



July 6, 2017
RC-17-0093

U.S. Nuclear Regulatory Commission (NRC)
Document Control Desk
Washington, DC 20555

Dear Sir/ Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS), UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
LICENSE AMENDMENT REQUEST - LAR-15-01424
IMPLEMENTATION OF WCAP-15376-P-A, REVISION 1 - "RISK-INFORMED
ASSESSMENT OF THE RTS AND ESFAS SURVEILLANCE TEST
INTERVALS AND REACTOR TRIP BREAKER TEST AND COMPLETION
TIMES"
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

- References:
1. T. D. Gatlin, SCE&G, letter to Document Control Desk, NRC, *License Amendment Request - LAR-15-01424 Implementation of WCAP-15376-P-A, Revision 1 – "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times,"* dated December 16, 2015 [ML15356A048]
 2. S. A. Williams, NRC, letter to G. A. Lippard, SCE&G, *Virgil C. Summer Nuclear Station, Unit 1 - Supplemental Information Needed for Acceptance of License Amendment Request for Implementation of WCAP-15376-P-A, Rev. 1 (CAC NO. MF7196),* dated February 22, 2016 [ML16032A170]
 3. S. A. Williams, NRC, letter to G. A. Lippard, SCE&G, *Virgil C. Summer Nuclear Station, Unit No. 1 – Request for Additional Information RE: License Amendment Request for Implementation of TSTF-411 (WCAP-15376-P-A), Revision 1 (CAC NO. MF7196),* dated November 8, 2016 [ML16302A125]
 4. G. A. Lippard, SCE&G, letter to NRC Document Control Desk, *License Amendment Request – LAR-15-01424, Implementation of WCAP-15376-P-A, Revision 1, Response to Request for Supplemental Information,* dated March 7, 2016 [ML16069A021]
 5. G. A. Lippard, SCE&G, letter to NRC Document Control Desk, *License Amendment Request - LAR-15-01424 Implementation of WCAP-15376-P-A, Revision 1 – "Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times" Response to Request for Additional Information,* dated February 6, 2017 [ML17037D369]

6. S. A. Williams, NRC, letter to G. A. Lippard, SCE&G, *Virgil C. Summer Nuclear Station, Unit No. 1 – Request for Additional Information RE: License Amendment Request for Implementation of TSTF-411 (WCAP-15376-P-A), Revision 1 (CAC NO. MF7196)*, dated May 11, 2017 [ML17095A284]

7. M. Orenak, NRC, email to T. Stewart, SCE&G, *Virgil C. Summer Nuclear Station, Unit No. 1 - Request for Additional Information RE: License Amendment Request for Implementation of TSTF-411 (WCAP-15376-P-A), Revision 1 (CAC No. MF7196)*, dated June 15, 2017

8. G. A. Lippard, SCE&G, letter to NRC Document Control Desk, *License Amendment Request - LAR-15-01424 Implementation of WCAP-15376-P-A, Revision 1 – “Risk-Informed Assessment of the RTS and ESFAS Surveillance Test Intervals and Reactor Trip Breaker Test and Completion Times” Response to Request for Additional Information*, dated June 22, 2017 [ML17174B263]

South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority pursuant to 10 CFR 50.90, submitted License Amendment Request LAR-15-01424 per Reference 1. In References 2 and 3, the NRC requested that SCE&G provide supplemental and additional information to assist in the review of Reference 1. SCE&G provided a response to the NRC requests in References 4 and 5. NRC review of Reference 5 determined that follow-up requests for additional information (RAIs) were required and a RAI was issued per Reference 6. Per References 7 and 8, VCSNS is to provide a response to follow-up RAI 1 by July 10, 2017. This letter's Attachment contains SCE&G's response to the follow-up RAI 1.

If you have any questions regarding this submittal, please contact Mr. Bruce L. Thompson at (803) 931-5042.

I certify under penalty that the foregoing is correct and true.

5/6/17
2/7/17 3/2/17
Executed on

George A. Lippard
George A. Lippard

TS/GAL/rp

Attachment: VCSNS Response to Request for Additional Information

cc: Without Attachments unless noted

K. B. Marsh	W. M. Cherry	K. M. Sutton
S. A. Byrne	C. Haney	NSRC
J. B. Archie	S. A. Williams (with Attachment)	RTS (CR-15-01424)
N. S. Carns	NRC Resident Inspector	File (813.20)
J. H. Hamilton	S. E. Jenkins (with Attachment)	PRSF (RC-17-0093) (with Attachment)
S. M. Shealy	Paulette Ledbetter (with Attachment)	

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Attachment
CR-15-01424
RC-17-0093
Page 1 of 3

**VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12**

ATTACHMENT

VCSNS RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

By letter dated December 16, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15356A048), as supplemented by letter dated March 7, 2016 (ADAMS Accession No. ML16069A021), and February 6, 2017 (ADAMS Accession No. ML17037D369), South Carolina Electric & Gas Company (SCE&G, the licensee), submitted a license amendment request (LAR) for the Virgil C. Summer Nuclear Station, Unit No. 1 (VCSNS). The licensee proposes to revise Technical Specification (TS) 3/4.3.1, "Reactor Trip System Instrumentation," and TS 3/4.3.2, "Engineered Safety Feature Actuation System Instrumentation," to implement the allowed outage time, bypass test time, and surveillance frequency changes approved by the U.S. Nuclear Regulatory Commission (NRC) in Technical Specification Task Force (TSTF) Traveler TSTF-411, Revision 1, "Surveillance Test Interval Extensions for Components of the Reactor Protection System (WCAP-15376-P)" (ADAMS Accession No. ML022470164).

The NRC staff has reviewed the February 6, 2017, response to a request for additional information (RAI), and has determined follow-up RAIs are needed to complete NRC staff review.

Follow up RAI 1:

In the cover letter to the February 6, 2017, supplement, the licensee stated that the probabilistic risk assessment (PRA) model was peer reviewed in June 2016 and that the final version of the Peer Review Report has not yet been received by VCSNS. As such, the facts and observations (F&Os) from this peer review were not included in the LAR, as supplemented. In addition, the response to RAI 1 noted some open F&Os from a previous peer review. Therefore, the NRC staff requests the following additional information.

- a. Please confirm what impact, if any, the June 2016 peer review had on the PRA model of record used to support the LAR, and as supplemented, by RAI responses.
- b. In 2011, the licensee performed a Capability Category II gap self-assessment for the PRA model against the Regulatory Guide 1.200, Revision 2, and the ASME/ANS PRA Model Internal Events Standard as a follow-up to a 2007 review against Regulatory Guide 1.200, Revision 1. The response to RAI 1 identified that some open suggestions/findings had not been resolved. Finding 6_9 involved system-related screenings from the PRA model as specified in system supporting requirements. The licensee's resolution states that re-screening of all of the systems is not yet complete.

Please complete the resolution of finding 6_9, and provide an updated resolution of this finding and an assessment of its significance to the application. Alternatively, please justify why resolution of this Finding will not affect this application.

SCE&G Response

- a. The June 2016 peer review had no impact on the PRA model of record used to support the LAR, the LAR supplemental response, or the LAR RAI responses. The model evaluated in the peer review was a model updated to support planned, future risk applications for the Virgil C. Summer Nuclear Station (VCSNS). The updates were not required to support the WCAP-15376 LAR and the peer review was not required to support the WCAP-15376 LAR. Additionally, VCSNS has reviewed the findings from the 2016 peer review and determined they are predominantly related to documentation issues, procedural updates and over-conservative treatment in some scenarios. The impact on Core Damage Frequency (CDF) is expected to be insignificant.

- b. To address the impact of this finding on the model, VCSNS generated new screening criteria that meet the PRA Standard. Following this, VCSNS reviewed all of the modeled systems to identify components and failure modes that initially (during model development) screened-out based on the now-outdated criteria. Each of these components/failure modes were then evaluated using the new criteria and new basic events were developed to represent those which no longer screen-out. A sensitivity analysis was performed by incorporating the new basic events and quantifying the resulting model. The results show that incorporating the new basic events has an insignificant impact on CDF and Large Early Release Frequency (LERF). CDF increased by $6.8E-09$ yr, and LERF increased by $1.1E-10$ /yr. Additionally, this screening issue does not impact the actions in the WCAP-15376 human reliability analysis, does not increase the ATWS contribution to CDF, and does not impact the total transient event frequency at VCSNS. For these reasons, resolution of this finding does not impact implementation of the WCAP-15376 LAR.