

SAFETY EVALUATION BY THE OFFICE OF NEW REACTORS
RELATED TO EXEMPTION AND AMENDMENT NO. 22
TO THE COMBINED LICENSE NO. NPF-91
AND LICENSE NO. NPF-92
SOUTHERN NUCLEAR OPERATING COMPANY, INC.
GEORGIA POWER COMPANY
OGLETHORPE POWER COMPANY
MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA
CITY OF DALTON, GEORGIA
VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4
DOCKET NOS. 52-025 AND 52-026

1.0 INTRODUCTION

By letter dated November 27, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13331B502), Southern Nuclear Operating Company (SNC/licensee) submitted license amendment request (LAR) 13-034 and requested that the U.S. Nuclear Regulatory Commission (NRC/Commission) amend the combined licenses (COLs) for Vogtle Electric Generating Plant Units 3 and 4 (VEGP), COL Numbers NPF-91 and NPF-92, respectively. The proposed LAR involves changes to the five Human Factors Engineering (HFE) Technical Reports (prepared by Westinghouse Electric Company (Westinghouse); the NRC reviewed these reports as part of the design certification rule) that are incorporated by reference in the VEGP Updated Final Safety analysis Report (UFSAR). These are:

- HFE Design Verification Plan (APP-OCS-GEH-120) (as amended by LAR 13-010 and License Amendment No. 15)
- HFE Task Support Verification Plan (APP-OCS-GEH-220) (as amended by LAR 13-011 and License Amendment No. 15)
- HFE Integrated System Validation (APP-OCS-GEH-320) (as amended by LAR 13-001 and License Amendment No. 15)
- Human engineering Discrepancy Resolution Process (APP-OCS-GEH-420) (as amended by LAR 13-012)
- Plant Startup HFE Design Verification Plan (APP-OCS-GEH-520) (as amended by LAR 13-013 and License Amendment No. 15)

The requested amendment identifies sections of the five reports that should more appropriately be classified as Tier 2 rather than Tier 2*. The content of these reports that contain inspection, test, analysis, and acceptance criteria (ITAAC) associated with the HFE V&V process remains designated as Tier 2*. Therefore, any change to those portions of the reports requires prior NRC approval via an LAR.

In a letter dated March 7, 2014 (ADAMS Accession No. ML14066A412), the licensee has also requested an exemption from the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, Appendix D, Section VIII.B.6.c, Item (15), "Design Certification Rule for the AP1000 Design, Scope and Contents," to allow a departure from the certified information. The regulation, 10 CFR 52, Appendix D, Section VIII.B.6.c, states that a licensee who references Appendix D may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from certain Tier 2* matters listed in paragraph B.6.c, except under paragraph B.6.b of Section VIII. Section VIII.B.6.c, Item (15), identifies HFE as one of the types of Tier 2* matter within the scope of this regulation. The Licensee has requested an LAR to reclassify portions of five Tier 2* Human Factors (HF) Verification and Validation (V&V) technical reports listed in the UFSAR, Table 1.6-1 and Chapter 18, Subsection 18.11.2. Therefore, to allow these portions of HF information to be reclassified from Tier 2* to Tier 2 prior to achieving full power for each nuclear power plant unit (i.e., VEGP Units 3 and 4), the licensee requests an exemption.

The exemption request did not expand the scope of the license amendment request application as originally noticed and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 21, 2014 (79 FR 3417).

In letters dated May 23, and July 18, 2014 (ADAMS Accession No. ML14143A112 and ML14199A633 respectively), the licensee provided additional information that clarified the application did not expand the scope of the application as originally noticed and did not change the staff's original proposed "no significant hazards consideration" determination published in the *Federal Register* on January 21, 2014 (79 FR 3417).

2.0 REGULATORY EVALUATION

The NRC staff considered the following regulatory requirements in reviewing the licensee's proposed UFSAR changes.

Appendix D, "Design Certification Rule for the AP1000 Design," of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," Section VIII.B.6.a requires NRC approval for departures from Tier 2* information. Because the proposed amendment request involves changes to Tier 2* information, NRC approval is required before making the Tier 2* changes addressed in this departure.

10 CFR 52.63(b)(1) allows a licensee to request NRC approval for an exemption from one or more elements of the certification information. The Commission may grant such a request only if it complies with the requirements of 10 CFR 52.7 which in turn points to the requirements listed in 10 CFR 50.12 for specific exemptions. In addition, 10 CFR 52.63(b)(1) states that an exemption can be approved if the special circumstances present outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. Therefore, any exemption from the Tier 2* information certified by Appendix D to 10 CFR Part 52 must meet the requirements of 10 CFR 50.12, 52.7, and 52.63(b)(1).

3.0 TECHNICAL EVALUATION

3.1 EVALUATION OF EXEMPTION

The regulations in Section III.B of Appendix D to 10 CFR 52 require a holder of a COL referencing Appendix D to 10 CFR Part 52 to incorporate by reference and comply with the requirements of Appendix D, including certified information in Tier 2* of the generic AP1000 Design Control Document (DCD).

The regulation, 10 CFR 52, Appendix D, Section VIII.B.6.c, requires that a licensee who references Appendix D may not, before the plant first achieves full power following the finding required by 10 CFR 52.103(g), depart from Tier 2* matters listed in paragraph B.6.c, except under paragraph B.6.b of Section VIII. Section VIII.B.6.c, Item (15), identifies HFE as one of the types of Tier 2* matter within the scope of this regulation. The licensee has requested an LAR to reclassify portions of five Tier 2* HF V&V technical reports listed in UFSAR, Table 1.6-1 and Chapter 18, Subsection 18.11.2. Therefore, to allow these portions of HF information to be reclassified from Tier 2* to Tier 2 prior to achieving full power for each nuclear power plant unit (i.e., VEGP Units 3 and 4), the licensee requests an exemption.

In summary, NRC approval of LAR 13-034 would allow the licensee to reclassify portions of the five Tier 2* HF V&V technical reports listed in UFSAR, Table 1.6-1 and Chapter 18, Subsection 18.11.2 and amend these reports to clearly identify the parts that remain Tier 2*.

3.1.1 AUTHORIZED BY LAW

This exemption would allow the licensee to implement approved changes to the Tier 2* classification. This is an exemption limited in scope to particular Tier 2* sections. The remaining Tier 2* information, would be subject to full compliance by the licensee as specified in Section III.B of Appendix D to 10 CFR 52. As stated above, 10 CFR 52.63(b)(1) allows the NRC to grant exemptions from one or more elements of the certification information, namely, the requirements of Section III.B of Appendix D to 10 CFR 52. As explained in more detail below in the context of the amendment request associated with the requested exemption, the NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commissions regulations. Therefore, as required by 10 CFR 50.12(a)(1), the exemption is authorized by law.

3.1.2 NO UNDUE RISK TO THE PUBLIC HEALTH AND SAFETY

10 CFR 52, Appendix D, Section III.B requires the licensee to construct and operate the plant in accordance with the approved DCD incorporated by reference into the licensee's licensing basis. The plant-specific Tier 2* DCD will continue to reflect the approved licensing basis for VEGP Units 3 and 4 and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 2* of the plant-specific DCD. These proposed LAR changes are evaluated and found to be acceptable in Section 3.2 of this Safety Evaluation. The proposed exemption would allow the licensee to reclassify Tier 2* information described and justified in the LAR. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that there is no undue risk to public health and safety.

3.1.3 CONSISTENT WITH COMMON DEFENSE AND SECURITY

The proposed exemption would allow the licensee to implement approved changes to the Tier 2* classification. The classification changes are limited to administrative sections of the HF V&V technical reports plans and are not related to the security issues. Therefore, as required by 10 CFR 50.12(a)(1), the staff finds that the exemption is consistent with the common defense and security.

3.1.4 SPECIAL CIRCUMSTANCES

The purpose of the regulation, Appendix D, Section VIII.B.6, as discussed in the Statement of Consideration for the AP1000 Design Certification Final Rule (76 FR 82090), is to differentiate between the information that needs to retain the Tier 2* designation throughout the lifetime of the facility, and that information whose designation would revert to Tier 2 after first full (100%) power. Accordingly, the purpose of Section VIII.B.6.c is to ensure safety significant aspects of the design received the appropriate level of change control. The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section VIII.B.6.c reclassifies only the portions of the five HF V&V technical reports that have no impact on safety, thereby allowing for revisions to portions of these reports using the Tier 2 change process provided in 10 CFR 52, Appendix D, Section VIII.B.5. The remaining portions of the HF V&V technical reports would still be subject to the Tier 2* change process requirements in 10 CFR 52, Appendix D, Section VIII.B.6. The exemption would no longer be necessary when each unit achieves full power following the 10 CFR 52.103(g) finding, at which time the affected Tier 2* information would revert to Tier 2 status and subject to the departure provisions of Section VIII.B.5.

Therefore, special circumstances are present. The V&V technical reports were declared Tier 2* in their entirety rather than identifying specific sections containing ITAAC acceptance criteria (which was the staff's basis for applying Tier 2*). As a consequence administrative sections of the reports are subjected to unnecessary change controls. Accordingly, the staff finds the special circumstances required by 10 CFR 50.12(a)(2)(ii) for the granting of an exemption from Section III.B of Appendix D to 10 CFR 52 exist.

3.1.5 SPECIAL CIRCUMSTANCES OUTWEIGH REDUCED STANDARDIZATION

This exemption would allow the implementation of changes to VEGP Units 3 and 4, Tier 2* information proposed in the LAR. The exemption (reclassification of Tier 2* information) is limited to administrative material. Material related to the design, construction and operation of the facility that supports ITAAC acceptance criteria remain Tier 2*. Based on the ability to more efficiently implement administrative changes this exemption may be requested by other AP1000 licensees and applicants. However, even if other AP1000 licensees and applicants do not request this same departure, the changes proposed by this exemption request do not change the design, construction, or operation of the facility. Only the change control process for administrative sections of the reports changes and this has minimal impact on design standardization and no safety impact. Based on this, as required by 10 CFR 52.63(b)(1), the staff finds that the special circumstances outweigh the potential decrease in safety due to reduced standardization of the AP1000 design.

3.2 EVALUATION OF PROPOSED CHANGES

The staff identified the V&V technical reports as Tier 2* because they contain ITAAC acceptance criteria providing specific measures of how the HFE design will be completed. This

was done to ensure the safety conclusions documented in the Safety Evaluation for the AP1000 Design Certification amendment remain valid. The V&V technical reports were declared Tier 2* in their entirety rather than identifying the specific sections containing ITAAC acceptance criteria. As a consequence administrative sections of the reports are subjected to unnecessary change controls. The proposed changes modify the portions of each of the five reports not associated with the HFE acceptance criteria from Tier 2* to Tier 2. Specifically, the change will clarify bracketed and italicized information, and provide additional notes that specifically identify the procedure sections that remain Tier 2*. The change will also make the title page, list of contributors, revision history, and table of contents, acronym and trademarks, glossary of terms, references, bibliography, and appendices sections of each report Tier 2.

The appendices in each report provide examples of how HFE ITAAC acceptance criteria are met but the acceptance criteria themselves continue to be described in portions of the report that are Tier 2*. The appendices illustrate questionnaires and data collection forms used during Verification and Validation activities. Because the HFE design process is iterative it is important to allow these forms to be flexible so they contain the latest verification and validation process guidance. The ITAAC acceptance criteria described in the Tier 2* portion of the text ensures these appendices meet minimum specifications approved by the staff as part of the Safety Evaluation of the AP1000 Design Certification amendment. These changes are applicable to each document listed in the introduction section of this report.

Conclusions

The staff concludes that the changes proposed in LAR 13-034 conform to HFE related regulatory guidance as explained in the technical evaluation section of this report. The changes are administrative and do not affect Tier 2* information that describes HFE ITAAC acceptance criteria. This revision has, in general, improved usability of the technical reports while maintaining appropriate controls over HFE ITAAC acceptance criterion which supports effective implementation of the associated ITAAC.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations in 10 CFR 50.91(b)(2), the Georgia State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, "Standards for Protection Against Radiation." The NRC staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite. Also, there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (*Federal Register* on January 21, 2014 (79 FR 3417)). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Under 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of the amendment.

Because the exemption is necessary to allow the changes proposed in the license amendment, and because the exemption does not authorize any activities other than those proposed in the license amendment, the environmental consideration for the exemption is identical to that of the license amendment. Accordingly, the exemption meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the exemption.

6.0 CONCLUSION

The staff has determined that pursuant to 10 CFR 52.7, 50.12 and 52.63(b)(1), the exemption: (1) is authorized by law, (2) presents no undue risk to the public health and safety, (3) is consistent with the common defense and security, (4) has special circumstances that outweigh the potential decrease in safety due to reduced standardization, and (5) does not significantly reduce the level of safety at the licensee's facility. Therefore, the staff grants the licensee an exemption from the requirements of 10 CFR 52, Appendix D, Section III.B, to allow a departure from elements of the certification information in Tier 2* of the generic DCD associated with certain portions of the HFE reports.

The staff has concluded, based on the considerations discussed above, that there is reasonable assurance that (1) 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 the health and safety of the public. Therefore, the staff finds the changes proposed in this license amendment acceptable.

The LAR addresses changes to HFE technical reports; where approval of these changes is provided; such approval is only applicable for VEGP Units 3 and 4 and should not be interpreted as generic approval.

7.0 REFERENCES

1. Request for License Amendment Request-Reclassification of Portions of Human Factors Verification and Validation Planning Documents (LAR 13-034) letter from Southern Nuclear Operating Company (SNC), letter dated November 27, 2013 (ADAMS Accession No. ML13331B502) and Supplemented by letters dated March 7, 2014 (ADAMS Accession No. ML14066A412), May 23, 2014 (ADAMS Accession No. ML14143A112), and July 18, 2014 (ADAMS Accession No. ML14199A633)
2. NUREG-0711, Revision 2, "Human Factors Engineering Program Review Model, dated February 28, 2004 (ADAMS Accession No. ML12205A463)
3. NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," dated August 5, 2011 (ADAMS Accession No. ML112061231)
4. APP-OCS-GEH-120, "AP1000 Human Factors Engineering Design Verification Plan," Revision 1, dated August 2012 (Proprietary)
5. APP-OCS-GEH-220, "Human Factors Engineering Task Support Verification Plan," Revision 1, dated August 2013, (Proprietary)

6. APP-OCS-GEH-320, "AP1000 HFE Integrated System Validation Plan," Revision 3, dated August 2013 (Proprietary)
7. APP-OCS-GEH-420, "AP1000 Human Engineering Discrepancy Resolution Process," Revision 1, dated August 2013(Proprietary)
8. APP-OCS-GEH-520, "Plant Startup Human Factors Engineering Verification Plan," Revision 2, dated August 2013 (Proprietary)