

August 18, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
PENNSYLVANIA POWER & LIGHT COMPANY)
)
and)
)
ALLEGHENY ELECTRIC COOPERATIVE, INC.)
)
(Susquehanna Steam Electric Station,)
Units 1 and 2)

Docket Nos. 50-387
50-388

MEMORANDUM IN SUPPORT OF
APPLICANTS' RENEWED MOTION
FOR SUMMARY DISPOSITION
OF CONTENTION 17

FACTUAL BACKGROUND

On December 5, 1980, Applicants filed a Motion for Partial Summary Disposition of Contention 17 in which they sought dismissal of all but one of the issues^{1/} raised in Contention 17 in this proceeding with respect to the 500 kV transmission lines to be utilized by Applicants for transmitting the power generated by the Susquehanna facility ("the Susquehanna lines"). Applicants' motion was supported by the Affidavit of Robert F. Lehman, Senior Project Engineer with Pennsylvania Power & Light Co. ("PP&L").

One of the issues raised on Contention 17 and included in Applicants' motion for summary disposition was the allegation that the Susquehanna lines "create strong electrostatic...fields that

^{1/} Earlier, on August 22, 1980, Applicants had also moved for summary disposition of the remaining issue raised in Contention 17 (ozone emissions).

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adversely affect living organisms along the UHV right of way and beyond." Mr. Lehman's Affidavit set forth his calculation of the maximum electric field gradients at the point of minimum clearance on the various segments of the Susquehanna lines, assuming a limiting voltage of 550 kV, and reported that the maximum electric field gradients of the lines would be 11 kV/m on the right-of-way and 2.28 kV/m on the right-of-way edge. Lehman Aff., para. 44.

Mr. Lehman asserted that it was very improbable that the maximum electric field under the Susquehanna lines would produce cognizable effects on a person standing beneath the line except, if at all, "slight hair motion in a hand extended upwards." Lehman Aff., para. 46. Mr. Lehman went on to express the following opinion:

according to the overwhelming majority of scientific opinion, there is no evidence of adverse health effects on human beings from the electric fields produced by high voltage transmission lines...My own review of the literature confirms that finding, and leads me to conclude that early reports of potential adverse health effects were the result of inadequate methodology and insufficient observation. Thus, the electric fields generated by the Susquehanna lines will have no measurable effect on the health of the public; this conclusion is reinforced by the fact that the population density in the vicinity of the Susquehanna lines is very low and presence of members of the public on the right-of-way of those lines for considerable periods of time is not anticipated.

Id., para. 47, citation omitted.

Citizens Against Nuclear Dangers ("CAND"), the original sponsor of Contention 17, filed on January 7, 1981 a document entitled "Motions and Responses Concerning Summary Dispositions"

in which among other things it opposed summary disposition of Contention 17. CAND, however, failed to include any affidavits or other relevant, admissible materials in opposition to Applicants' motion.^{2/}

On January 9, 1981, the NRC Staff filed a "Response Supporting in Part and Opposing in Part Applicants' Motion for Partial Summary Disposition of Contention 17" ("Staff Response"). The Staff Response, which was accompanied by the Affidavits of John C. Lehr and Gerald Gears, supported Applicants' motion as to most of the issues raised in Contention 17, but opposed summary disposition on the question of the health effects of electric fields. The Staff's opposition was based on the belief that Applicants' motion and supporting documentation did not "clearly demonstrate the absence of any genuine issue of material fact regarding the human health effects of electric fields." Staff's Response at 2. The Gears Affidavit, on which the Staff's Response was based, stated that:

"the possible biological effects of these [electric field] induced currents and voltages is a very controversial aspect of the interaction of EHV fields with life forms. The experimental procedures necessary to adequately establish the influence of such fields on life forms are highly complex. Various experiments have provided preliminary evidence that some

^{2/} In a November 4, 1980 filing that preceded Applicants' motion CAND had alleged that "an expert biophysicist testifying in Federal Court in Philadelphia cited scientific studies that indicate serious adverse effects caused by 500 kV transmission extending 2,000 feet from the UHV lines." This multiple-hearsay allegation was not supported by affidavits or any other competent evidence.

biological subjects may sense, or respond to electric fields. In some cases, response was obtained at quite low field levels similar to those found in the vicinity of transmission lines. These preliminary indications of response in test animals are indicative of interaction of the fields with central nervous system functions or manifestations of chronic stimulation. There is strong disagreement among researchers in this area as to the significance of these responses. Gears Aff., at pp. 2-3.

On May 20, 1981 the Licensing Board issued a "Memorandum and Order on Pending Motions" ("Memorandum and Order") in which the Board granted summary disposition on all issues on Contention 17, except for the health effects of the electric fields set up by the Susquehanna lines. As to that issue, the Board decided that summary disposition was inappropriate because the issue is "a controversial matter." Memorandum and Order at 14, para. (f).

ARGUMENT

A. Renewed Consideration of the Electric Field Health Effects Issue is Appropriate at This Time

The Board's denial of Applicants' summary disposition motion was apparently due to the Staff's statements that (1) the electric fields set up by high voltage transmission lines cause currents to flow within animals and human beings; (2) some animals may sense, or respond to, electric fields of the same order as those set up by transmission lines; and (3) these preliminary indications of response in test animals are indicative of interaction of the fields with central nervous system functions.

Gears Aff., p. 2-3. Neither the Gears Affidavit nor the Staff's motion indicate that the Staff is prepared to testify as to the existence of adverse effects on humans or animals from operation of the Susquehanna lines; the import of the Staff's filing is that Applicants' motion for summary disposition and supporting documents failed, in the view of the Staff, to address adequately the above mentioned issues. Under these circumstances, a filing by Applicants that addresses the Staff's concerns and cures the shortcomings of the former motion can be considered by the Board as a renewed motion for summary disposition, and which meets the requirements of 10 C.F.R. § 2.749, will support summary disposition of the contention. Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741 (1977).^{3/} For it is beyond dispute, both in administrative proceedings and in court litigation, that where the moving party on a motion for summary disposition (or summary judgment) has not submitted evidence necessary to grant the motion, the party will be allowed to make a proper resubmission. Cleveland Electric Illuminating Co., supra, 6 NRC at 752; Hood v. Burnett, 51 F.R.D. 477, 479 (N.D. Ga. 1971); Green v. Benson, 271 F. Supp. 90, 95 (E.D. Pa. 1967). This is proper because a licensing board's denial of a motion for summary disposition is an interlocutory order. See,

^{3/} In the Perry case, the Appeal Board held that a motion by Applicants for summary disposition of a contention had been improperly granted because a report had been considered by the licensing board without its being supported by an affidavit of a person competent to testify on it. Nevertheless, the Appeal Board went on to rule that applicants could renew their motion to cure the defect. 6 NRC at 757.

Louisiana Power & Light Co. (Waterford Steam Electric Generating Station, Unit 3), ALAB-220, 8 AEC 93 (1974). Being an interlocutory order, it is subject to being relitigated before the licensing board by means of a renewed motion.

As will be seen below, the Affidavit of Dr. Solomon M. Michaelson in support of Applicants' renewed motion sufficiently addresses the issues raised by the Staff to justify renewed consideration of Applicants' motion for summary disposition on Contention 17, and constitutes an adequate basis for the grant of the motion.

B. Summary Disposition of the Electric Fields
Health Effect Contention Is Appropriate

Dr. Michaelson's Affidavit explains that the "effects" on humans and animals of the electric fields cited in the Staff response (induction of internal fields and currents and perception of the external fields by some animals) are not an indication that the fields are hazardous. The Affidavit goes on to review in great detail the various kinds of scientific evidence (theoretical, epidemiological and experimental) bearing on the issue, and the numerous studies of each kind that have been performed and which show that no adverse effects on the health of humans or animals result from exposure to the electric fields generated by high voltage transmission lines such as the Susquehanna lines.


Dr. Michaelson indicates that there is no evidence of specific symptoms in humans due to exposure to the electric fields from transmission lines, and there is no known mechanism by which those electric fields can produce adverse health effects on humans or animals. He concludes, based on all available scientific evidence, that the electric fields from the Susquehanna lines will result in no detrimental effects to humans or animals.

It is clear that Dr. Michaelson's comprehensive discussion of the subject clarifies the questions raised in the Staff's Response and fully supports summary dismissal of Contention 17 in the absence of contrary competent evidence by the other parties. Accordingly, Applicants' renewed motion for summary disposition of Contention 17 should be granted.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

By


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Dated: August 18, 1981.