

1 and 2), ALAB-182, 7 AEC 210, 217 (1974). As explained by the Appeal Board, a motion for summary disposition:

enables the court to go beyond the complaint itself and to determine, on the basis of extensive matters such as affidavits submitted by one or more of the parties, whether there is warrant for an evidentiary trial; i.e., whether there is "a genuine issue as to any material fact" bearing upon the claim or claims as to which summary resolution is sought. Id.

Although the burden of showing the absence of any genuine issue of fact is upon the moving party, and the record will be viewed in the light most favorable to the party opposing the motion, "a party opposing the motion . . . must set forth specific facts showing that there is a genuine issue of fact." 10 CFR §2.749. In this regard, it has been stated that:

[a]t this stage, mere allegations in the pleadings are not sufficient to establish the existence of an issue of material fact. 10 CFR §2.749(b) [citations omitted].

To defeat summary disposition an opposing party must present facts in the proper form; conclusions of law will not suffice. The opposing party's facts must be material, substantial, not fanciful, or merely suspicious. [footnotes omitted].

One cannot avoid summary disposition "on the mere hope that at trial he will be able to discredit movant's evidence; he must, at the hearing, be able to point out to the court something indicating the existence of a triable issue of material fact." 6 Moore's Federal Practice 56.15/47. One cannot "go to trial on the vague supposition that something may turn up." 6 Moore's Federal Practice 56.15/37. [citation omitted]. In Orvis v. Brickman, 95 F.Supp. 605 (D.D.C. 1951), the Court, in granting the defendant's motion for summary judgment under the Federal Rules, said:

All the plaintiff has in this case is the hope that on cross-examination . . . the defendants . . . will contradict their respective affidavits. This is purely speculative, and to permit trial on such basis would nullify the purpose of Rule 56. . . .

Gulf States Utilities Co. (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975).

Thus, although the opposing party need not show that he will prevail on the factual issues, he must show by competent evidence that such issues exist to be tried.^{2/} See, e.g., Public Service Company of New Hampshire et al. (Seabrook Station, Units 1 and 2), LBP-74-36, 7 AEC 877, 879 (1974).

In light of these principles, and for the reasons set forth below, the Staff urges the Board to grant summary disposition of contentions A6 and A7. If the Board is unable to decide in favor of the Staff on both these contentions, summary disposition should be granted on any portions of those contentions as to which there is no genuine issue of material fact.^{3/}

^{2/} This is not inconsistent with the Staff's responsibilities under the National Environmental Policy Act (NEPA) as discussed in the case of Consumers Power Co. v. Aeschliman, et al. 55 L.Ed 2d 460 (1978). The Supreme Court therein, citing approvingly from the "threshold test" prescribed by the Commission for evidentiary consideration of energy conservation issues under NEPA, confirmed that an intervenor must make a "showing . . . sufficient to require reasonable minds to inquire further." Id. at 486. Showing that a genuine issue of material fact exists would seem to be the minimum required by this principle.

^{3/} Section 2.749 authorizes a "decision by the presiding officer in that party's /movant's/ favor as to all or any part of the matters involved in the proceeding." (emphasis added) See, e.g., Public Services Company of Oklahoma, et al. (Black Fox Station, Units 1 and 2), LBP-77-46, 6 NRC 167 (1977); The Toledo Edison Company (Davis-Besse Nuclear Power Station), LBP-73-30, 6 AEC 691, 699 (1973).

I. Contention A6

"The State of South Carolina has duly issued a certificate for Summer pursuant to Section 401 of the FWPCA, and has duly issued an NPDES permit under Section 402 of the FWPCA. The thermal effluents and the cooling system intake velocities presumably will comply with South Carolina's FWPCA standards. Even so, the thermal discharge from the Summer plant will result in a depletion of oxygen and a corresponding degradation of water quality downstream from the Monticello Reservoir. The thermal effluents will also adversely affect plankton and the spawning of landlocked striped bass in the Congaree River downstream from the Summer plant. Intake velocities in the cooling system will exceed 0.5 fps thus causing excessive mortalities of indigenous aquatic life. These impacts have not been adequately considered in the over-all cost-benefit analysis required by NEPA."

A. Material Facts as to Which There is No Genuine Issue to be Heard

(1) Oxygen Depletion

1. Under a conservative analysis, it is assumed that the passage of cooling water through the Summer plant will cause it to lose 40% of its dissolved oxygen. The volume of water with reduced oxygen content (represented by the discharged cooling water from the Summer plant) constitutes 8.0% of the total volume of water pumped to Parr Reservoir by the Fairfield pumped storage facility during a generating cycle. This conservatively assumes that the discharge of cooling water from the Summer station moves without mixing or re-aeration to the Fairfield facility intake and there mixes into the Fairfield discharge water entering the Parr Reservoir. This represents proportionally 4.8 feet of the 60 foot deep intake channel to the Fairfield facility, or 24% of the assumed 20 foot oxygenated upper water layer. The reduction of oxygen content in the water going through the Fairfield facility as a result of mixing with the discharge water from Summer would be 40% of 24% or 9.6%. The Fairfield facility discharge is further diluted with flow from the Broad River upstream, tributaries downstream, and water from the Saluda River (approximately 30% of the flow of the Broad) (Kanciruk, para. 9; Appendix A).

2. A computer model which predicts the incremental reduction in dissolved oxygen concentration in Parr Reservoir and the Congaree River due to the Summer nuclear operation under varying conditions has been developed by the Staff and is attached as Appendix C to the Staff testimony on contention A6. The model demonstrates that dilution effects alone will reduce the incremental reduction of dissolved oxygen concentration to approximately 5.4% in Parr Reservoir and 2.4% in the Congaree River under adverse case assumptions (Kanciruk, para. 10).

3. Given the high concentrations and wide fluctuations of dissolved oxygen which are typical of the Broad River during striped bass spawning, these small reductions in oxygen concentration will not have measurable adverse effect on the reproduction of striped bass or plankton in the Congaree River (Kanciruk, para. 11).

4. These percentage reductions are well within the average daily, monthly, and year-to-year percentage fluctuations of dissolved oxygen in the waters of the Congaree and Broad Rivers during the spawning season and throughout the year (Kanciruk, para. 12).

5. The impact of the Summer plant on the oxygen levels in the Broad River is predicted to be negligible or, more likely, non-existent (Kanciruk, para. 14).

(2) Thermal Effluents

6. The State of South Carolina has issued a National Pollutant Discharge Elimination System (NPDES) permit to the Applicant which limits the thermal discharge from Monticello Reservoir (through the Fairfield pumped storage facility) to an average of 3⁰F (1.65⁰C) ΔT above ambient as measured at the Fairfield intake in Monticello at a depth of 1 foot (0.3 m) and a maximum discharge temperature of 90⁰F (32.2⁰C) (Kanciruk, para. 18).

7. A conservative computer model developed by the Staff which simulates the incremental thermal effluent effects of discharge from the Summer station (See Appendix C to Staff testimony) predicts a maximum incremental ΔT 0.63⁰C (1.1⁰F) in the Congaree River for an intermittently high release, a discharge ΔT 50% greater than the NPDES Permit allows. This high release could not long be maintained, as it would have to be balanced by proportionally lower releases or it would raise the monthly average discharge ΔT above the NPDES Permit limit. Analysis for a steady state (average) condition of a 3⁰F (1.65⁰C) ΔT indicates a ΔT for the Congaree of 0.42⁰C (0.76⁰F) (Kanciruk, para. 24).

8. These predicted ΔT 's are within daily and monthly temperature fluctuations for this river system during the present spawning season (Kanciruk, para. 25).

9. Natural daily temperature fluctuations during spawning season can average 1.5-2.5⁰C (2.7-4.5⁰F), with monthly ranges of 10⁰C (18⁰F) Id.

10. Considering that the majority of the observed spawning in the Congaree River occurs prior to mid-May (below temperatures of about 70°F (29.9°C)), the closest spawning area to the Summer plant is at river mile 53 (35 miles downstream from the plant), eggs rapidly drift downstream from the original spawning area, and the inherent conservatism of the staff's model itself, the Staff predicts that this adverse case ΔT due to Summer plant operation will have no significant adverse effect on striped bass spawning in the Congaree. Similarly, this small incremental ΔT will have no adverse affect on plankton populations in downstream areas (Kanciruk, paras. 26-27).

11. Under more realistic and reasonable (though still conservative) conditions (See Staff testimony at paragraphs 21, 29-30), the predicted ΔT for the Congaree River due to operation of the Summer plant (0.21°C) is negligible and is estimated to have no predicted adverse biological consequences to plankton or striped bass spawning in the Congaree River (Kanciruk, para. 31).

12. In sum, given the magnitude of the predicted ΔT 's (or even the lack of any ΔT above stream ambient due to thermocline effects), the distance of the spawning population from the Fairfield facility discharge (approximately 35 miles), the limited exposure time for the eggs, the fact that the majority of spawning taken place prior to mid-May at temperatures below 70°F (21.1°C), there

should be no significant impact on striped bass spawning due to the operation of the Summer plant (Kanciruk, para. 33).

(3) Intake Velocities

14. The intake velocity for the Summer intake structure measured between the trash rack and traveling screens, under normal conditions, will range from 0.51 fps to 0.44 fps and average 0.48 fps. Under the unusual condition of emergency drawdown (when the elevation of the Monticello Reservoir is at 418 feet), the intake velocity will be slightly increased to 0.55 fps (Kanciruk, para. 35).

15. Compared with intake velocities of operating power plants located in the southeastern United States, the Summer intake velocities are not at all uncharacteristic or excessive (Kanciruk, para. 39).

16. Fish impingement losses depend on a myriad of factors, in addition to velocity, such as intake placement, basin morphology, species composition, population structure, interactions between discharge and intake areas, season, etc. Nonetheless, the designed intake approach velocities for the Summer station are not excessive and are generally within recommended guidelines (Kanciruk, para. 38).

B. Discussion

As the attached affidavit of Dr. Kanciruk and the discovery record demonstrate, contention A6 is an appropriate contention for summary disposition and dismissal. As relevant to contention A6, under normal operation, the small reduction in dissolved oxygen concentration due to the thermal discharge from the Summer plant will have, at most, a negligible effect on the water quality downstream from the Monticello Reservoir. Thermal effluents will have no significant adverse effect on striped bass spawning or plankton populations in the Congaree River, and the designed intake velocity for the Summer intake structure falls generally within accepted guidelines and is not uncharacteristic or excessive compared with intake velocities at similar generating facilities in the region.

The Staff further believes that the following additional matters warrant the attention of the Board in its consideration of the instant motion. The first matter concerns the permissible legal scope of contention A6. It is well established that the Commission lacks jurisdiction to consider the efficacy of state water quality standards and effluent limitations incorporated into the terms of the National Pollutant Discharge Elimination System (NPDES) Permit issued to the Applicant herein by an authorized permit issuing agency under §402 of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA) or whether the Summer facility will comply with these standards. Such jurisdiction rests with the state of South Carolina by delegation from EPA in this

instance. See §511(c)(2) of the FWPCA, 33 U.S.C. §1371; Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), CLI-78-1 7 NRC 1, 25-25 (1978). Rather, the role of the NRC in the context of contention A6 is to consider the environmental impact that would result from thermal discharges from the Summer plant authorized by the NPDES Permit and factor the determined impacts into the cost-benefit balance which the NRC must perform under the National Environmental Policy Act. Id. The Board had recognized this jurisdictional division and delineated the scope of contention A6 accordingly. See April 24, 1978 "Prehearing Conference Order"; Transcript of August 3 deposition of Brett Bursey (August 3 deposition) at 137.

One of the principal claims underlying contention A6, according to the Intervenor, is that the predictive model utilized, in part, to arrive at the thermal criteria limitations set forth in the NPDES Permit is not valid. See "Intervenor Brett A. Bursey's Answers to Interrogatories of NRC Staff" (Interrogatory Answers), served August 2, 1978, at 7; August 3 deposition at Tr. 136. As members of the Board aptly noted during the August 3, 1978 deposition of the Intervenor, such an issue is beyond the purview of the Board's jurisdiction and outside the scope of contention A6. Id. at Tr. 137-38, 146-47.

A second major proposition underlying the Intervenor's claims in contention A6 is that the NPDES Permit does not govern the temperature of the Monticello Reservoir. See August 3 deposition at Tr. 142. This is not true. The NPDES Permit sets a thermal limit on the discharge from the Summer station at the

discharge pipe into the Monticello Reservoir as well as at the edge of the thermal mixing zone as measured at the surface of the intake (one foot depth) to the Fairfield pumped storage facility discharge. The Monticello Reservoir is classified by the Environmental Protection Agency as a navigable water in which Federal and state water quality standards apply. Water quality standards implicitly reflect the quality of water to be maintained to sustain an assigned water usage. Surface waters within the Monticello Reservoir must meet the water quality and use restrictions specified for tributaries to the Broad River in this region under section III.8 of the South Carolina Water Quality Standards. The Broad River in this region is classified by the Department of Health and Environmental Control, the NPDES permit issuing state, as Class B for purposes of fish propagation and use after treatment for industrial and domestic purposes. Average monthly temperature rise in the reservoir is limited to 90°F (32.2°C) at the edge of the zone of mixing (NPDES Permit, p. 2).

With regard to the Intervenor's direct case on contention A6, during the taking of the Intervenor's deposition on June 13, 1978, Applicant's counsel asked the Intervenor why there would be a depletion of oxygen due to the thermal discharge from the Summer station as asserted in contention A6. Transcript of June 13, 1978 deposition of Brett Bursey (June 13 deposition) at 127. The Intervenor replied: "I'm quessing." Id. When asked how significant he believed the degradation of water quality would be in the Broad River if the temperature rise in the Parr Reservoir were limited to 3° above ambient (the NPDES Permit limitation), the Intervenor responded: "I don't know." Id. at 124. When

questioned regarding the portion of contention A6 concerned with the aquatic impact due to the intake velocities in the plant cooling system (allegedly in excess of 0.5 fps), the Intervenor acknowledged that he knew of no data regarding the impact on indigenous species in neighboring water bodies assuming intake velocities in excess of 0.5 fps and had established no criteria to define the parameters of the term "excessive mortalities" as used in contention A6. Id. at 129-130. Moreover, as the Staff testimony indicates, the approach velocity to the intake screening at the Summer station will average 0.48 fps under normal intake conditions and is within recommended guidelines for facility approach velocities. (Kanciruk, para. 38).

C. Conclusion with Respect to Contention A6

As demonstrated above, no genuine issues of material fact remain to be resolved concerning the aquatic impacts which form the subject of contention A6. Hence, the Board should find for the Staff as a matter of law and grant summary disposition and dismissal of contention A6.

II. Contention A7

The Applicant's ability to anticipate, detect, or mitigate the impact of accidental releases of radioactive materials to the Broad River is inadequate to protect the potability of the water supply for the municipalities of Columbia and West Columbia.

A. Material Facts as to Which There is No Genuine Issue to be Heard

(1) General

1. The Technical Specifications for the Summer operating license will require the reporting of all releases which either exceed radioactivity limits prescribed therein or which are the result of accident, mishap or operational error. (Stoddart, para. 1).

2. Duke Power Company experienced two incidents of effluent releases from its Oconee nuclear plant between 1973 and 1978 which fell within the regulatory characterization of "anticipated operational occurrences". (See 10 CFR §50.34a and NUREG-0017 referenced in Stoddart affidavit, para. 12). In both incidents, however, concentrations of radioactive materials at water supply intakes downstream of the point of release were calculated to be a small portion of the 10 CFR Part 20 limits for drinking water (Stoddart, paras. 8-10).

(2) Anticipated Operational Occurrences

3. Section 11 of the Final Safety Analysis Report (FSAR) and section 3.5 of the Environmental Report (ER) contain the Applicant's analyses of the magnitude of plant liquid radioactive releases from normal operations, including "anticipated operational occurrences." The phrase "anticipated operational occurrences" is derived from the phrase "expected operational occurrences" in 10 CFR §50.34a (See NUREG-0017) and is employed by the Staff and Applicant to denote events, such as upsets, leaks, spills, and similar mishaps, which are anticipated to

occur on the order of one event per year during the normal operating lifetime of a plant as the result of design deficiencies, construction errors, operator errors, or equipment malfunctions (Stoddart, para. 12)

4. It is assumed by the Applicant and Staff that an average of 0.15 Ci/yr of radioactive material will be released to the environment in liquid effluents from the Summer nuclear plant as the result of anticipated operational occurrences (Stoddart, paras. 13, 14).

(3) Accidents

5. The term "accident" generally connotes an event of a more serious nature than an "anticipated operational occurrence". Accidents are divided into classifications (classes 3 through 9) per the terms of the proposed Annex to then Appendix D, 10 CFR Part 50. Accidents have a lower probability of happening than anticipated operational occurrences (Stoddart, paras. 15, 16).

6. The only postulated accident which has the potential for releasing radioactive liquids to a drinking water supply is the gross failure of any tank outside the containment that contains radioactive liquids. Both the Staff and Applicant have calculated that the accidental release of the contents of such a tank containing design basis inventory of radioactive materials would not result in radioactivity concentrations in excess of 10 CFR Part 20 limits for drinking water at the nearest municipal water supply intake. In more than 600 reactor-years of operating experience, no such postulated accident has occurred (Stoddart, para. 16).

(4) Anticipation of Liquid Effluent Releases

7. Section 11.2 of the FSAR describes design features incorporated in the plant for the control, collection, and treatment of liquid radioactive wastes in anticipation of spills, upsets, or leakage from systems or components containing radioactive liquids in the course of normal operations, including anticipated operational occurrences. These features are acceptable to the Staff (Stoddart, para. 17).

8. The liquid radioactive waste treatment system is provided to process anticipated liquid radioactive wastes prior to discharge to the environment or reuse in the plant. The systems are described in sections 9.3, 10.4.8, and 11.2 of the FSAR and are acceptable to the Staff (Stoddart, para. 20).

(5) Detection of Liquid Effluent Releases

9. Section 11.4 of the FSAR contains a description of the design features incorporated in the Summer plant for the detection of radioactive materials contained in releases to the Monticello Reservoir, Fairfield Pumped Storage Facility, and Broad River (Stoddart, para. 22).

10. The Applicant has provided continuous radioactivity monitoring instrumentation on each normally or potentially radioactive effluent stream. Each of these monitors has the capability, upon alarm, of initiating the automatic termination of the flow of the effluent stream. In addition, process monitors

on principal process streams will continuously measure the radioactivity levels in these streams to detect and annunciate leakage of radioactive materials into normally nonradioactive process streams or to detect and annunciate the buildup of above normal radioactive material concentrations in radioactive process streams (Stoddart, para. 23).

11. In addition to continuous radioactivity monitoring instrumentation, principal process streams and all effluent streams will be sampled and analyzed for radioactivity content on a frequency which will be established in the operating license Technical Specifications. Each batch of liquid waste will be sampled and analyzed prior to discharge (Stoddart, para. 24).

(6) Mitigation of Liquid Effluent Releases

12. The Applicant's design features for systems relative to liquid radioactive effluents, described in paragraphs 17 through 24 of the Stoddart affidavit, serve to mitigate the effects of the inadvertent release of liquid radioactive effluents by detecting, controlling, preventing, or otherwise minimizing such releases, thereby minimizing the potential effects of such releases (Stoddart, para. 26).

13. The Applicant's radioactive waste treatment systems are capable of keeping radioactive material in effluents to the environment "as low as is reasonably achievable" in conformance with the requirements of 10 CFR §50.34a and corres-

ponding guidelines of 10 CFR Part 50, Appendix I. No additional provisions are required for the further reduction of releases of radioactive material in effluents (Stoddart, para. 27).

B. Discussion

The attached affidavit of Phillip G. Stoddart and the discovery record demonstrate that the Board should grant summary disposition of and dismiss contention A7. In response to Staff interrogatory A7-5, the Intervenor states that "¶here is no mention of efforts by the Applicant to detect, prevent or mitigate accidental releases into the Broad River". See Intervenor's Answers to Interrogatories at 9. According to the Intervenor, there should be included a discussion of the consequences of Class 9 accidents. See August 3 deposition at Tr. 194. In a similar regard, the Intervenor singled out an incident involving a release of radioactive effluent from the Duke Power Company's Oconee nuclear plant into the source of the Clemson University drinking water as worthy of consideration in this proceeding. See June 13, 1978 deposition at Tr. 136.

As the attached affidavit of Mr. Stoddart indicates, certain design features have been incorporated into the Summer plant to provide for the anticipation, detection and mitigation of radioactive liquid effluent releases resulting from normal operation (including anticipated operational occurrences) to the Broad River. As further noted in the Stoddart affidavit, these design features

combine to ensure that anticipated levels of radioactive liquid effluent releases to the environment will be "as low as is reasonably achievable" in conformance with the requirements of 10 CFR §50.34a. The incident alluded to by the Intervenor regarding the Oconee facility involved an anticipated operational occurrence. In that incident, concentrations of radioactive material at the water supply intake downstream of the point of release were calculated to be a small fraction of the limits specified in 10 CFR Part 20 for drinking water.

With regard to the matter of accidental releases, the only postulated accident which has the potential for releasing radioactive liquid effluent to a drinking water supply is the gross failure of any tank outside the containment that contains radioactive liquids. This incident was considered as a design basis event in the FSAR. It was calculated that this postulated liquid tank rupture accident would not result in radioactive releases in excess of the specified limits in 10 CFR Part 20 for drinking water at the nearest municipal water supply intake. When questioned by the Applicant on oral deposition whether he postulated a liquid waste system failure of a more severe nature than that postulated by the Applicant, the Intervenor responded: "I do not know." See June 13, 1978 deposition at Tr. 159. Further, in more than 600 reactor years of operating experience, no such postulated accident has occurred.

Lastly, with respect to the Intervenor's claim that the consequences of Class 9 accidents should be considered, it is a well settled Commission policy that the

consequences of Class 9 accidents are not considered in connection with land-based nuclear plant license applications. See most recently Offshore Power Systems (Floating Nuclear Power Plants), ALAB-489, 7 NRC ___ (August 21, 1978).

C. Conclusion with Respect to Contention A7

As demonstrated above, no genuine issues of material fact remain to be resolved concerning the ability of the Applicant to adequately anticipate detect or mitigate the impact of accidental releases of radioactive materials to the Broad River so as to protect the potability of the water supply for Columbia and West Columbia, South Carolina. Accordingly, the Board should find for the Staff as a matter of law and grant summary disposition of and dismiss contention A7.

CONCLUSION

For the reasons set forth above, the Board should grant summary disposition of and dismiss contentions A6 and A7 in this proceeding.

Respectfully submitted,



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Dated at Bethesda, Maryland
this 3rd day of October, 1978.