



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

December 2, 2103

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 1 – REQUEST FOR
ADDITIONAL INFORMATION (TAC NO. MF2722)

Dear Mr. Gatlin:

By letter dated June 13, 2013, the South Carolina Electric & Gas Company submitted the emergency core cooling system model revisions annual report.

The staff has determined that additional information is needed to continue the review as discussed in the Enclosure. Please provide a response within 30 days of the issuance of this letter.

Sincerely,

A handwritten signature in black ink, reading "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

EMERGENCY CORE COOLING SYTEM EVAULATION MODEL REVISIONS REPORT

VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1

DOCKET NO. 50-395

1.0 INTRODUCTION AND REGULATORY BASIS

Pursuant to Title 10 of the Code of *Federal Regulations* (10 CFR) 50.46(a)(3), South Carolina Electric and Gas Company (the licensee), submitted a report describing “changes and enhancements to the ECCS [emergency core cooling system] Evaluation Models,” and an estimate of the effects of the changes and enhancements on the predicted peak cladding temperature for Virgil C. Summer Nuclear Station, Unit 1. The report was submitted by letter dated June 13, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13169A054).

Acceptance criteria for ECCSs for light water nuclear power reactors are found in 10 CFR 50.46. In particular, 10 CFR 50.46(a)(3)(i) requires licensees to estimate the effect of any change to or error in an acceptable evaluation model or in the application of such a model to determine if the change or error is significant. For the purpose of 10 CFR 50.46, a significant change or error is one which results in a calculated peak fuel cladding temperature difference by more than 50 degrees Fahrenheit (°F) from the temperature calculated for the limiting transient using the last acceptable model, or is a cumulation of changes and errors such that the sum of the absolute magnitudes of the respective temperature changes is greater than 50 °F.

For each change to or error discovered in an acceptable evaluation model or in the application of such a model, paragraph (a)(3)(ii) to 10 CFR 50.46 requires the affected licensee to report the nature of the change or error and its estimated effect on the limiting ECCS analysis to the Commission at least annually¹. If the change or error is significant, the licensee is required to provide this report within 30 days and include with the report a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 10 CFR 50.46 requirements.

Additional clarification concerning the intent of the reporting requirements is discussed in the *Federal Register* (53 Fed. Reg. 35996):

[Paragraph (a)(3) of section 50.46] requires that all changes or errors in approved evaluation models be reported at least annually and does not require any further action by the licensee until the error is reported. Thereafter, although reanalysis is not required solely because of such minor error, any subsequent calculated evaluation of ECCS performance requires use of a model with such error, and any prior errors, corrected. The NRC needs to be apprised of even minor errors or changes in order to ensure that they agree with the applicant's or licensee's assessment of the significance of the error or change and to maintain cognizance of modifications made subsequent to NRC review of the evaluation model.

¹ The licensee stated in its June 13, 2013, letter, that the subject report is an annual report.

Significant errors require more timely attention since they may be important to the safe operation of the plant and raise questions as to the adequacy of the overall evaluation model. More timely reporting is required for significant errors or changes. The final rule revision also allows the NRC to determine the schedule for reanalysis based on the importance to safety relative to other applicant or licensee requirements.

The NRC staff considered the discussion in the Federal Register in its evaluation of the error report submitted by the licensee.

2.0 REQUEST

Page 6 of 7 of Attachment II to the June 13, 2013, letter lists an "Upflow Conversion" under Line Item B., "Planned Plant Modification Evaluations," with an associated estimated effect on predicted peak cladding temperature (PCT) estimated as 148 °F.

Since 148 °F exceeds the 50 °F threshold at which the NRC defines a significant change and the submitted report is described as an annual report, it is not clear how this change applies to the plant nor how the report complies with 10 CFR 50.46(a)(3)(ii) requirements. Therefore please provide the following additional information.

RAI 1

Provide a more detailed description of the upflow conversion and explain its implementation status.

RAI 2

Explain how the June 13, 2013, report, which appears to be the first disclosure of this model change to the NRC, satisfies the portion of 10 CFR 50.46(a)(3)(i) requiring significant ECCS evaluation model changes to be reported to the NRC in 30 days.

RAI 3

When a significant (i.e., >50 °F) ECCS evaluation model error or change is reported to the NRC, 10 CFR 50.46(a)(3)(ii) requires that "the applicant or licensee shall... include with the report a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 50.46 requirements..." Please provide a disposition for this requirement that is consistent with the response to Items 1) and 2), above.

December 2, 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 1 – REQUEST FOR
ADDITIONAL INFORMATION (TAC NO. ME2899)

Dear Mr. Gatlin:

By letter dated June 13, 2013, the South Carolina Electric & Gas Company submitted the emergency core cooling system model revisions annual report.

The staff has determined that additional information is needed to continue the review as discussed in the Enclosure. Please provide a response within 30 days of the issuance of this letter.

Sincerely,
/RA/

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

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