UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

APPLICANTS' MOTION FOR SUMMARY DISPOSITION OF JOINT INTERVENORS' CONTENTION 7 (GROUND-WATER)

Pursuant to 10 C.F.R. § 2.749, Applicants hereby move the Atomic Safety and Licensing Board for summary disposition in Applicants' favor of Joint Intervenors' Contention 7. As grounds for the motion, Applicants submit that there is no genuine issue of material fact to be heard and that Applicants are entitled to a decision in their favor as a matter of law. In support of this motion, Applicants attach "Applicants' Statement of Material Facts as to Which There is No Genuine Issue to be Heard Regarding Joint Intervenors' Contention 7," Affidavit of Thomas W. Crosby, Clifford R. Farrell, and L. R. West (hereinafter Affidavit of Crosby et al.), and Affidavit of D. S.

Jagannathan, Stephen J. Cereghino, and Mark L. Mayer (hereinafter Affidavit of Jagannathan et al.).

I. Procedural Background

Joint Intervenors' Contention 7 states:

> Applicant has not adequately addressed the value of the groundwater below the plant site and fails to provide adequate assurance that the groundwater will not be contaminated as required by 10 C.F.R. 51.20(a), (b) and (c), 10 C.F.R. 50.34(a)(1) and 10 C.F.R. 100.10(c)(3).

Georgians Against Nuclear Energy Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) at 14-15; Campaign for a Prosperous Georgia Supplement to Petition for Leave to Intervene and Request for Hearing (April 11, 1984) at 12-13.

In its Memorandum and Order on Special Prehearing Conference Held Pursuant to 10 C.F.R. 2.715a (Sept. 5, 1984), the Board admitted Contention 7. The Board discerned the gravamen of the contention to be that "an accidental spill of radioactive water on the site could result in radioactive contamination of the shallow, and possibly the deeper, aquifers under Plant Vogtle, all of which are used as public water supplies." LBP-84-35, 20 N.R.C. 887, 900 (1984). The Board found that new information concerning the contamination of the Tuscaloosa aquifer at the Savannah River Plant provided a basis for Contention 7. Id. In addition, the Board felt a need to

determine "whether there are one or two deep aquifers and whether these are hydraulically connected anywhere in the vicinity of the plant." Id.

Discovery was subsequently conducted. With respect to Contention 7, discovery comprised the following requests and responses:

> Joint Intervenors' First Set of Interrogatories and Requests to Produce (Oct. 25, 1984) at 3-8.
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> NRC Staff's Interrogatories to Campaign for a Prosperous Georgia (CPG) and Georgians Against Nuclear Energy (GANE) (Nov. 1, 1984) at 4.
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> Applicants' First Set of Interrogatories and Request for Production of Documents (Nov. 5, 1984) at 4-9.
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> Applicants' Response to Intervenors' First Set of Interrogatories and Request for Production of Documents (Nov. 29, 1984) at 10-45.
>
> CPG/GANE's Response to Applicants' First Set of Interrogatories and Request for Production of Documents (Dec. 5, 1984) (first eleven unnumbered pages).
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> CPG/GANE's Response to NRC Staff Interrogatories (Dec. 10, 1984) at 3-4.
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> Applicants' Third Set of Interrogatories and Request for Production of Documents (Jan. 4, 1985) at 5-11.
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> Campaign for a Prosperous Georgia/Georgians Against Nuclear Energy Third Set of Interrogatories and Requests to Produce (Jan. 9, 1985) at 4, 8-14.
>
> Intervenors Campaign for a Prosperous Georgia and Georgians Against Nuclear Energy Response to Applicants' Third Set of Interrogatories and Request for Production (Feb. 5, 1985) at 1-6.

Applicants' Response to Intervenors' Third Set of Interrogatories and Request for Production of Documents (Feb. 13, 1985) at 11-14, 35-60.

Applicants' First Supplemental Response to Intervenors' Third Set of Interrogatories and Request for Production of Documents (July 5, 1985) at 6-15.

In addition, on March 26, 1985, Applicants deposed Mr. William Lawless, whom Joint Intervenors had identified as their witness on Contention 7.

In March, 1985, the NRC issued NUREG-1087, "Final Environmental Impact Statement Related to the Operation of Vogtle Electric Generating Plant, Units 1 and 2." Ground-water and the possibility of contamination are discussed in sections 4.3.1.2, 5.3.2.4, and 5.9.4.5(4). In June, 1985, the NRC issued NUREG-1137, "Safety Evaluation Report Related to the Operation of Vogtle Electric Generating Plant, Units 1 and 2." Accidental releases of liquid effluent to the ground-water are discussed in sections 2.4.13 and 15.7.3.

II. Legal Standards for Summary Disposition

The admission of a contention for adjudication in a licensing proceeding under the standards enunciated in 10 C.F.R. § 2.714 does not constitute an evaluation of the merits of that contention. Instead, such a ruling reflects merely the determination that the contention satisfies the criteria of specificity, asserted basis, and relevance. The admission of a

contention also does not dictate that a hearing be held on the issues raised. Section 2.749(a) of the NRC's rules of practice authorizes a licensing board to grant a party to the proceeding summary disposition of an admitted contention without proceeding to a hearing.

That section provides:

> Any party to a proceeding may move, with or without supporting affidavits, for a decision by the presiding officer in that party's favor as to all or part of the matters in the proceeding.

10 C.F.R. § 2.749(a). Delineating the standard to be applied by a licensing board in ruling upon such a motion, that section further states:

> The presiding officer shall render the decision sought if the filings in the proceedings, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits, if any, show that there is no genuine issue of fact and that the moving party is entitled to a decision as a matter of law.

10 C.F.R. § 2.749(d).1/

10 C.F.R. § 2.749 also provides, as do the Federal Rules of Civil Procedure, that where a motion for summary disposition

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1/ 10 C.F.R. § 2.749 is patterned after Fed. R. Civ. P. 56, and its standards are the same. Accordingly, recourse to federal case law to interpret the standards under the Commission's rule is appropriate. Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-554, 10 N.R.C. 15, 20 n.17 (1979); Alabama Power Co. (Joseph H. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 A.E.C. 210, 217 (1974).

is properly supported, a party opposing the motion may not rest upon the mere allegations or denials of its answer. 10 C.F.R. § 2.749(b). Compare Fed. R. Civ. P. 56(c). A party cannot avoid summary disposition on the basis of guesses or suspicions, or on the hope that at the hearing Applicants' evidence may be discredited or that "something may turn up." Gulf States Utilities Co. (River Bend Station, Units 1 and 2), LBP-75-10, 1 N.R.C. 246, 248 (1975). Where movant has made a proper showing for summary disposition and has supported his motion by affidavit, the opposing party must proffer countering evidential material or an affidavit explaining why it is impractical to do so. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-83-32A, 17 N.R.C. 1170, 1174 n.4 (1983), citing Adickes v. Kress & Co., 398 U.S. 144, 160-61 (1970).

The governing regulation permits summary disposition "as to all or any part of the matters involved in the proceeding." Thus where summary disposition of an entire contention is found to be inappropriate, a Licensing Board may and should determine what issues within the contention are not genuinely disputed. Only disputed issues should be referred to hearings. See also Fed. R. Civ. P. 56(d).

The Commission has encouraged Licensing Boards to use the summary disposition process where the proponent of a contention has failed to establish that a genuine issue exists, so that

evidentiary hearing time is not unnecessarily devoted to such issues. Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 N.R.C. 452, 457 (1981). The summary disposition procedures "provide in reality as well as in theory, an efficaceous means of avoiding unnecessary and possibly time-consuming hearings on demonstrably insubstantial issues. . . ." Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542, 550 (1980).

III. Legal Standards Applicable to the Possibility Ground-water Contamination

In Contention 7, Joint Intervenors cite three regulations: 10 C.F.R. §§ 51.20(a)-(c), 50.34(a)(1), and 100.10(c)(3). As discussed below, Joint Intervenors' citations suggest that Contention 7 is intended to raise both an environmental issue and a safety issue.

The first regulation which Joint Intervenors cite, 10 C.F.R. § 51.20(a)-(c), has been superseded by 10 C.F.R. § 51.45(b)(d).2/ This provision governs the contents of a license applicant's Environmental Report. In pertinent part, it requires a discussion of the environmental impact of plant operation and an analysis which balances environmental effects

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2/ 10 C.F.R. Part 51 was extensively revised in March, 1984.

against benefits.3/ However, it is not Applicants' analyses and conclusions in the Environmental Report which are of significance in a licensing proceeding. Rather, it is the NRC Staff's analyses and conclusions in the Final Environmental Impact Statement which evidence compliance with the National Environmental Policy Act and which may be challenged in hearings. See 10 C.F.R. §§ 51.104-51.106 (governing hearings on environmental issues).

Joint Intervenors' second citation, 10 C.F.R. § 50.34(a)(1), is inapposite to the present proceeding. That provision applies to an applicant's preliminary safety analysis report (the report which is submitted in conjunction with a construction permit application).

Joint Intervenors' third citation, 10 C.F.R. § 100.10(c), pertains to site criteria -- guidelines used in evaluating the suitability of proposed reactor sites.4/ Site criteria, however, are only an explicit matter for consideration in a construction permit proceeding. Compare 10 C.F.R.

3/ While factors considered are to be quantified to the fullest extent practicable, precise quantification is not demanded. An environmental impact statement satisfies NEPA if it gives the decisionmaker and other readers enough detail concerning the costs and benefits to permit reasoned evaluation and decision. Sierra Club v. Morton, 510 F.2d 813, 827 (5th Cir. 1975), citing, Sierra Club v. Lynn, 502 F.2d 43, 61 (5th Cir. 1974).

4/ See 10 C.F.R. § 100.1(a).

§ 2.104(b)(i)(d) with 10 C.F.R. § 2.104(c). Here, in this operating license proceeding, the relevant issues are whether Plant Vogtle has been properly built and whether there is reasonable assurance that it can be operated without endangering the health and safety of the public.5/ 10 C.F.R. § 2.104(c). In the absence of a showing by Intervenors that the Commission's regulations are inadequate to protect the health and safety, Licensee satisfies its burden of persuasion on health and safety issues by demonstrating compliance with applicable Commission regulations. Maine Yankee Atomic Power Co. (Maine Yankee Atomic Power Station), ALAB-161, 6 A.E.C. 1003, 1008 (1973).

Two Commission regulations are used by the NRC Staff in evaluating the safety-significance of the possibility of an accidental spill of radioactive liquid. These are: (1) 10 C.F.R. Part 50, App. A, General Design Criterion (GDC) 60, as it relates to radioactive waste management systems being designed to control releases of radioactive materials to the environment; and (2) 10 C.F.R. Part 20, App. B, (Table II, Column

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5/ Site criteria nevertheless may have bearing on whether Plant Vogtle can be operated without endangering the health and safety of the public. In this regard and with respect to ground-water, 10 C.F.R. § 100.10(c) provides: "Special precautions should be planned if a reactor is to be located at a site where a significant quantity of radioactive effluent . . . might find ready access to underground water tables." (Emphasis added).

2), which provides maximum permissible concentrations of radioisotopes not to be exceeded in an unrestricted area. Although 10 C.F.R. Part 20 limits apply to releases during normal operation, that those limits will not be exceeded at the nearest potable water supply in the event of an accidental spill is indicative of the absence of the undue risk to the public health and safety. NUREG-0800, "Standard Review Plan," § 15.7.3.

IV. Argument

During discovery, Applicants attempted to ascertain the precise manner in which Plant Vogtle allegedly posed an unevaluated or undue risk of ground-water contamination. The attempt was not fruitful. For the most part, Joint Invervenors had no information specific to Plant Vogtle. Instead, their responses indicated that Joint Intervenors simply assume that events and circumstances that have occurred at the Savannah River Plant will also occur at Plant Vogtle.

As the Board discerned, the gravamen of Contention 7 is that an accidental spill of radioactive water on the Vogtle site could result in radioactive contamination of the shallow and possibly the deeper aquifers under Plant Vogtle. See LBP-84-35, 20 N.R.C. 887, 900 (1984). As discussed in the Affidavit of Jagannathan et al. and Affidavit of Crosby et al., attached hereto, an accidental spill at Plant Vogtle is very unlikely, could not contaminate the deeper aquifers beneath

Plant Vogtle, and would have no significant off-site effect. These conclusions are consistent with the Vogtle FES, §§ 4.3.1.2, 5.3.2.4, 5.9.4.5(4), and with the Vogtle SER, §§ 2.4.13, 15.7.3; and the Affidavit of Crosby et al. demonstrates that these conclusions are not compromised by experiences at the Savannah River Plant.

As the Affidavit of Jagannathan et al. shows, tanks and related piping at VEGP have been designed and constructed in accordance with stringent standards. Tanks and related piping containing radioactive liquids are designed and constructed in accordance with Regulatory Guide 1.26 if safety-related, and in accordance with Regulatory Guide 1.143 if non-safety related.6/ Affidavit of Jagannathan et al., ¶ 4. Multiple barriers exist to prevent an accidental spill. Id., ¶¶ 5-16.

In the extremely unlikely event that a spill did occur and infiltrated the ground without interception, the extent of ground-water contamination would be limited by the hydrogeological characteristics of the VEGP site. These characteristics have been determined by extensive exploration and

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6/ An applicant's compliance with a Regulatory Guide is evidence of compliance with the Commission's regulations. See Petition for Emergency and Remedial Action, CLI-78-6, 7 N.R.C. 400, 406-07 (1978). Though they may be questioned during the course of an adjudication, they are nevertheless entitled to prima facie weight. Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), CLI-74-40, 8 A.E.C. 809, 811 (1974).

investigation. Affidavit of Crosby et al., ¶¶ 14-20. Plant Vogtle is located on an interfluvial ridge -- a topographically high area circumscribed by streams and the Savannah River. Underlying the entire interfluvial ridge is an approximately 70-foot thick, effectively-impermeable marl. Id., ¶¶ 22-24, 26-34. Ground-water exists under water-table conditions in the sediments above the marl (this ground-water is referred to as the water-table aquifer), and also exists in two aquifers that are below and confined by the marl (the Tertiary aquifer and below it, the Cretaceous aquifer).7/ Id., ¶¶ 11-13.

Only the uppermost aquifer, the water-table aquifer, would be potentially affected by an accidental release of radioactive liquid to the ground. The marl would prevent migration of contaminants to the deeper confined aquifers. Id., ¶ 25. Contamination of ground-water would also be limited to the interfluvial ridge on which the VEGP site is located. The streams that border the interfluvial ridge have eroded down to the marl, and ground-water in the water-table aquifer at VEGP discharges into those streams. There is only one well that draws from the water-table aquifer on the interfluvial ridge;

7/ The Tertiary aquifer is sometimes referred to as the principal artesian aquifer or as the limestone aquifer. The Cretaceous aquifer, below the Tertiary aquifer, is also known as the Tuscaloosa aquifer. Although the Cretaceous and Tertiary aquifers beneath VEGP are separated by the Huber and perhaps Ellenton Formations, the two deep aquifers are believed to be hydraulically connected. Id., ¶ 21.

this well is approximately 1.7 miles south of the plant. The direction of ground-water beneath the power block area, however, is northward to Mathes Pond, and thus, that particular well would be unaffected by an accidental spill. Id., ¶ 35-38.

Applicants have conservatively estimated the time it would take a spill to reach Mathes Pond to be 350 years. By that time, even for the worst possible spill, the concentrations of radionuclides in the contaminated ground-water would be reduced by radioactive decay to below 10 C.F.R. Part 20 limits. Id., ¶¶ 39-41.

In analyzing a core-melt liquid pathway accident scenario, the NRC Staff has performed an even more conservative travel time estimate that is based on only the flow path travel time through 550 feet of backfill and that discounts the travel time from the backfill to Mathes Pond (an additional distance of 2850 feet). This extremely conservative estimate is 15 years. Id., ¶ 42. Yet even if it took a worst case spill only 15 years to reach Mathes Pond, the concentrations of all radionuclides other than tritium in ground-water would still be less than 10 C.F.R. Part 20 limits after travel through the backfill; and although the concentration of tritium in ground-water contaminated by a worst-case spill would exceed 10 C.F.R. Part 20 limits after 15-year travel through the backfill, that concentration would be reduced below the 10 C.F.R. Part 20 limit by dilution as the contaminated ground-water discharged

into Mathes Pond and stream, which are on-site. Thus, concentrations of radionuclides in water flowing off-site (water flowing into the Savannah River at Hancock's Landing) would not exceed the maximum permissible concentrations in 10 C.F.R. Part 20, Appendix B, Table II, Column 2. Id., ¶¶ 43-56.

The conclusions above are not compromised by experiences at the Savannah River Plant (SRP), which formed the basis for this contention. While the Cretaceous aquifer beneath SRP did become contaminated by volatile organics (not radionuclides), that contamination stemmed from the use of waste seepage basins which discharged liquid wastes through shallow ground-water flow-paths into streams. Such basins are not used at VEGP. In addition, the contamination at SRP occurred in an area where marl was not present; and the contamination of the Cretaceous aquifer may have been facilitated by an improperly grouted well. In contrast, the marl is present at VEGP, and wells and exploratory holes8/ at VEGP have been grouted (or will be grouted prior to plant operation) by the Tremie method -- a method that ensures the integrity of the grout seal. Id., ¶¶ 60-72.

8/ Three exploratory holes lack documentation showing they were grouted, though Applicants believe they were grouted. These three exploratory holes, however, are not in the spill flow path and are beyond the lateral extent of the water-table aquifer. Consequently, an accidental spill at VEGP could not reach these three holes. Affidavit of Crosby et al., ¶ 71.

In sum, the geology and hydrology at VEGP has been extensively investigated, and the consequence of an accidental spill has been thoroughly assessed. While the remote possibility of an accidental spill cannot be entirely eliminated, there is nevertheless reasonable assurance that the public health and safety will not be endangered.

V. Conclusion

In conclusion, there is no genuine issue of material fact to be heard. For the reasons discussed above, Applicants submit that the Board should grant summary disposition of Contention 7 in Applicants' favor.

Respectfully submitted,

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