

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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VICE PRESIDENT AND GROUP EXECUTIVE  
NUCLEAR OPERATIONS

December 17, 1981

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: V. C. Summer Nuclear Station  
Docket No. 50/395  
Technical Specification  
Radiation Monitoring

Dear Mr. Denton:

This letter presents the SCE&G position on a requested change to the Technical Specifications for Virgil C. Summer Nuclear Station. The specification of interest is 3.11.2.1 relating to gaseous effluents. In particular it relates to an entry in Table 4.11-2 referenced by surveillance requirement 4.11.2.1.2.

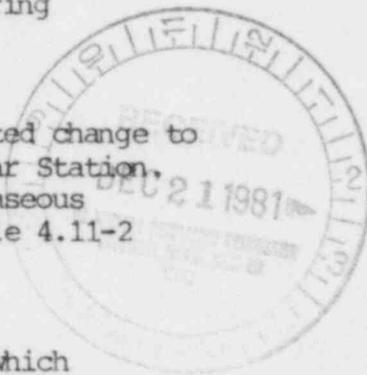
The last entry in this table specifies an LLD of  $1 \times 10^{-6}$   $\mu$  ci/ml for the continuous noble gas monitors which observe releases from the main plant vent and the reactor building purge. We are suggesting a change to  $2 \times 10^{-6}$   $\mu$  ci/ml (for Kr-85) as described in our FSAR (Pgs. 11.4-8 to 11.4-10). The specific guidance for this surveillance requirement is found in Regulatory Guide 1.21 Appendix A, section A.1.C., which states that the sensitivity of gross radioactivity measurements should be sufficient to permit measurement of a small fraction of the activity which would result in an annual air dose of 10 millirads due to gamma radiation at or beyond the site boundary.

The following site specific information can be used to show compliance with this guide.

Total Postulated noble gas released from the plant = 3100 ci/yr  
(Final Environmental Statement (FES) Table 4.5)

Postulated Noble gas gamma dose = 0.23 mrem/yr  
(FES Table 4.9)

Postulated Noble gas Beta dose = 0.57 mrem/yr  
(FES Table 4.9)



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So, the postulated release at the Virgil C. Summer Nuclear Station to give a 10 mrem/yr gamma dose to the maximally exposed individual is

$$1.34 \times 10^5 \text{ ci/yr}$$

The typical main plant vent flow is 175,388 CFM (FSAR Fig. 9.4-9)

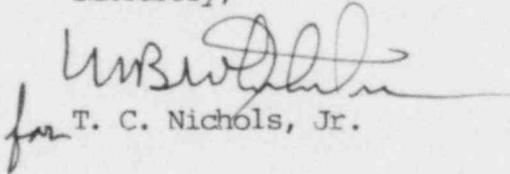
A proposed increase of 30% to this rate will not change the conclusions reached below.

The average concentration in a release that would lead to an 10 mrem dose is given by the ratio of yearly release and yearly total flow. The average concentration =  $52 \times 10^{-6} \mu\text{ci/ml}$ . A similar calculation for beta dose gives  $42 \times 10^{-6} \mu\text{ci/ml}$ .

Our installed instrumentation is sensitive to  $2 \times 10^{-6} \mu\text{ci/ml}$  which is approximately 1/20th of these concentrations. It could thus detect 1/20th of the maximum allowed dose if the release persisted for an entire year or 1/7300th if it lasted for one day. Since most releases will probably come from the reactor purge which has a maximum flow of only 20,000 CFM. The detection fraction will actually be even smaller than indicated by the above calculations. Clearly, a LLD of  $2 \times 10^{-6} \mu\text{ci/ml}$  (for Kr-85) will allow us to detect small fractions (less than 10%-25%) of the regulatory limit found in Regulatory Guide 1.21. We can see no justification to cause us to replace our existing monitors with those that conform to the non site specific Standard Radiological Effluent Technical Specifications nominal value of  $1 \times 10^{-6} \mu\text{ci/ml}$ . This conclusion is in exact agreement with the position taken by the NRC staff on pages 11-20 and 11-23 of the Safety Evaluation Report.

SCE&G considers this adequate justification for our present design and requests your immediate attention be given to this matter.

Sincerely,

  
for T. C. Nichols, Jr.

JB:TCN:tdh

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