



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 19, 2013

Mr. Thomas D. Gatlin
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Post Office Box 88, Mail Code 800
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (VCSNS) – REQUEST
FOR ADDITIONAL INFORMATION (TAC NO. ME7586)

Dear Mr. Gatlin:

By letters dated November 15, 2011, January 26 and October 10, 2012, the South Carolina Electric & Gas Company (SCE&G, the licensee) submitted a license amendment request (LAR) to revise Facility Operating License Number NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The LAR would permit transition of the fire protection licensing basis from Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.48(b), to 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805" (NFPA 805).

The staff has determined that additional information is needed to continue the review as discussed in the Enclosure. We request that SCE&G respond to these RAIs by February 25, 2014. Please note that the staff's review is continuing and further RAIs may be developed.

Sincerely,

A handwritten signature in black ink that reads "Shawn Williams".

Shawn Williams, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosure: Request for Additional Information

cc w/encl: Distribution via Listserv

REQUESTS FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST TO ADOPT
PERFORMANCE-BASED NATIONAL FIRE PROTECTION ASSOCIATION
STANDARD 805 FOR FIRE PROTECTION FOR
VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1
DOCKET NO. 50-395

Safe Shutdown Analysis (SSA) Request for Additional Information (RAI) 21

License Amendment Request (LAR) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML1321A172) Attachment X, "Other Request for Approval" requests approval of thermoset cables in cable trays as an acceptable configuration meeting National Fire Protection Association Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants", 2001 Edition, (NFPA 805), Section 4.2.3.3(b) requirements for "no intervening combustible materials or fire hazards." Results of various fire testing programs (Nuclear Energy Institute/Electrical Power Research Institute (NEI/EPRI), Cable Response to Live Fire (CAROLFIRE), Cable Heat Release, Ignition, and Spread in Tray Installations During Fire (CHRISTI-FIRE), Direct Current Electrical Shorting in Response to Exposure Fire (DESIREE-FIRE), etc.) determined that thermoset cables are combustible. The NRC staff determined that this approval request is more suited to evaluation using risk-informed, performance-based methods.

LAR Attachment X does not state whether the request applies to fire areas that credit deterministic compliance in accordance with NFPA 805 Section 4.2.3, or performance-based compliance in accordance with the fire modeling requirements of NFPA 805 Section 4.2.4.1, or performance-based compliance in accordance with the fire risk evaluation requirements of NFPA 805 Section 4.2.4.2.

Provide the following:

- a. For each fire area where the LAR Attachment X approval request applies:
 - i. Identify the compliance strategy used to comply with NFPA 805 (Section 4.2.3, 4.2.4.1, or 4.2.4.2).
 - ii. Provide a description of the physical configuration, explaining the nature and arrangement of the 20-foot separation zone, the extent of cable trays that intervene in the zone, and the potential plant impacts that could result if the zone is compromised (ie. what safe shutdown impacts would result with significant fire propagation across the zone).
- b. For each pair of redundant components that share a 20-foot separation zone where the intervening combustible/fire hazard requirement cannot be met, the NRC staff determined that these should have been considered variances from deterministic requirements (VFDRs). The NRC staff also noted that if the risk is as low as stated in

the LAR based on qualitative analysis, these VFDRs should have been included in the fire area delta risk calculations analyzed using approved performance-based methods and submitted for NRC staff approval. Process each of the redundant components that share a 20-foot separation zone where the intervening combustible/fire hazard requirement cannot be met as a VFDR and include on a fire area basis the delta risk calculations and plant total risk numbers in accordance with NFPA 805 Section 4.2.4.2.

December 19, 2013

Mr. Thomas D. Gatlin
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Post Office Box 88, Mail Code 800
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1 (VCSNS) – REQUEST
FOR ADDITIONAL INFORMATION REGARDING THE NFPA-805 LICENSE
AMENDMENT REVIEW (TAC NO. ME7586)

Dear Mr. Gatlin:

By letters dated November 15, 2011, January 26 and October 10, 2012, the South Carolina Electric & Gas Company (SCE&G, the licensee) submitted a license amendment request (LAR) to revise Facility Operating License Number NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The LAR would permit transition of the fire protection licensing basis from Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.48(b), to 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805" (NFPA 805).

The staff has determined that additional information is needed to continue the review as discussed in the Enclosure. We request that SCE&G respond to these RAIs by February 25, 2014. Please note that the staff's review is continuing and further RAIs may be developed.

Sincerely,

/ RA /

Shawn Williams, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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* By email

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