



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

October 26, 2009

Mr. Jeffrey B. Archie
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Post Office Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 – REQUEST FOR
ADDITIONAL INFORMATION (TAC NO. ME0663)

Dear Mr. Archie:

By letter dated February 17, 2009 (Agencywide Documents Access and Management System Accession No. ML090720887), South Carolina Electric & Gas Company (SCE&G, the licensee), submitted a license amendment request (LAR) for Virgil C. Summer Nuclear Station (VCSNS). The LAR proposes to adopt an alternative radiological source term at VCSNS, thereby changing the licensing basis in accordance with Title 10 of the *Code of Federal Regulations* Section 50.67. The LAR provides revised design basis accident analyses that calculate new design basis dose consequences and supports proposed VCSNS technical specification changes.

We find that additional information is needed in order to complete our review of the subject LAR for VCSNS as stated in the Enclosure. If you have any questions regarding this matter, please contact Bob Martin, at (301) 415-1493.

Sincerely,


Robert E. Martin, 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: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE LICENSE AMENDMENT REQUEST
TO IMPLEMENT THE ALTERNATIVE SOURCE TERM AT
VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)

TAC NO. ME0663

Meteorological

1. Please explain how the VCSNS hourly meteorological data from 2002 through 2006, as provided in support of the February 17, 2009, alternative source term (AST) license amendment request (LAR), in general, was processed from the raw measurements and discuss the VCSNS site meteorological characteristics. The U.S. Nuclear Regulatory Commission (NRC) staff has noted some apparent anomalies in temporal trends and between measurement heights in the five year data file. The following are several examples of staff observations and estimates, but should not be regarded as all inclusive.
 - In 2002, winds at both the 10- and 61-meter levels appear to be reported from the north about 14 percent of the year, whereas from 2003 through 2006 northerly winds were reported to occur only about 3 to 6 percent of the time.
 - In 2003, wind direction was reported as either 360° or 0° with a wind speed of 0.3 meters per second for a consecutive 19 hour period on Julian days 112 and 113. In 2002, beginning in hour 23 of Julian day 280, the reported wind direction at both heights was identical or within two degrees of each other for 77 consecutive hours.
 - In 2005, wind speed was reported to decrease with height about 15 percent of the year. Further, in 2005, the 10-meter wind speed was reported to remain unchanged from the previous hour about 12 percent of the time.
2. What is the scale of Figure 2 of Calculation No. DC00040-079 in Attachment 10 of the VCSNS LAR dated February 17, 2009? Where on the figure are the assumed points of release from the Refueling Water Storage Tank (RWST) Overflow, the Reactor Building wall, the Pressure Relief Area, and the three sets of safety and relief valves?
3. With respect to the summary of the ARCON96 inputs listed in Table 5.1-3 of Calculation No. DC00040-079:
 - Why was zero meters used as the release height input for the Reactor Building wall rather than either the control room intake height or the midpoint height of the Reactor Building?

Enclosure

- What is the basis for the release height of 8.2 meters for the Pressure Relief Area?
 - Confirm that the directions from the intake to release are as follows: (a) MS OR 'A' to Intake 'A' is 64°, (b) MS SR's 'A' to Intake 'A' is 57°, (c) RWST Overflow to Intake 'A' is 22°, and (d) RWST Overflow to Intake 'B' is 18°.
4. Given that Intakes A and B are near the corner of the control building, furthest from the postulated release locations, please provide the location of the control room envelop on Figure 2. What atmospheric dispersion factors (x/Q values) were used as inputs to the dose assessments for unfiltered inleakage into the control room and why are use of those values appropriate?
 5. Regarding the design basis accidents analyzed in support of this LAR, please confirm that the generated x/Q values model the limiting doses and that all potential release scenarios were considered, including those due to loss of offsite power or other single failures.
 6. Section 4.1 of Attachment 2 to the February 17, 2009, LAR notes that use of the x/Q values previously approved by the NRC staff during the initial facility licensing is acceptable for use in the alternative source term analyses as discussed in Regulatory Guide 1.183, Section 5.3. The exclusion area boundary (EAB) and low population zone (LPZ) x/Q values are listed in Table 4.1-1 of the LAR. However, the NRC staff notes that these values are not the same as those in NUREG-0717, Supplement 4, "Safety Evaluation Report related to the operation of Virgil C. Summer Nuclear Station, Unit No. 1," dated August 1982. Therefore, please cite a reference for NRC approval of the current EAB and LPZ licensing basis x/Q values used in support of the current LAR.

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