



AIR and WATER Pollution Patrol

BROAD AXE, PA. Nov. 27, 1983

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Before The Safety and Licensing Board

In The Matter Of
PHILADELPHIA ELECTRIC COMPANY
(Limerick Generating Station
Units 1 and 2)

Docket Nos. 50-352
and 50-353

AWPP' S (Romano) Answer To Applicant's Motion
To Strike Frank R. Romano's Testimony re Contention V-4

On November 21, 1983 Applicant entered a Motion To Strike Testimony in above Contention.

Applicant stated it based its strike on (1) "grounds that it (AWPP Testimony) is not competent"; (2) that "it is not material"; (3) that "it is not relevant evidence"; and (4) "that AWPP has failed to demonstrate that Mr. Romano is qualified to be an expert witness such that he may give expert testimony".

Relative to (1) above AWPP answers that the testimony given by Romano is just as competent as the authors of the many references (some also used by Applicant) I have quoted, as identified in the Romano testimony.

As it relates to point (2). the testimony Romano detailed (with references to tests and opinions of other experts) is material in that it shows Romano's understanding of the principle that with the right conditions of air moisture and temperature, carburetor ice can and will form over wide temperature ranges. Romano's testimony was directly related to the specific factors involved in the carburetor icing phenomena and the problems involved in the insufficiency of the crude carburetor heat arrangement to guard against carburetor icing many times resulting in engine failure and dire consequences. The mere indication of a drop in RPM or manifold pressure is not, as the Applicant alleges, the easy assurance of protection from carburetor ice engine failure.

No better proof of the ambiguous nature of the carburetor icing hazard is evident as per "Light Aircraft Piston Engine Carburetor Ice Detector/Warning Device Sensitivity Effectiveness" (Reprint of June 1982



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supplied in Krug Testimony in Support of Applicant) identified as DOT/FAA/CT-8244 at page 10.

As it relates to the difficulty of recognizing carburetor ice and inadequacy of pilot training re carburetor ice prevention and cure (which was jist of part of Romano's testimony) records on page 10 of above reference show that in the 1978-79-80 period there were 8 accidents caused by Carburetor ice in aircraft flown by Certified Flight Instructors.

As it relates to point (3), testimony given by Romano (in which many references used by the Applicant were referred to) must be considered relevant if the Applicant used the same references (see AWPP's Statement of Material Facts). Certainly Romano's testimony that thirty five million gallons of water as vapor increases the localized moisture, to increase the potential for carubretor icing, is relevant...in particular under already quasi-saturated natural moisture conditions.

Certainly Romano's testimony that Applicant's own supporting reference (Discoveryll, item 2D) showing graphics from tests at John E. Amos plant with plumes 5,000 feet and more from the plant are relevant. Certainly Romano's testimony supported by the Applicant's own references which questioned validity of results when there are airport traffic patterns nearby (as exists at Limerick) is relevant. It is relevant because the New York Sectional Aviation Map, as well as LGS FSAR at 2.2. 2.5 shows 5 public use and 10 private airports within 10 miles. Actually Butter Valley airport, just 10 miles away is not listed, and no doubt there are more.

There are four airports whose traffic patterns would practically intercept even short plumes as Mr. Romano knows from personal experience as detailed in his testimony of hundreds of hours flying in the Montgomery County areas. The relevancy and experience of Mr. Romano is evidenced in showing that Applicant's witness Mr. Geier unlike Mr. Romano, has



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not flown in the Limerick area but depends on hear-say of "inspectors from the Philadelphia Aviation District Office who flew the pattern "recently" and "were not near the cooling towers". Such testimony relates to proximity to towers, unrelated to carburetor ice. Further, as it relates to point (4) AWPP states it is in Frank Romano's self-interest and safety to keep abreast of the literature and incidents of accidents and the need to know factors involved in air safety. Thus Romano's membership in Airplane Owners and Pilots Association for the past five years is to take part in their main activity of insuring pilot safety through continued contact with latest information and updated courses of study re weather, flying tips and safe operation.

As a pilot flying two or three times per week and understanding the greatest factor in safety, namely, respect for weather characteristics such as visibility, sky conditions, temperature, dew point, pressure, air density, and proper aircraft maintenance, Romano is familiar with the principles and consequences of carburetor icing far in excess of a meteorologist who specializes, for example, in factors involved in different types of cloud formations, or factors involved in weather forecasting, or weather studies at flight levels over normal use, etc. The main point is that a regularly flying small plane pilot (even as against an airline pilot who mostly flies above the weather, and has no carburetor to develop ice) becomes very knowledgeable about things that could cause engine failure. Carburetor ice is paramount as to cause for engine failure because it can occur fast, and when you least expect it. In spite of this understanding any localized condition conducive to carburetor icing can suddenly overcome attentiveness as Mr. Romano personally experienced without warning. The diagnosis of carburetor



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icing experienced by Mr. Romano was not hear-say as stated by Applicant, but statement of a mechanic at the Cape May field who, because of familiarity with high moisture in the Cape May area, and low temperatures of the October day, stated assuredly it was engine failure due to carburetor ice.

Respectfully,

AIR & WATER POLLUTION PATROL

Frank R. Romano, Chairman
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FRR/jch

I certify the Service List has been served.