraph in this section. Section 5.1, "Resource Assignment": Changed 'OCS Product Manager' to 'HF Manager' (in multiple sections). Changed definition of 'independent verifier' and included reference to NSNP 3.3.3, "Design Verification by Independent Review or Alternate Calculations." Section 5.2, "Personnel Requirements and Techiniques": Changed "HSI reources" to "item".	3/2013

REVISION HISTORY (cont.)

RECORD OF CHANGES (cont.)

Revision	Author	Description	Completed
0 (cont.)	Julie I. Reed	Section 5.3, "Documenting and Resolving Human Engineering Discrepancies": Deleted information describing the process for defining HEDs, creating justifications for discrepancies, prioritization of HEDs, and the process to resolve HEDs. Deleted "priority 1 and priority 2." Changed the description of task support verification completion from approval of the HED resolution report (APP-OCS-GER-420) to the approval of the design verification results (APP-OCS-GER-220). Section 5.4, "Human Factors Discrepancy Form Requirements": Updated the details and the example of discrepancy worksheet in Section 5.4 and Appendix A to the current Task Support Verification form in the HF Tracking System. Section 5.5, "Deliverables": Clarifications are made on the process for discrepancy resolution.	3/2013
1	Julie I. Reed	Incorporation of APP-GW-GEE-4523, Rev. 0. Updated document revision numbers in the Bibliography. Section 1.4, "List of Exceptions from WCAP-15860," Item 1: Added a reference to APP-GW-GJP-150, "Operating Procedures Verification and Validation." Section 1.4, "List of Exceptions from WCAP-15860," Item 3: Corrected text to state that the HSI characteristics of accuracy and precision are in scope of task support verification, and dynamic response is not in scope. Section 2.5, "Verification Plan for MTIS Activities": Corrected typographical error. Section 4, "Verification Process for 10 CFR 50.34 Requirements": Administrative changes made to proprietary markings. Note: An alternative document number is APP-OCS-GEH-220 (proprietary version).	See EDMS

DOCUMENT TRACEABILITY & COMPLIANCE

Created to Support the Following Document(s)	Document Number	Revision
AP1000 Human Factors Engineering Program Plan	APP-OCS-GBH-001	1

OPEN ITEMS

Item	Description	Status
None.		

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None.

ACRONYMS AND TRADEMARKS

Acronyms used in the document are defined in WNA-PS-00016-GEN, "Standard Acronyms and Definitions" (Reference 1), or included below to ensure unambiguous understanding of their use within this document.

Acronyms	Definition
HED	Human Engineering Discrepancy
HF	Human Factors

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GLOSSARY OF TERMS

Standard terms used in the document are defined in WNA-PS-00016-GEN, "Standard Acronyms and Definitions" (Reference 1), or included below to ensure unambiguous understanding of their use within this document.

Term	Definition
Independent Verifier	Any competent individual(s) or group(s) other than those who performed the original design work, but who may be from the same organization or group
Task Support Verification	An evaluation to confirm that the human-system interface (HSI) resources are available to accommodate human capabilities and limitations as identified in the project's task analyses.

REFERENCES

Following is a list of references used throughout this document.

1. APP-GW-J9Y-001, Rev. 0 (WNA-PS-00016-GEN, Rev. 5), "Standard Acronyms and Definitions," Westinghouse Electric Company LLC. (Proprietary)

2. APP-OCS-GBH-001, Rev. 1, "AP1000 Human Factors Engineering Program Plan," Westinghouse Electric Company LLC. (Proprietary)

3. APP-OCS-GEH-020, Rev. 2 (WCAP-15860), "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan," Westinghouse Electric Company LLC.

4. NUREG-0711, Rev. 2, "Human Factors Engineering Program Review Model," U.S. Nuclear Regulatory Commission.

5. APP-GW-G0Y-002, Rev. 3, "AP1000 Configuration Management Plan," Westinghouse Electric Company LLC. (Proprietary)

6. WNA-PC-00005-WAPP, Rev. 2, "AP1000 I&C Projects Configuration Management Plan," Westinghouse Electric Company LLC. (Proprietary)

7. 10 CFR 50.34, "Contents of Construction Permit and Operating License Applications; Technical Information," U.S. Nuclear Regulatory Commission.

8. Regulatory Guide 1.47, Rev. 1, "Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems," U.S. Nuclear Regulatory Commission, February 2010.

9. WEC 3.3.3, Rev. 0.0, "Design Verification," Westinghouse Electric Company LLC, effective March 26, 2013.

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Following is a list of sources that were considered in preparing this document, or that provide additional information.

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2. APP-OCS-GEH-320, Rev. 3, "AP1000 HFE Integrated System Validation Plan," Westinghouse Electric Company LLC. (Proprietary)

3. APP-OCS-GEH-420, Rev. 1, "AP1000 Human Engineering Discrepancy Resolution Process," Westinghouse Electric Company LLC. (Proprietary)

4. APP-OCS-GEH-520, Rev. 2, "Plant Startup Human Factors Engineering Verification Plan," Westinghouse Electric Company LLC. (Proprietary).

5. APP-OCS-J1R-100, Rev. 0, "Function-Based Task Analysis Methodology and Implementation for AP1000," Westinghouse Electric Company LLC. (Proprietary)

6. APP-OCS-J1R-110, Rev. 1, "Operational Sequence Analysis Methodology," Westinghouse Electric Company LLC. (Proprietary)

7. APP-OCS-J1R-210, Rev. 1, "AP1000 Operational Sequence Analysis (OSA-2) Implementation Plan," Westinghouse Electric Company LLC. (Proprietary)

8. APP-GW-GL-700, Rev. 19, "AP1000 Design Control Document," Westinghouse Electric Company LLC.

9. APP-GW-GJP-150, Rev. 0, "Operating Procedures Verification and Validation," Westinghouse Electric Company LLC. (Proprietary)

10. APP-OCS-J1A-030, Rev. 0, "Function-Based Task Analysis Summary Report," Westinghouse Electric Company LLC. (Proprietary)

11. APP-OCS-J1R-120, Rev. 2, "AP1000 Operational Sequence Analysis (OSA-1) Summary Report," Westinghouse Electric Company LLC. (Proprietary)

12. APP-GW-GL-011, Rev. 0, "AP1000 Identification of Critical Human Action and Risk Important Tasks," Westinghouse Electric Company LLC.

13. APP-OCS-GLR-001, Rev. 0, "AP1000 Post-Accident Risk-Important Human Actions Summary Report," Westinghouse Electric Company LLC. (Proprietary)

14. APP-OCS-J1R-220, Rev. 1, "AP1000 Operational Sequence Analysis (OSA-2) Summary Report," Westinghouse Electric Company LLC.

BIBLIOGRAPHY (cont.)

15. APP-OCS-J0A-001, Rev. A, "AP1000 Human Factors Engineering Analysis to Support Technical Support Center and Emergency Operations Facility Design," Westinghouse Electric Company LLC. (Proprietary)

16. APP-OCS-J7-001, Rev. 0, "AP1000 Operations and Control Centers System System Specification Document," Westinghouse Electric Company LLC. (Proprietary)

17. APP-OCS-J1-024, Rev. 0, "AP1000 Operation and Control Centers Presentation of Safety Functions Design Basis." (Proprietary)

18. Federal Register, Volume 65, Number 211, October 31, 2000.

19. NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

20. Regulatory Guide 1.97, Rev. 4, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants," June 2006, U.S. Nuclear Regulatory Commission.

(Last Page of Front Matter)

SECTION 1
INTRODUCTION

1.1 OVERVIEW

1.1.1 Purpose

This document defines the Human Factors Engineering (HFE) task support verification plan for the AP1000® plant. It is an integral part of the APP-OCS-GBH-001, "AP1000 Human Factors Engineering Program Plan" (Reference 2).

This document is based on the information and guidance described in APP-OCS-GBH-001, "AP1000 Human Factors Engineering Program Plan" (Reference 2); APP-OCS-GEH-020 (WCAP-15860), "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan" (Reference 3); and NUREG-0711, "Human Factors Engineering Program Review Model" (Reference 4).

1.1.2 Process Strategy

The HFE task support verification plan is one of several verification and validation (V&V) activities performed on human-system interface (HSI) resources and Operation and Control Centers (OCS), where applicable. Formal V&V activities are an integral part of the overall HFE design process. These activities and associated documents include the following as defined in the AP1000 HFE Program Plan (Reference 2):

- APP-OCS-GEH-120, "AP1000 Human Factors Engineering Design Verification Plan" (Bibliog 1)
- APP-OCS-GER-120, "AP1000 Human Factors Engineering Design Verification Report" [LATER]
- APP-OCS-GER-220, "AP1000 Human Factors Engineering Task Support Verification Report" [LATER]
- APP-OCS-GEH-320, "AP1000 Human Factors Engineering Integrated System Validation Plan" (Bibliog 2)
- APP-OCS-GER-320, "AP1000 Human Factors Engineering Integrated System Validation Report" [LATER]
- APP-OCS-GEH-420, "AP1000 Human Engineering Discrepancy Resolution Process" (Bibliog 3)
- APP-OCS-GER-420, "AP1000 Human Engineering Discrepancy Resolution Report" [LATER]

- APP-OCS-GEH-520, "Plant Startup Human Factors Engineering Design Verification Plan" (Bibliog 4)

- APP-OCS-GER-520, "Plant Startup Human Factors Engineering Design Verification Report" [LATER]

These V&V activities are a final check of the adequacy of the HFE design of the HSI resources and Operation and Control Centers System (OCS) design. [

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1.2 SCOPE

1.2.1 Applicability

Per APP-OCS-GEH-020, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan" (Reference 3), the HSI task support verification plan includes the methodology by which the HSI resources, and Operation and Control Centers are checked against the information and control requirements identified in:

- Function-based task analyses (FBTA)

- Operational sequence task analyses for important and representative tasks

- Operational sequence task analyses performed for risk-important personnel tasks as defined by the Probabilistic Risk Assessment (PRA)

- Operational sequence task analyses performed for the full range of activities in the emergency operating procedures (EOPs)
- Required minimum inventory of alarms, displays, and controls
- Required federally mandated 10 CFR 50.34 (Reference 7) indications and control features

1.2.2 Function-Based Task Analysis and Operational Sequence Analyses (OSAs)

As part of the AP1000 HFE Program Plan (Reference 2), three separate task analyses are performed:

- APP-OCS-J1R-100, "Function-Based Task Analysis Methodology and Implementation for AP1000" (Bibliog 5)
- APP-OCS-J1R-110, "Operational Sequence Analysis Methodology" (Bibliog 6)
- APP-OCS-J1R-210, "AP1000 Operational Sequence Analysis (OSA-2) Implementation Plan" (Bibliog 7)

Section 2, "Verification Processes for FBTA and Operational Sequence Analysis," contains the verification plans for each of these task analyses.

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1.2.3 Minimum Inventory Equipment

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Section 3, "Verification Process for Minimum Inventory Equipment," describes the verification plan for the HSI resources associated with the minimum inventory equipment.

1.2.4 10 CFR 50.34(f) Requirements

The requirements and specifications in 10 CFR 50.34(f) are derived from the Three Mile Island (TMI) accident. The AP1000 Design Control Document (Bibliog 8), Section 1.9.3, evaluates each requirement in detail. Based on the "AP1000 Response" for each requirement, specific sections of 10 CFR 50.34(f) are included as part of the AP1000 task support verification plan.

Specifically, only the sections in 10 CFR 50.34(f) involving the availability of HSI resources (i.e., displays, alarms, and controls) in the final plant design are applicable to the task support verification assessment. For example, if the "AP1000 Response" specifies a requirement as "not applicable" to the AP1000 design, then no verification plan for that requirement is included in this document. Also, the 10 CFR 50.34(f) requirements which are not applicable to HSI resources are excluded from this document; for example, 10 CFR 50.34(f)(1)(vi) states, "Perform a study to identify practicable system modifications that would reduce challenges and failure of relief valves, without compromising the performance of the valves or other systems."

Section 4, "Verification Processes for 10 CFR 50.34(f) Requirements," identifies the applicable requirements and describes the verification plans for these requirements.

1.2.5 Limitation of Scope

No critical human actions have been identified for the AP1000 plant. Therefore, the verification of critical human actions is not required.

1.3 OBJECTIVE

The overall objective of Human Factors V&V is to ensure that the AP1000 design attains a high standard of human factors adequacy and thereby contributes to the safety, operability and maintainability of the plant.

The objective of the task support verification activities is to confirm the availability of the required OCS and HSI resources in the final AP1000 design, identify deviations, and formally document the results.

1.4 LIST OF EXCEPTIONS FROM WCAP-15860

The HFE task support verification complies with WCAP-15860, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan" (Reference 3). However, WCAP-15860 was issued relatively early in the design stage of AP1000, and therefore based on the current AP1000 design, four adjustments were required. These are described below:

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(Last Page of Section 1)

SECTION 2
VERIFICATION PROCESSES FOR FBTA AND OPERATIONAL SEQUENCE ANALYSIS

2.1 BACKGROUND

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2.2 VERIFICATION PLAN FOR FUNCTION-BASED TASK ANALYSIS

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]a,c For each identified "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

2.3 VERIFICATION PLAN FOR OSA-1

2.3.1 Prerequisite

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2.3.2 Verification Plan

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]a,c For each HSI resource that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

2.4 VERIFICATION PLAN FOR OSA-2 – RISK-IMPORTANT TASKS AND TASKS THAT HAVE HUMAN PERFORMANCE CONCERNS

2.4.1 Prerequisite

As part of the task support verification activities, a qualified independent verifier will confirm that no new critical human tasks, risk-important tasks, or tasks that have human performance concerns have been identified since the completion of OSA-2. This can be confirmed by checking APP-OCS-J1R-210, "AP1000 Operational Sequence Analysis (OSA-2) Implementation Plan" (Bibliog 7), Tables 2.1-1 and 2.1-2, against the information provided in APP-GW-GL-011, "AP1000 Identification of Critical Human Actions and Risk Important Tasks" (Bibliog 12) and APP-OCS-GLR-001, "AP1000 Post-Accident Risk-Important Human Actions Summary Report" (Bibliog 13). [

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2.4.2 Verification Plan

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]^{a,c} For each HSI resource that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

2.5 VERIFICATION PLAN FOR MTIS ACTIVITIES

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For each HSI resource that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

2.6 VERIFICATION PLAN FOR EMERGENCY OPERATIONS FACILITY AND TECHNICAL SUPPORT CENTER TASK FUNCTIONS

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]^{a,c} For each HSI resource that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

(Last Page of Section 2)

SECTION 3
VERIFICATION PROCESS FOR MINIMUM INVENTORY EQUIPMENT

3.1 VERIFICATION PLAN FOR MINIMUM INVENTORY EQUIPMENT

For each control, display, and alert identified in APP-GW-GL-700, "AP1000 Design Control Document" (Bibliog 8), Table 18.12.2-1, a qualified independent verifier will ensure the availability and HFE adequacy of the HSI resource. [

]^{a,c} For each HSI Resource that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

(Last Page of Section 3)

SECTION 4
VERIFICATION PROCESSES FOR 10 CFR 50.34 REQUIREMENTS

4.1 BACKGROUND

The applicability of 10 CFR 50.34(f), as implemented in the AP1000 design, is detailed in the AP1000 Design Control Document (DCD) (Bibliog 8), Section 1.9.3. Based on the "AP1000 Response" sections within the DCD and the guidance stated in APP-OCS-GEH-020, "Programmatic Level Description of the AP1000 Human Factors Verification and Validation Plan" (Reference 3), the following sections of 10 CFR 50.34(f) are addressed in the task support verification process.

Note

The "AP1000 Implementation" sections below are not identical to the "AP1000 Response" sections in the AP1000 Design Control Document. The "AP1000 Implementation" sections are structured to provide clarity to the verification process.

4.2 10 CFR 50.34(f)(2)(iv) – SAFETY PARAMETER DISPLAY SYSTEM

Provide a plant safety parameter display console that will display to operators a minimum set of parameters defining the safety status of the plant, capable of displaying a full range of important plant parameters and data trends on demand, and capable of indication when process limits are being approached or exceeded.

4.2.1 AP1000 Implementation

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4.2.2 Verification Plan

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4.3 10 CFR 50.34(f)(2)(v) – SAFETY SYSTEM STATUS INDICATION

Provide for automatic indication of the bypassed and [in]operable status of safety systems.

4.3.1 AP1000 Implementation

Plant safety parameters, protection system status, and plant component status signals are processed by the protection and safety monitoring system (PMS). These signals are shared via the redundant monitor bus. Class 1E signals are provided to the qualified data processor, which is part of the PMS for accident monitoring displays. The display of this data is incorporated into the process data displays on the graphic VDU-based workstations for the safety control system in the AP1000 MCR.

4.3.2 Verification Plan

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]^{a,c} For each item that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.4 10 CFR 50.34(f)(2)(vi) – REACTOR COOLANT SYSTEM HIGH POINT VENTS

Provide the capability of high point venting of non-condensable gases from the reactor coolant system, and other systems that may be required to maintain adequate core cooling. Systems to achieve this capability shall be capable of being operated from the control room and their operation shall not lead to an unacceptable increase in the probability of loss-of-coolant accident or an unacceptable challenge to containment integrity.

4.4.1 AP1000 Implementation

In the AP1000 design, the capability for remotely operated high point venting of the reactor coolant system is provided by the safety-related automatic depressurization system valves and the safety-related reactor vessel head vent system. Both of these vent paths discharge to the containment refueling water storage tank.

During loss of cooling accident events, the automatic depressurization system automatically depressurizes the reactor coolant system so that the passive core cooling system may effectively deliver core cooling flow. Depressurization via the automatic depressurization system results in creation of a gas-steam volume in the upper region of the vessel. This vapor volume expands down to the inside of the hot leg before it begins venting through the hot leg either via the automatic depressurization system paths connected to the pressurizer or directly from the hot legs via the fourth stage automatic depressurization system paths. This process provides an open injection and steam venting flow path through the reactor vessel, maintaining required core cooling flow.

The reactor vessel head vent system can also be operated from the MCR to directly vent from the top of the reactor vessel head. Section 5.4.12 of the AP1000 DCD (Bibliog 8) provides additional information pertaining to the reactor coolant system venting capabilities.

4.4.2 Verification Plan

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]^{a,c} For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.5 10 CFR 50.34(f)(2)(viii) – POST-ACCIDENT SAMPLING

Provide a capability to promptly obtain and analyze samples from the reactor coolant system and containment that may contain TID-14844 source term radioactive materials without radiation exposures to any individual exceeding 5 rem to the whole-body or 50 rem to the extremities. Materials to be analyzed and quantified include certain radionuclides that are indicators of degree of core damage (e.g., noble gases, iodines and cesiums, and non-volatile isotopes) hydrogen in the containment atmosphere, dissolved gases, chloride, and boron concentrations.

4.5.1 AP1000 Implementation

The NRC published a model safety evaluation report on eliminating post-accident sampling system requirements from technical specifications for operating plants (Federal Register, Volume 65, Number 211, October 31, 2000, Bibliog 18). The AP1000 sampling design is consistent with the approach in the model safety evaluation report and not the guidance outlined in NUREG-0737 (Bibliog 19) and Regulatory Guide 1.97 (Bibliog 20). The primary sampling system design includes capabilities to obtain and analyze highly radioactive post-accident samples from the reactor coolant system, the containment sump, and the containment atmosphere.

4.5.2 Verification Plan

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For each HSI component that "Failed," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.6 10 CFR 50.34(f)(2)(ix) – HYDROGEN CONTROL

Provide a system for hydrogen control that can safely accommodate hydrogen generated by the equivalent of a 100 percent fuel-clad metal-water reaction. Preliminary design information on the tentatively preferred system option of those being evaluated in paragraph (1)(xii) of this section (50.34) is sufficient at the construction permit stage. The hydrogen control system and associated systems shall provide, with reasonable assurance, that:

(A) Uniformly distributed hydrogen concentrations in the containment do not exceed 10 percent during and following an accident that releases an equivalent amount of hydrogen as would be generated from a 100 percent fuel-clad metal-water reaction, or that the post-accident atmosphere will not support hydrogen combustion.

(B) Combustible concentrations of hydrogen will not collect in areas where unintended combustion or detonation could cause loss of containment integrity or loss of appropriate mitigating features.

(C) Equipment necessary for achieving and maintaining safe shutdown of the plant and maintaining containment integrity will perform its safety function during and after being exposed to the environmental conditions attendant with the release of hydrogen generated by the equivalent of a 100 percent fuel-clad metal-water reaction including the environmental conditions created by activation of the hydrogen control system.

(D) If the method chosen for hydrogen control is a post-accident inerting system, inadvertent actuation of the system can be safely accommodated during plant operation.

4.6.1 AP1000 Implementation

Continuous indication of hydrogen concentration in the containment atmosphere is provided. The containment hydrogen control system maintains hydrogen concentrations below 10 percent following the reaction of 100 percent of the active Zircaloy cladding. Hydrogen igniters control rapid release of hydrogen during and after postulated degraded core and core melt accidents to maintain concentration below 10 percent. In addition, sufficient vent area is provided for each subcompartment in the containment to prevent high local concentrations of hydrogen. See Section 6.2.4 of the AP1000 Design Control Document (Bibliog 8) for additional information.

4.6.2 Verification Plan

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For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.7 10 CFR 50.34(f)(2)(xi) – VALVE POSITION INDICATION

Provide direct indication of relief and safety valve position (open or closed) in the control room.

4.7.1 AP1000 Implementation

Direct indication of relief and safety valve position (open or closed) is provided in the MCR. The AP1000 design does not include power-operated relief valves and their associated block valves from the reactor coolant system.

4.7.2 Verification Plan

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]^{a,c} For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.8 10 CFR 50.34(f)(2)(xii) – AUXILIARY FEEDWATER SYSTEM INITIATION AND INDICATION

Provide automatic and manual auxiliary feedwater system initiation, and provide auxiliary feedwater system flow indication in the control room.

4.8.1 AP1000 Implementation

The AP1000 design includes a non-safety-related startup feedwater system, but not an auxiliary feedwater system. Flow indication of the startup feedwater system is provided in the MCR. The startup feedwater pumps automatically start following anticipated transients resulting in low steam generator level. The startup feedwater control valves automatically control feedwater flow to the steam generators during operation. They can also be operated manually from the MCR.

The safety-related passive core cooling system provides for emergency core decay heat removal during transients, accidents, or conditions during which the normal heat removal paths are unavailable. Automatic and manual actuation and flow rate indication are available in the MCR.

4.8.2 Verification Plan

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]^{a,c} For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.9 10 CFR 50.34(f)(2)(xvii) – SPECIFIC ACCIDENT MONITORING INSTRUMENTATION

"Provide instrumentation to measure, record and readout in the control room: (A) containment pressure, (B) containment water level, (C) containment hydrogen concentration, (D) containment radiation intensity (high level), and (E) noble gas effluents at all potential accident release points. Provide for continuous sampling of radioactive iodines and particulates in gaseous effluents from all potential accident release points, and for onsite capability to analyze and measure these samples."

4.9.1 AP1000 Implementation

AP1000 post-accident monitoring is described in Chapter 7 of the AP1000 Design Control Document (Bibliog 8).

AP1000 post-accident monitoring provides for indication of the specified parameters as follows:

- Containment pressure
- Containment water level
- Containment radiation intensity (high level)
- Noble gas effluents – to ascertain reactor coolant system integrity

Other noble gas effluents are designated Type E variables and include information to permit the operators to:

- Monitor the habitability of the MCR
- Monitor plant areas where access may be required to service equipment necessary to monitor or mitigate the consequences of an accident
- Estimate the magnitude of release of radioactive materials through identified pathways
- Monitor radiation levels and radioactivity in the environment surrounding the plant

Section 11.5.5 of the AP1000 DCD includes additional information on measurement of radioactive effluents and conformance with Regulatory Guide 1.97 (Bibliog 20).

The AP1000 primary sampling system is designed to provide post-accident sampling functions. See subsection 9.3.3.1 of the AP1000 DCD for additional information on the post-accident sampling system.

4.9.2 Verification Plan

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]^{a,c} For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.10 10 CFR 50.34(f)(2)(xviii) – INADEQUATE CORE COOLING INSTRUMENTATION

Provide instruments that provide in the control room an unambiguous indication of inadequate core cooling, such as primary coolant saturation meters in PWRs, and a suitable combination of signals from indicators of coolant level in the reactor vessel and in-core thermocouples in PWRs and BWRs.

4.10.1 AP1000 Implementation

The AP1000 reactor system includes instrumentation for detecting voids in the reactor vessel head and other reactor vessel inventory deficits that could lead to inadequate core cooling.

The available instrumentation includes core subcooling margin monitors, core exit thermocouples, pressurizer level indicators, reactor coolant system reactor vessel level, and reactor coolant pump status (motor current). Reactor vessel level indication is provided from a range in the vessel from the bottom of the hot leg to approximately the reactor vessel mating flange via level instrumentation connected to the hot legs.

The AP1000 features that provide margin to or indication of inadequate core cooling include the following:

- A larger pressurizer than most current pressurized water reactors (PWRs), with a pressurizer that is located above the reactor pressure vessel head
- No automatic power-operated relief valves
- An improved reactor vessel head venting capability

- A passive core cooling system
- A passive containment cooling system
- No dependence on alternating current (ac) power to maintain adequate core and containment cooling
- Reactor coolant system hot leg level instrumentation
- Improved reactor system instrumentation
- Core subcooling monitoring

4.10.2 Verification Plan

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]a,c For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.11 10 CFR 50.34(f)(2)(xix) – POST-ACCIDENT MONITORING INSTRUMENTATION

Provide instrumentation adequate for monitoring plant conditions following an accident that includes core damage.

4.11.1 AP1000 Implementation

The AP1000 post-accident monitoring system was developed by using Regulatory Guide 1.97 (Bibliog 20) as a guidance document.

Data used for post-accident monitoring is displayed either by the normal control room display system or by the qualified data processing system. The qualified data processing system provides the display of signals which must be displayed by a qualified system. The qualified data processing system is a microprocessor-based, safety-related system that provides instrumentation to monitor the plant variables and systems during and following an accident. The system consists of two independent, electrically isolated, physically separated divisions.

Chapter 7 of the AP1000 DCD (Bibliog 8) has additional details pertaining to this requirement.

4.11.2 Verification Plan

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4.12 10 CFR 50.34(f)(2)(xxvii) – IN-PLANT MONITORING

Provide for monitoring of in-plant radiation and airborne radioactivity as appropriate for a broad range of routine and accident conditions.

4.12.1 AP1000 Implementation

Area radiation monitors (ARMs) are provided to supplement the personnel and area radiation survey provisions of the AP1000 health physics program described in Section 12.5 of the AP1000 DCD (Bibliog 8). In addition to the installed detectors, periodic plant environmental surveillance is established.

4.12.2 Verification Plan

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]a,c For each HSI resource that "Fails," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

4.13 10 CFR 50.34(f)(2)(xxviii) – CONTROL ROOM HABITABILITY

Evaluate potential pathways for radioactivity and radiation that may lead to control room habitability problems under accident conditions resulting in a TID-14844 source term release, and make necessary design provisions to preclude such problems.

4.13.1 AP1000 Implementation

The non-safety-related HVAC system, equipped with a refrigeration-type air conditioning unit, normally provides MCR cooling. During a loss of power, this equipment is powered from the on-site diesel generators. If the normal HVAC system is not available, outside air is not allowed into the MCR, and the safety-related compressed-air storage system is actuated.

A non-safety-related heating, ventilation and air conditioning (HVAC) system maintains the AP1000 MCR slightly pressurized to prevent infiltration of air from other plant areas. During accident conditions, a safety-related isolation of the MCR is automatically actuated.

Upon the loss of non-safety-related ac power, the MCR Emergency Habitability System protects the operators and support the MCR equipment and HSI resources necessary to establish and maintain safe shutdown conditions for the plant following a postulated design basis accident. The radiation sources are based on the core activity release model from Regulatory Guide 1.183, which supersedes the TID-14844 source term assumptions as reflected in Regulatory Guide 1.4.

The MCR is sealed with safety-related connections to a safety-related compressed-air breathing source. This compressed-air system provides continued pressurization and a source of fresh air for operator habitability. The air supply is sized to last for 72 hours following an accident. It is expected that the on-site non-safety-related normal HVAC system will be operational before the installed compressed-air supply is exhausted.

4.13.2 Verification Plan

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]^{a,c} For each compressed-air system component and associated sealed connections that is evaluated as "Fail," a discrepancy is entered into the HF Tracking System (see Section 5.3, "Documenting and Resolving Human Engineering Discrepancies" and Section 5.4, "Human Factors Discrepancy Form Requirements" for details).

(Last Page of Section 4)

SECTION 5
METHODOLOGY AND MEASURES

5.1 RESOURCE ASSIGNMENT

The HF Manager is responsible for identifying the HFE evaluation team. The HFE evaluation team will consist of independent verifiers and the design engineering team. See WEC 3.3.3, "Design Verification" (Reference 9), for additional guidance on personnel independence and qualifications.

5.2 PERSONNEL REQUIREMENTS AND TECHNIQUES

To ensure an independent and unbiased review, the task support verification process is performed by independent verifiers with input from other design team members. As necessary, the design engineers will provide all design configuration and control documentation related to the item under evaluation to the independent verifier.

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The independent verifiers will produce the HFE Task Support Verification Summary Report. This will record the task support verification discrepancies and any recommendations and improvements (e.g., lessons learned) to help in future design projects or task support verification activities.

5.3 DOCUMENTING AND RESOLVING HUMAN ENGINEERING DISCREPANCIES

Discrepancies are identified as human engineering discrepancies (HEDs) and are required to be resolved by the formal resolution process described in APP-OCS-GEH-420, "AP1000 Human Engineering Discrepancy Resolution Process" (Bibliog 3).

The HFE task support verification activity is considered complete when HEDs are entered into the tracking database and the formal "AP1000 HFE Task Support Verification Report" is approved.

5.4 HUMAN FACTORS DISCREPANCY FORM REQUIREMENTS

An HF Task Support Verification Discrepancy Form is used to document discrepancies identified during the task support verification process. Appendix A, "HF Task Support Verification Discrepancy Form" provides an example screen shot of a form to ensure complete coverage and promote consistency in documentation.

The HFE discrepancy form includes the following type of information:
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5.5 DELIVERABLES

Deliverables from the HFE task support verification plan are defined by the APP-OCS-GBH-001, "AP1000 Human Factors Engineering Program Plan" (Reference 2).

The results of the task support verification process are used to develop "HFE Task Support Verification Summary Report." [

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(Last Page of Section 5)

APPENDIX A
HF TASK SUPPORT VERIFICATION DISCREPANCY FORM

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Figure A-1. HF Task Support Verification Discrepancy Form in HF Tracking System

(Last Page of Appendix A)

Southern Nuclear Operating Company

ND-13-1823

(LAR-13-011S2)

Enclosure 14

Affidavit of Brian H. Whitley, Southern Nuclear Operating Co.

Prepared in Accordance with 10 CFR 2.390

Note: The following enclosure is a two page stand-alone document.

Affidavit of Brian H. Whitley

1. My name is Brian H. Whitley. I am the Regulatory Affairs Director, Nuclear Development, for Southern Nuclear Operating Company (SNC). I have been delegated the function of reviewing proprietary information sought to be withheld from public disclosure and am authorized to apply for its withholding on behalf of SNC.
2. I am making this affidavit on personal knowledge, in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations, and in conjunction with SNC's filings and supplement(s) on dockets 52-025 and 52-026, Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Request for License Amendment, Revision to Human Factors Engineering Task Support Verification Plan / GEH-220 (LAR-13-011S2). I have personal knowledge of the criteria and procedures used by SNC to designate information as a trade secret, privileged or as confidential commercial or financial information.
3. Based on the reason(s) at 10 CFR 2.390(a)(4), this affidavit seeks to withhold from public disclosure Enclosures 8, 11, and 13 of Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Request for License Amendment, Revision to Human Factors Engineering Task Support Verification Plan / GEH-220 (LAR-13-011S2).
4. The following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
    a. The information sought to be withheld from public disclosure has been held in confidence by SNC and Westinghouse Electric Company.
    b. The information is of a type customarily held in confidence by SNC and Westinghouse and not customarily disclosed to the public.
    c. The release of the information might result in the loss of an existing or potential competitive advantage to SNC and/or Westinghouse.

d. Other reasons identified in Enclosure 15 of Vogtle Electric Generating Plant (VEGP) Units 3 and 4, Request for License Amendment, Revision to Human Factors Engineering Task Support Verification Plan / GEH-220, (LAR-13-011S2) (dockets 52-025 and 52-026), and those reasons are incorporated here by reference.

5. Additionally, release of the information may harm SNC because SNC has a contractual relationship with the Westinghouse Electric Company regarding proprietary information. SNC is contractually obligated to seek confidential and proprietary treatment of the information.
6. 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.
7. To the best of my knowledge and belief, 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.

I declare under penalty of perjury that the foregoing is true and correct.

Brian H. Whitley

Executed on 8/22/13
Date

Southern Nuclear Operating Company

ND-13-1823

(LAR-13-011S2)

Enclosure 15

Westinghouse Authorization Letter CAW-13-3773,

its accompanying affidavit, Proprietary Information Notice, and Copyright Notice

Note: The following enclosure is a seven page stand-alone document.

August 14, 2013

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.

Westinghouse Electric Company
Nuclear Power Plants
1000 Westinghouse Drive
Cranberry Township, Pennsylvania 16066
USA

Document Control Desk
U S Nuclear Regulatory Commission
Washington, DC 20852-2738

Direct tel: 412-374-6206
Direct fax: 724-940-8505
e-mail: sisk1rb@westinghouse.com
Project letter: SVP_SV0_001996

Our ref: CAW-13-3775

August 14, 2013

APPLICATION FOR WITHHOLDING PROPRIETARY
INFORMATION FROM PUBLIC DISCLOSURE

Subject: Transmittal of APP-OCS-GEH-320 Revision 3, AP1000 Human Factors Engineering Integrated System Validation Plan (Proprietary) and APP-OCS-GEH-322 Revision 1, AP1000 Human Factors Engineering Integrated System Validation Plan (Non-Proprietary)

The proprietary information for which withholding is being requested in the above-referenced letter is further identified in the affidavit signed by Westinghouse Electric Company LLC. The affidavit accompanying this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and address 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.**

Correspondence with respect to the proprietary aspects of this application for withholding or the accompanying affidavit should reference CAW-13-3775 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,

Robert B. Sisk
Program Manager APR1400 Licensing Support

CAW-13-3775
August 14, 2013

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF BUTLER:

Before me, the undersigned authority, personally appeared **Robert B. Sisk**, 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:

Robert B. Sisk
Program Manager APR1400 Licensing Support

Sworn to and subscribed
before me this 14th day
of August 2013.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Linda J. Bugle, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires June 18, 2017
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Notary Public

(1) I am Program Manager APR1400 Licensing 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" 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.

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 from within the APP-OCS-GEH-320, Revision 3, AP1000 Human Factors Engineering Integrated System Validation Plan, and may be used only for that purpose.

The information requested to be withheld reveals details of the AP1000 design; sequence and method of construction; and timing and content of inspection and testing. This information was developed and continues to be developed by Westinghouse. The information is part of that which enables Westinghouse to manufacture and deliver products to utilities based on proprietary designs.

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 commercial power reactors without commensurate expenses.

The information requested to be withheld 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.