UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
Philadelphia Electric Company	)	Docket Nos. 50-352
	)	50-353
(Limerick Generating Station, Units 1 and 2)	)	
	)	

APPLICANT'S MEMORANDUM IN SUPPORT OF ITS MOTION FOR SUMMARY DISPOSITION OF CONTENTION V-4

Legal Introduction

Pursuant to 10 C.F.R. §2.749, the Licensing Board is authorized to grant summary disposition to a moving party on the basis of a motion, with or without supporting affidavits, which demonstrates that "the filings in the proceeding, 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 as to any material fact and that the moving party is entitled to a decision as a matter of law."[1/]

Under the Commission's Rules, a party opposing summary disposition is obliged to respond to the motion with "a separate, short and concise statement of the material facts

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1/ 10 C.F.R. §2.749(d).

as to which it is contended that there exists genuine issue to be heard."[2/] It is well established that an opposition to a motion for summary disposition "may not rest upon the mere allegations or denials of [the opponent's] answer," but "must set forth specific facts showing that there is a genuine issue of fact."[3/] See generally Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980).

The Commission has repeatedly emphasized the importance of summary disposition as a procedural mechanism for avoiding unnecessary and time-consuming litigation of issues which do not warrant an evidentiary hearing. For example, in Prairie Island, the Commission emphasized that an intervenor has a burden of demonstrating "to the satisfaction of the Board . . . that a genuine issue actually exists," and that summary disposition was particularly appropriate for "marginally acceptable"

2/ 10 C.F.R. §2.749(a).

3/ 10 C.F.R. §2.749(b). Where an intervenor does not oppose the applicant's statement of material facts, the Board may adopt the applicant's statement as its own. General Electric Company (G.E. Morris Operation Spent Fuel Storage Facility), LBP-82-14, 15 NRC 530, 532 (1982). Interpreting this particular aspect of the Rule, the Licensing Board in the North Anna proceeding granted summary disposition where the intervenors' answer "offered no meaningful factual data of their own." Virginia Electric and Power Company (North Anna Power Station, Units 1 and 2), LBP-79-25, 10 NRC 234, 238 (1979).

contentions.[4/] More recently, the Commission reiterated the desirability of this procedure in a Statement of Policy, directing its boards as follows:

> In exercising its authority to regulate the course of a hearing, the boards should encourage the parties to invoke the summary disposition procedure on issues where there is no genuine issue of material fact so that evidentiary hearing time is not unnecessarily devoted to such issues.[5/]

As the Appeal Board itself has stated, a hearing on any particular contention "is not inevitable."[6/] Whether a hearing "will be necessary wholly depends upon the ability of the intervenors to demonstrate the existence of a genuine issue of material fact respecting any of the issues they previously raised . . . ."[7/] Similarly, the Appeal Board in the Allens Creek proceeding has emphasized that the Commission's summary disposition procedures "provide in reality as well as in theory, an efficacious means of avoiding unnecessary and possibly time-consuming hearings on

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4/ Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-73-12, 6 AEC 241, 242 (1973).

5/ Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 NRC 452, 457 (1981).

6/ Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-654, 14 NRC 632, 634 (1981).

7/ Id.

demonstrably insubstantial issues . . . ."[8/] In upholding summary disposition of a contention proposing a marine biomass farm as an alternative to a nuclear power plant, the Appeal Board in the same proceeding demonstrated that this procedure can and should be utilized to resolve contentions which, while purporting to demonstrate some factual basis for a hearing, are entirely devoid of substance as a practical matter.[9/]

The decision of the licensing boards are consistent with these standards. As the Licensing Board recently stated in Big Rock:

> [T]he holding of evidentiary hearings is time consuming and expensive, and it is important that an agency with serious safety and environmental responsibilities not divert its attention from those serious issues. It is for these reasons that the Commission's summary disposition rule gives a party a right to an evidentiary hearing only when there is a genuine issue of material fact. An important effect of this principle is that applicants for licenses may be subjected to substantial expense and delay when genuine issues have been raised, but they are entitled to an expeditious determination, without need for an evidentiary hearing, on all issues which are not genuine.[10/]

8/ Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980).

9/ Allens Creek, supra, ALAB-629, 13 NRC 75 (1981).

10/ Consumers Power Company (Big Rock Point Plant), (Footnote Continued)

Similarly, in Comanche Peak, the Licensing Board held:

> Conclusions of law and mere arguments are not sufficient. The asserted facts must be material and of a substantial nature, not fanciful or merely suspicious. A party cannot go to trial on the vague supposition that "something may turn up," or on the mere hope that on cross-examination the movant's evidence will somehow be discredited.11/

The same point was made by the Licensing Board in Perry, which interpreted ALAB-629 as follows:

> The regulations do not require merely the showing of a "material issue of fact" or an "issue of fact." They require a genuine issue of material fact. To be genuine, we believe that the factual record, considered in its entirety, must be enough in doubt so that there is a reason to hold a hearing to resolve the issue.
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> . . . . . .
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> In this case, we conclude that we would spend unnecessary hearing time

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(Footnote Continued)
"Memorandum and Order (Concerning Motions for Summary Disposition)" (February 19, 1982) (slip op. at 2).

11/ Texas Utilities Generating Company (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-82-17, 15 NRC 593, 595-96 (1982) (footnotes omitted). Similarly, the Licensing Board in Catawba held that a movant's statement of material facts could not be successfully controverted by a counterstatement which amounted to "nothing more than a pro forma denial" because under the rules, "such denials are to be given no effect." Duke Power Company (Catawba Nuclear Station, Units 1 and 2), Docket Nos. 50-413 OL and 50-414 OL, "Memorandum and Order (Ruling on Applicant and Staff Motions for Summary Disposition of Contentions 16 and 19 and on Palmetto Motion for Sanctions)" (September 6, 1983) (slip op. at 15).

> trying to resolve the colorable difference existing in our record.12/

Thus, the Licensing Board carefully distinguished between a "colorable difference" between the parties and "a genuine issue of material fact." Under these precedents, a Licensing Board may grant summary disposition to an applicant, even where its statement of material facts is challenged, if the intervenor itself fails to present any material facts establishing a genuine issue to be litigated.

Argument

In its Special Prehearing Conference Order ("SPCO"), the Atomic Safety and Licensing Board ("Licensing Board" or "Board") rephrased the contention of Air and Water Pollution Patrol ("AWPP") regarding carburetor icing as follows and renumbered it as Contention V-4:

> Neither Applicant nor Staff have considered the potential for and import of carburetor icing of aircraft flying into the Limerick cooling tower plume(s).13/

Pursuant to the Board's SPCO, the Applicant directed requests for document production and a number of

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12/ Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 & 2), Docket Nos. 50-440-OL and 50-441-OL, "Memorandum and Order (Summary Disposition of Turbine Missile Issue)" (August 9, 1983) (slip op. at 8-9) (emphasis in original).

13/ Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 NRC 1423, 1515 (1982).

interrogatories to AWPP.[14/] In its response dated June 21, 1983, Mr. Romano, representative of AWPP, stated that "I have not, as yet, settled on need for an expert. I will notify you if I so decide."[15/] The Affidavit of Maynard E. Smith and David Seymour in Support of a Motion for Summary Disposition Regarding Contention V-4 ("Affidavit"), which is attached hereto and incorporated herein by reference, responds to the contention and a number of items raised by AWPP either in its request for discovery or the response to the request for discovery.

This contention was reviewed and analyzed by the Applicant's consultant, Meteorological Evaluation Services, Inc. ("MES") of which Maynard E. Smith is the founder, president and principal consultant (Affidavit at ¶1). Mr. Smith obtained a Master of Science degree in meteorology in 1942 and has been engaged in the practice of professional meteorology since that time (Id.). A copy of the complete statement of his professional qualifications is attached to the Affidavit and is incorporated herein by reference. Of particular importance herein is the fact that MES, under Mr.

14/ Applicant's First Set of Interrogatories and Request for Production of Documents to Air and Water Pollution Patrol, June 3, 1983.

15/ On September 22, 1983, during a conference call among parties, Mr. Romano indicated for the first time he intended to testify. It is entirely unclear whether he intends to attempt to qualify as an expert.

Smith's direction, has provided meteorological consulting services for the Limerick Generating Station since 1970 and is responsible for the preparation of the meteorological portions of the studies and documents necessary for the licensing of the Limerick Generating Station, including the Final Safety Analysis Report and Environmental Report-Operating License Stage (Id. at 1, 2). In addition, MES, under his direction, has conducted extensive studies relating to the effects of the operation of cooling towers on the atmosphere (Id. at 2). In these studies, carburetor equipped aircraft were used extensively to obtain data on cooling tower plume behavior (Id.). It is beyond question that Mr. Smith is an expert in meteorology, particularly meteorological phenomena associated with cooling towers.

The other affiant is David E. Seymour who is presently a consultant meteorologist to MES, Inc. Mr. Seymour obtained a Bachelor of Science degree from Purdue University in Professional Pilot Technology and obtained a Master of Science degree in meteorology from Rutgers University in 1976 (Id. at 3). He has provided consulting services to MES, Inc. on a number of airborne field evaluations which have included atmospheric diffusion studies and evaluation of stack and cooling tower plume behavior (Id.). He has conducted extensive airborne cooling tower research and was responsible for the training of 12 other commercial pilots involved in MES cooling tower research programs (Id.). Mr. Seymour has also been responsible for airborne photography

and aircraft procurement and maintenance for numerous aircraft involved in MES studies (Id.). He is presently a commercial airline flight officer and director of a glider pilot ground school in Rochester, New York (Id.). He is qualified as a commercial pilot in single and multi-engine land, glider and instrument aircraft (Id). He is also a flight instructor for glider, advanced and instrument ground training (Id.). A complete copy of his professional qualifications is attached to the Affidavit and incorporated by reference herein. Mr. Seymour is clearly an expert in meteorology, cooling tower phenomenon and the potential effect of cooling tower operation on aircraft.

Messrs. Smith and Seymour have analyzed the AWPP contention V-4. Their consideration utilized their extensive experience regarding the subject matter and involved the examination of the relevant literature on the subject, review of experience and field data developed in research studies of such plumes and the results of a computer modeling study of the expected behavior and persistence of plumes from the Limerick Generating Station (Id. at 4, 5). As discussed in more detail below, these experts concluded that the Limerick plumes will not add to the frequency or the severity of carburetor icing potential. The most important reason for their conclusion is that the temperature and moisture conditions in cooling tower plumes are only slightly different from those in the ambient air, despite what Messrs. Smith and Seymour call the impressive

appearance of the plumes on certain occasions (Id. at 6). Based upon their experience and knowledge, they also find that it would be extremely difficult for an aircraft to remain in the plume from the Limerick cooling towers for a sufficient time to develop significant carburetor icing even if the equipment built into the aircraft specifically for dealing with such icing were not even used (Id.). Their conclusions were based upon the fact that the dimensions of plumes from the Limerick Station would seldom allow more than a few minutes of flight time in the plumes and even where they are more extensive, staying in a plume long enough to provide a change for enhanced icing would be a difficult, deliberate maneuver on the part of a pilot (Id.).

The starting point of Messrs. Smith and Seymour's analysis was an assessment of how the temperature and moisture conditions in cooling tower plumes differ from those in the ambient air outside of such plumes (Id.). The affiants stated that, both from the impressive appearance of the plumes and a casual consideration of the large amounts of water vapor released, one who is not an expert could anticipate that the conditions in such plumes would be quite different from that in the surrounding atmosphere (Id. at 7). Messrs. Smith and Seymour, however, state that this, in actuality, is not the case because the very rapid mixing that occurs within the ambient atmosphere dilutes the excess heat and moisture within a short distance (Id.).

In responding to discovery requests, AWPP has emphasized that 35 million gallons of water vapor per day would be released from both of the Limerick cooling towers.[16/] Messrs. Smith and Seymour have compared this amount of water with the amount of water naturally present in the air with which the cooling tower release would mix and have concluded that this is not a significant amount. As an example, as more fully discussed in their affidavit at Paragraph 7, the 1.3 million gallons released from the tower in an hour would be mixed with 25 million gallons of natural water vapor which they deem not to be a major addition.

Messrs. Smith and Seymour base their conclusions regarding the conditions within a cooling tower plume, e.g., temperature, humidity and turbulent structure, on a number of studies, including one conducted in Pennsylvania by Pennsylvania State University on hyperbolic cooling towers (Id. at 8). This study made a large number of aircraft flights through the cooling towers from a power plant in western Pennsylvania for the express purpose of determining what in-plume conditions were like and how they differed from those in the ambient air (Id.). The study found that while close to the towers, i.e., with the aircraft traversing the plume within a quarter of a mile, temperature

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16/ Letter to Licensing Board from Frank R. Romano (June 21, 1983).

and humidity conditions varied sharply as the aircraft traversed the plume (Id.). Beyond a quarter of a mile, it became difficult to distinguish the temperature in the plume from that in the outside air and the humidity level dropped to a small excess (Id.). From the data collected and presented in the affidavit, the affiants concluded that while the plume may remain visible for a considerable distance, the conditions within it become essentially those of the surrounding air after a very short distance (Id.). The experts found that the Pennsylvania State study is directly comparable to the situation existing at the Limerick Generating Station since the experiments were done under nearly identical climatic conditions (Id. at 9).

During the 1970s, MES conducted an extensive study of cooling tower plumes for American Electric Power Service Corporation (Id. at 10). The objectives of this program were to determine whether such plumes had any significant environmental effects and how they behaved with respect to their height above ground and persistence downwind. The tests involved light aircraft of the same type that is of concern to AWPP (Id.). Over 340 experiments were completed. The water vapor emissions from some of the plants studied are in the same range as the total that will come from the two units at Limerick (Id.).

The researchers found that, of these 340 individual tests, visible plumes 10 miles and longer were observed only 6 times and of these six cases, three were at temperatures

well below 20°F which is too cold to have created any serious carburetor icing hazard (Id. at 11). Thus, as discussed further below, the pilots found plumes, in a program designed to document long plumes, with the adequate length and temperature criteria for potential carburetor icing less than one percent of the time (Id.). It was noted by the researchers that no icing problems were ever reported during all of the flying even though light, carburetor equipped aircraft flown by local pilots employing normal procedures were used extensively (Id. at 12).

MES has also conducted a computerized model study of the behavior of the Limerick cooling tower plumes using a computer code generated by the Electric Power Research Institute (Id. at 13-14). This computer code uses Limerick's thermal output and cooling tower water vapor and air volume releases at maximum power as input data, treating the two units simultaneously (Id.). The program combines this information with data from the Limerick meteorological tower facility and with data on above ground meteorology to develop a series of seasonal and annual distributions of pertinent information about the plume behavior and effects (Id.). This modeling study shows that the length of plumes would be expected to reach or exceed ten miles in less than four percent of the cases and the maximum frequency of these long plumes would be towards the west (Id. at 15). The code predicts that the Limerick plumes will always reach a height

of at least a thousand feet about the ground if they have not dissipated before reaching that altitude (Id.).

It is necessary to understand something about the phenomenon of carburetor icing in order to understand the reasons for concluding that carburetor icing would not be a problem. The conditions responsible for carburetor ice formation are well understood and have been extensively documented (Id. at 16). In carburetor equipped aircraft, the fuel enters the airstream at the throttle valve. The vaporization of the fuel, combined with the rapid expansion of air as it passes through the carburetor, causes a cooling of the mixture (Id.). The water vapor content of the intake air may condense and if the temperature in the carburetor reaches 32°F or below, the moisture will be deposited in the fuel intake system as frost or ice (Id.). This ice may reduce or block the passage of the fuel/air mixture to the engine and cause engine failure (Id.). Due to the venturi effect of a partially closed throttle valve, this occurs most often when the throttle is partially or fully closed and the temperature of air passing downstream of the throttle valve may drop as much as 60°F (Id.).

On very dry days or when the temperature is well below freezing, the moisture content of the atmosphere is generally too small to cause icing (Id. at 17). However, if the temperature is between 20°F and 90°F and moderate humidity or visible moisture is present, there is a potential for carburetor ice (Id.). Icing may occur with temperatures

ranging from 20°F to 90°F even at moderate humidities, however, it does not occur at temperatures below 20°F (Id.). Expert studies have shown that icing is not an instantaneous process; approximately 8 minutes of flying time under adverse conditions without carburetor heat would be required to create medium to heavy ice which could represent a significant hazard to aircraft (Id. at 18).

For the purposes of developing a very extremely conservative analysis, it was assumed by Smith and Seymour that (1) a pilot inadvertently flies through the plume without carburetor heat, (2) that the air speed is 100 miles per hour and that he is descending with a partially closed throttle, (3) that the visible cooling tower plume actually does present an icing hazard significantly different from the ambient air and (4) that it would take at least 8 minutes for a significant icing problem to develop (Id. at 19). Based upon these factors, it was concluded that if a pilot were to fly across the visible plume at an angle, it is doubtful he would remain in the plume long enough to accumulate any detectable icing (Id. at 20). If one were to fly directly perpendicular across the plume, an aircraft traversing visible plume would only be in the plume the order of two minutes inasmuch as cooling tower plumes are almost never more than one mile wide (Id.). A second situation was assumed wherein the pilot would be flying along the plume axis descending with a nearly closed throttle at a rate which matched the slope of the plume (Id.

at 21). The pilot would have to stay in the plume for more than 10 miles for serious icing to be encountered (Id.). Further, he would be approaching the cooling tower structures themselves while in the cloud during the latter part of his approach, an unlikely maneuver in itself (Id.). If the pilot would follow a similar path, but in the opposite direction during climb, he would be moving more slowly. However, under these conditions, the aircraft throttle would be open and the risk of icing would be smaller than the previously discussed case (Id. at 22).

The chances are thus very small that a pilot could encounter a plume having the right temperature and moisture conditions for icing and of sufficient length so he could inadvertently fly in the core of the plume for 8 minutes or more (Id. at 23). As previously discussed, the EPRI computer modeling study predicts less than 4% of the plumes reaching or exceeding 10 miles in length. Furthermore, the experimental evidence, the American Electric Power Program, showed only 6 plumes out of 340 tests extending to 10 miles or more and of these, 3 were present during conditions too cold to have presented an icing problem (Id.). Inasmuch as the Pennsylvania State University showed that conditions more than one quarter mile downwind of a cooling tower are virtually identical to those in the ambient air, whether inside or outside of the visible plume, the invisible plume extending downwind after the liquid droplets evaporated cannot be a cause for carburetor icing (Id. at 24).

Thus it may be concluded that there will be no significant increase in the potential for carburetor icing as a result of the cooling tower operation at the Limerick Generating Station. However, this does not mean that conditions which are responsible for carburetor icing do not and will not exist in the Limerick area. It should be emphasized that all pilots are trained to deal with the phenomenon of carburetor icing (Id. at 25).

Pilots are taught about the risks of carburetor icing in ground school and are trained from their first flights to use a carburetor heat, an anti-icing device that preheats the air before it enters the carburetor (Id. at 26). This preheating is used to melt any ice or snow entering the intake, to melt any ice that may have formed in the carburetor passages provided the accumulation is not too great and to keep the fuel/air mixture above the freezing point to prevent formation of ice (Id.). A pilot's first indication of carburetor ice is a drop in engine RPM for aircraft with fixed pitch propellers and a drop in manifold pressure for aircraft equipped with variable pitch propellers (Id.). Of course, aircraft with fuel injection or turbine engines cannot experience carburetor ice (Id.).

The vast majority of small planes flying at relatively low altitude, that is below 10,000 feet, are carburetor equipped and have carburetor heat controls (Id. at 27). Pilots are trained to check these controls during the preflight check and to apply heat at the first indication of

carburetor ice and during operations when the throttle is closed or nearly closed (Id.). Carburetor heat is not used in normal flights as it tends to reduce the output of the engine (Id.).

Pilots who are not instrument rated and on an instrument flight plan, must avoid flying in or near the visible cooling tower plume because it appears as a cumulus-looking cloud (Id. at 28). Visual Flight Rule ("VFR") rated pilots are required to avoid clouds by at least 2,000 feet horizontally and they must also remain at least 1,000 feet above and 500 below clouds in the Limerick area (Id.). While on a few occasions during the year the operation of the Limerick cooling towers may cause slight deviations in approach, departure or flight paths for VFR pilots, this situation is no different than that which would be encountered by such pilots having to avoid natural cloud formations. Instrument Flight Rules ("IFR") aircraft could enter the plume either purposefully or inadvertently, but as previously discussed, their resident time in the plume would be brief (Id.). Also, their aircraft are required to have carburetor heat controls to be instrument equipped (Id.).

It has become apparent during the course of discovery that AWPP has several misconceptions about the operation of cooling towers and the phenomenon of carburetor icing. AWPP appears to be hypothesizing a situation in which the ground level winds are calm, the air appears to be almost completely stagnant and the moisture released from the towers is

constantly adding to the atmospheric humidity which is present (Id. at 30). While this phenomenon can actually happen if moisture is released without buoyancy very close to the ground surface, it is not applicable to the situation at Limerick (Id. at 30, 31).

Plumes from the large hyperbolic towers such as those at Limerick do not cause any such buildup of local moisture. First of all, these plumes originate far above the ground at altitudes where completely calm winds are almost never found (Id. at 31). The moisture is therefore transported away from the source, sometimes slowly, but there is always transport of the moisture (Id.). Secondly, when stagnant conditions exist close to the ground and the winds are very light, the great buoyancy of the cooling tower plumes carries the moisture far above the top of the towers usually to several thousand feet above the terrain (Id.). Thus, the cooling tower plumes are completely divorced from the low level conditions, rising high above the local stagnation and drifting off at the speed of the winds aloft (Id.).

In a response to an interrogatory propounded by Applicant,[17/] AWPP recounts an episode where a condensed water vapor cloud was observed along the Schuylkill Expressway coming from the Roxboro incinerator. It is implicit that AWPP believes that this situation is

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17/ Response AI-13 dated June 21, 1983.

comparable to Limerick. This facility is a small incinerator in which a water spray is used to reduce the effluent temperature to levels commensurate with the design of the electrostatic precipitator (Id. at 32). It is in no way comparable to the Limerick cooling towers (Id.). MES obtained the meteorological data from the national weather network for April 9, 1982, the day for which AWPP alleged that the incinerator produced local fog (Id. at 33). These data clearly indicate that snow and fog were observed most of the day at the Philadelphia International Airport and it is very likely that the fog along the Schuylkill River was entirely natural (Id.).

In its interrogatories to Applicant,[18/] AWPP has raised the question of whether the operation of the Limerick cooling towers could imitate thunderstorms which could be a hazard to aircraft. This phenomenon has never been observed in any field study of cooling tower plumes, and a comprehensive study of this question shows that 10 or 15 plants of the size of the Limerick Generating Station would have to be clustered in a small geographical area for such an effect to be possible (Id. at 34). AWPP has also implied that the rising plume from the towers could create turbulence and wind shear. Studies demonstrate that, based

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18/ Intervenor Air and Water Pollution Patrol (Romano) Formal Discovery Requests of Philadelphia Electric Company (Applicant) (July 12, 1983).

upon numerous traverses of cooling tower plumes, nothing more than light turbulence and slight updrafts were encountered (Id.). This is confirmed by MES experience during the American Electric Power studies (Id.).

Conclusion

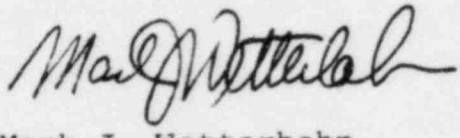
Experimental measurements, modeling studies, practical physical considerations and extensive pilot experience prove conclusively that cooling tower plumes, visible or invisible, present no special carburetor icing hazard to aircraft. Conditions in the plume at distances of a quarter mile or more from the towers are insignificantly different from those in the ambient air as far as temperature and humidity are concerned. It is, however, possible to experience carburetor icing if an aviator were to fail to turn on carburetor icing and deliberately fly forth and back in the core of a cooling plume. However, anyone performing such a maneuver flying parallel to the plume rather than within it would encounter virtually the same conditions and same potential for carburetor icing. Thus the potential for a carburetor icing of aircraft flying into the Limerick cooling tower plumes has been appropriately considered by Applicant.

In summary, Applicant has met the requirements of 10 C.F.R. §2.749 that there is no genuine issue as to any

material fact and that it is entitled to a decision as a matter of law. The requested relief should be granted.

Respectfully submitted,

CONNER & WETTERHAHN, P.C.



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September 27, 1983

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September 27, 1983

Mr. Frank R. Romano
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In the Matter of
Philadelphia Electric Company
(Limerick Generating Station, Units 1 and 2)
Docket Nos. 50-352 and 50-353

Dear Mr. Romano:

As we discussed last week, enclosed is "Applicant's Motion for Summary Disposition of Contention V-4" and associated material. I am forwarding a copy of a document entitled "Cooling Towers and the Environment." This is the only reference listed in the "Affidavit of Maynard E. Smith and David Seymour in Support of a Motion for Summary Disposition Regarding Contention V-4" which has not been previously made available to you during the course of discovery.

Also enclosed are Applicant's answer to interrogatories p, q and u as ordered by the Atomic Safety and Licensing Board. The documents referenced in these answers are also being sent with this letter.

Sincerely,

Mark J. Wetterhahn
Counsel for Philadelphia
Electric Company

MJW:sdd

Enclosures

cc: Service List