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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
GEORGIA POWER COMPANY, <u>et al.</u>)	Docket Nos. 50-424
)	50-425
(Vogtle Electric Generating Plant,)	(OL)
Units 1 and 2))	

APPLICANTS' STATEMENT OF MATERIAL FACTS AS TO WHICH
THERE IS NO GENUINE ISSUE TO BE HEARD REGARDING
JOINT INTERVENORS' CONTENTION 7 (GROUND-WATER)

Pursuant to 10 C.F.R. § 2.749(a), Applicants submit, in support of Applicants' Motion for Summary Disposition of Joint Intervenor's Contention 7, that there is no genuine issue to be heard with respect to the following material facts:

1. Applicants have extensively explored the geology and hydrogeology at and in the vicinity of Plant Vogtle. Affidavit of Thomas W. Crosby, Clifford R. Farrell, and L.R. West (Affidavit of Crosby et al.), ¶¶ 14-20.

2. Three aquifers exist beneath the VEGP site. In order of increasing depth, they are: (1) the water-table aquifer, (2) the Tertiary aquifer; and (3) the Cretaceous aquifer. Id., ¶¶ 11-13.

3. At the VEGP site, the Tertiary and Cretaceous aquifers are believed to be hydraulically connected. Id., ¶ 21.

4. At VEGP, the Tertiary/Cretaceous aquifer system is overlain, separated from the water-table aquifer, and confined by a layer of calcareous clay called the Blue Bluff marl. Id., ¶¶ 12, 21.

5. At VEGP, the marl is approximately 70 feet thick. Id., ¶ 21.

6. The hydraulic conductivity of the marl is between 10^{-7} cm/sec and 10^{-10} cm/sec. Materials with such low hydraulic conductivity are qualitatively considered to be impermeable. Measurements of the hydraulic conductivity of the marl at 80 intervals of varying depths in 22 exploratory holes confirmed that the marl is effectively impermeable. Id., ¶¶ 26-28.

7. The marl is continuous at VEGP. It has no voids, open joints or fractures. The continuity of the marl has been demonstrated by drilling and coring, by visual inspection of cored samples, by inspection of the marl surface during site excavation, by inspection of marl outcrops along the Savannah River, and by comparison of water levels in observation wells open to the water-table aquifer with those observed in wells open to the confined aquifer immediately below the marl. Id., ¶ 29-34.

8. The VEGP site is on an interfluvial ridge (interfluve). The river, streams, and ponds bordering the interfluve have cut down to the marl. Groundwater in the water-table aquifer at VEGP discharges into the streams bordering the interfluve. Id., ¶¶ 22-24, 36.

9. The marl underlies the entire interfluve and extends beyond it. Id., ¶ 22-24, 27.

10. A significant spill of radioactive liquid at VEGP is extremely unlikely. Tanks and related piping containing radioactive liquids are designed and constructed to stringent standards. Safety-related tanks and related piping are designed and constructed in accordance with Regulatory Guide 1.26. Non-safety related tanks and related piping are designed and constructed in accordance with Regulatory Guide 1.143. Affidavit of D.S. Jagannathan, Stephen J. Cereghino, and Mark L. Mayer (Affidavit of Jagannathan et al.), ¶ 4.

11. Indoor tanks, other than those in containment, are located in rooms that have as a minimum 2-foot thick concrete walls; that either have curbs or watertight doors, or are entombed; and that are equipped with leak-detecting drain systems. The indoor tanks are constructed of stainless steel or Inconel. The buildings in which these tanks are located are constructed of reinforced concrete and are designed to withstand either safe shutdown earthquake or operating basis earthquake conditions. Id., ¶¶ 5-8.

12. There are two potentially radioactive tanks per reactor unit located outside of buildings -- the refueling water and reactor makeup water tanks. These tanks are designed for Seismic Category 1 conditions and are constructed of cylindrical, reinforced-concrete shells that are a minimum of 2-foot thick. Each tank is lined with a continuous stainless steel liner plate to ensure leaktight integrity, and each is equipped with a perimeter dike and alarms. Piping running between these outdoor tanks and the Auxiliary Building are enclosed in Seismic Category 1 tunnels. Id., ¶ 9.

13. The boron recycle holdup tank (RHT) and the waste evaporator concentrates holdup tank (WECHT) are the tanks with the highest specific isotopic activity. These two tanks are both located in the Auxiliary Building. The Auxiliary Building itself is a Seismic Category 1, reinforced-concrete structure designed to withstand the safe shutdown earthquake without fracture of the walls or basemat, and is designed to be water-tight. Id., ¶ 7, 10.

14. If a spill of radioactive liquid were to occur, the marl would prevent vertical migration of the spill and hence would prevent contaminants from reaching the Cretaceous or Tertiary aquifers. Affidavit of Crosby et al., ¶ 25.

15. While the Cretaceous aquifer has been contaminated by volatile organics at the Savannah River Plant, such experience is inapplicable to VEGP. The contamination at SRP stemmed from

the use of waste seepage basins, which are not used at VEGP, and occurred in an area where the marl was not present. Id., ¶¶ 60-67.

16. Contamination of the Cretaceous aquifer at SRP may also have been facilitated by an improperly grouted well casing. At VEGP, however, holes and wells through the marl have been grouted (or will be grouted prior to plant operation) by the Tremie method, which assures the integrity of the grout seal. Although Applicants lack documentation showing that three of the exploratory holes have been grouted (holes 236, 237, and 239, which Applicants believe were grouted), these three holes are not in the spill flow path, are beyond the lateral extent of the water-table aquifer at VEGP, and consequently could not be reached by a spill. Id., ¶¶ 68-72.

17. Spill migration would therefore be lateral through the water-table aquifer. Contamination of ground-water in the water-table aquifer would be limited to the interfluvial ridge on which the VEGP site is located. Id., ¶¶ 25, 35-37.

18. Contaminated ground-water in the water-table aquifer would move in the direction of decreasing hydraulic head. From the power block, the hydraulic head of the water-table ground-water decreases to the northwest, in the direction of Mathes Pond. Id., ¶¶ 25, 35.

19. Applicants have estimated the time it would take a spill to reach Mathes Pond to be 350 years. In considering the significance of a core-melt liquid-pathway scenario, the NRC staff assumed a 15-year travel time estimate. The NRC staff's assumption is based only on travel through the backfill around the power block structures (550 feet); it discounts travel from the backfill to Mathes Pond (an additional 2850 feet). Id., ¶¶ 39-43.

20. Based on either of these travel-time estimates, a worst case spill of radioactive liquid at VEGP would not result in 10 C.F.R. Part 20, Appendix B, Table II, Column 2 limits being exceeded off-site. Id., ¶¶ 43-56.

Respectfully submitted,



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