



DIVISION OF NATURAL SCIENCES  
AND MATHEMATICS

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March 6, 1985

Ms. Eleanor Adensam  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Ms. Adensam:

The EPA has recently provided copies of a field study performed by the EPA at the Savannah River Plant in 1982, an assessment of SRP releases and airborne release models. Item 14 in my comments on the Vogtle DES was written without knowledge of this EPA report. The earlier comments should be modified to reflect this new information.

An addendum to item 14 reflecting this new information is attached along with updated references. Thanks for your attention to this matter.

Sincerely,

W.F. Lawless, Assistant Professor  
of Mathematics

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Provide laboratory permeability tests conducted on core samples from marl exploration holes; provide core sampling techniques, core sample depth, core sample location and other pertinent data. Provide field test correlations for the same core sample locations.

The VEGP has stated the marl depth is 130 feet below the surface. Confined aquifer well 34 does not appear to support this contention. Which wells do and which do not? Why was well 34 located in the river flood plain? Well 34 appears to be on the VEGP site (FSAR Figure 2.4.12.6) and appears to contradict the VEGP argument about the VEGP site being located on an interfluvial high. Provide a detailed explanation of where the VEGP interfluvial high is theoretically intact and not intact and relate to the VEGP geography over the entire surface of the plant site and to the marl underlying VEGP. Explain where the marl boundaries are located.

22. Addendum to item 14 above The EPA recently released their findings from a one-week study of Savannah River Plant airborne emissions undertaken on December 13-15, 1982.(13) In discussions with the EPA, (14) the SRP data on strontium-90 and iodine-131 concentrations in milk appear to be confounded by atmospheric weapons test fallout, (8,11,13,14) and according to the EPA, leave it uncertain whether the strontium-90 milk contamination can be attributed to weapons test fallout, to SRP emissions, or to a combination.(14) However, in its report, the EPA described the strontium-90 concentrations in the single milk sample

collected from the SRP area during the EPA field studies, "A 1982 composite milk sample from the southeastern states was reported [by the EPA (15)] to contain  $1.8 \pm 0.6$  pCi/L of Sr-90, exactly the concentration measured in the milk collected from site No. 14 [a 1 gal milk sample collected about 32 km northwest of SRP plant center]." (13) The SRP publishes, in annual monitoring reports, strontium-90 concentrations in milk samples collected from seven stations at varying distances surrounding the SRP. (11) Comparing the composite milk sample reported by the EPA against the 1982 SRP collected milk samples from Waynesboro, GA (42 km southwest of SRP plant center, the location of the SRP reported 1982 maximum strontium-90 concentration in milk (11)), the comparison is found to be significant ( $t(12) = 2.48$ ,  $p < .05$ ). That is to say, there is a significant difference between mean strontium-90 concentrations in milk reported by SRP at this location in comparison to the reported EPA southeastern composite milk sample. The significance appears to hold when comparing 1982 and 1983 SRP data from sites within 50 km of SRP plant center to the U.S. EPA data for strontium-90 milk concentrations, especially when selecting stations along the maximum and secondary maximum prevailing wind paths (southeasterly and northerly on the surface changing to northeasterly and southwesterly at the 300 ft elevations (16)).

10. W.F. Lawless, Savannah River Plant Offsite Radioactive Releases, a draft report planned for journal publication (ca. January, 1985)
11. Environmental Monitoring In The Vicinity Of The Savannah River Plant, Annual Report for 1982, DuPont Rep. DPSPU 83-30-1 (ca. 1982).
12. A. Einstein, Sidelights of Relativity, EP Dutton & Co., Inc, NY, p. 27-45 (1923).
13. An Airborne Radioactive Effluent Study at the Savannah River Plant, an EPA report describing a one week field study during December 13-15 1982, on the SRP plant site, to confirm SRP source - term measurements and pathway calculations for radiation exposures to humans offsite the SRP, Rep. EPA 520/5-84-012 (1984).
14. C. Porter, U.S. EPA, Technical Services Branch, Eastern Environmental Radiation Facility, P.O. Box 3009, Montgomery, AL, 36193, personal communication, January 23, 1985.
15. Environmental Radiation Data, Report 30, a U.S. EPA report publishing data from the ERAMS network: Environmental Radiation Ambient Monitoring System (ERAMS); the reports are published quarterly with different title and reference report numbers; EPA Region IV consists of the southeastern states and encompasses 11 reporting stations from the following states: AL, FL, GA, KY, MS, NC, SC, TN (3), and the Panama Canal; the reporting station in SC is Charleston and in GA it is Atlanta; Rep. EPA 520/5-6-83-006 (1983).

16. J.W. Fenimore, R. L. Hooker, The Assessment of Solid Low-Level Waste Management at the Savannah River Plant, an SRP Rep. DPST-77-300 (1977).