

RE: PHILA.ELEC.CO. Limerick Gen. Sta. Units 1 &amp; 2. Docket # 50- 352,353 O C

R.L. ANTHONY/FOE BRIEF IN SUPPORT OF APPEAL TO APPEAL BOARD OF 10/23/84 FROM  
SECOND PARTIAL INITIAL DECISION, LBP-84-31, ON CONTENTIONS V 3a and V 5-b.

## OUTLINE OF SITUATION.

LB's rulings on our contentions constitute a failure of NRC through its staff efforts and the judicial process of its licensing board to protect the health and safety of the public. LB also demonstrated a discounting of citizen, pro se, participation and expertise while favoring Applicant and Staff testimony.

Had it not been for our efforts, the danger from fuel and gas pipelines at the Limerick <sup>plant</sup> would not have been considered in the licensing process, contrary to NRC regulations. Pipelines were never an issue in the construction permit hearings and it was at that time that the site should have been disqualified, or requirements of re-location enforced. (Exhibit A - 11A) It appears that PECO made the assumption that their obligation to protect the plant and the public from outside explosions was complete when they estimated the results of a possible railway accident and explosion. Because of our research and vigilance they were compelled to study possible explosions caused from ARCO and Columbia Gas pipeline accidents. In a perverse and tragic way, however, PECO and NRC used the pipeline hearings to reinforce their positions. The single positive step prompted by our contention, taken by PECO, to lessen the risk, was the agreement negotiated with ARCO to refrain from transporting propane. This was used, however, against the public safety as a barrier to taking the only effective step, relocating the ARCO line.

The only credible conclusion from LB action on our contentions and on identical outcomes for the other contentions covered in the LB decision is that LB interprets its function as focused on the second part of its title. It appears determined to license at all costs and to support the applicant no matter what that does for the safety and vital interest of the public. We understand that the Appeal Board has a view of its function that includes a vision of protecting the public. In respect to our contentions, there was ample evidence included in 16 days of hearings, and thousands of pages of record from the pipelines. The exact scenario for an accident that would damage the plant did not have to be selected, nor the minimum or maximum overpressures that could be created. LB's function should have been to establish that accidental releases from the pipelines could cause explosions which could impact the plant. It was the duty of LB to eliminate this risk. It should have ordered the relocation of the pipelines. We trust that AB will make that order. To this end we show how the LB process was flawed, and prejudiced against the public's interest.

\*\* 2 \*\*

PROTECTION OF PLANT AND PUBLIC FROM EXTERNAL EXPLOSIONS.

Without Anthony/FOE research and participation in the licensing process there would have been no consideration of the dangers from pipeline explosions. Our filing caused PECO and the Staff to become aware of these lines. PECO's investigation was carried out by a meteorologist named John Walsh. He had no credentials and training to qualify him to advise PECO on pipelines. We stated this to the LB in our 11/1/83 response to PECO's motion for summary disposition. (See : page 5 . ) Before the hearings and during them a part of Mr. Walsh's testimony was discredited . In spite of this LB referred to his testimony as the basis for their decision in LPB-84-31 more than a dozen times. We think LB showed a slant toward his testimony and that of the the Staff which almost excluded the evidence which came out through cross examination during the hearings. Mr. Walsh was proven wrong about the following:

The amount of fuel from an ARCO break.

The automatic shut-off equipment would work without fail.

He asserted it would<sup>work</sup> without any expert knowledge or having seen it.

The amount of fuel from an ARCO break would be 8 to 10 times his estimate.

The pumps would keep pumping after a break for two or more hours.

The pipeline from Limerick north would drain out of a break at Limerick .

This means more than 7 miles of fuel draining from the ARCO pipe.

There would be syphoning .

Mr. Walsh contradicted his written testimony that he had seen both pipelines.

It was our information before the<sup>hearing</sup> and through testimony and cross examination which caused Mr. Walsh and the Staff to amend their estimates of the amount of fuel available from an ARCO break, and to accept the possibility of an explosive mixture from a Columbia break moving toward the plant and being detonated. In the following sections we will show how PECO's and the Staff's positions were modified by our information and how little attention LB paid to these modification in their decision, thereby compromising the judicial process and the safety of the public.

ANALYSIS OF LB CONSIDERATION OF EVIDENCE ON CONTENTIONS V 3a and 3b.

LBP-84-31 Par. B-3. It should be noted that we were able to go beyond the syphoning issue and radiant heat. If we had not pursued these contentions LB might not have questioned whether the safety related buildings were designed to withstand external explosions.

B-5 R.L. Anthony's study of the site and pipelines provided reliable information used by the other witnesses and LB. He should have been permitted to testify.

B-6. LB did not give consideration to "consequences of worst case accidents." It accepted PECO and Staff figures.

B-7 LB ruled on the adequacy of the structures without allowing any inquiry into whether they had been built according to design. Ex.A , 8A and 78A. We disagree with LB that our contentions "have no merit". Even if the structures can withstand the worse case pipeline explosions, which we doubt, LB has the responsibility to prevent the risk to plant and public from allowing the possibility of external explosions by requiring relocation of the lines. To reinforce our responses we refer to portions of our " Rebuttal of Applicant's Reply Findings" dated 6/6/84, included as Exhibit A.

B-10 Mr.Christman testified that ARCO pumps could fail to shut down in a line break .(Se Ex. A-11A.)

B-11 Walsh testified about ARCO pipeline operation, but was discredited because he has no expertise in pipeline operation . LB correctly does not exclude syphoning and accepts our assumption of the ARCO pumps continuing after a break.

B-19 LB accepts our scenario of break on the hillside and the possible spraying of an area up to 65,000 sq.ft.

B-20 The Staff accepts our hillside spray scenario and arrived at a combined evaporation area in stream and on hillside of 24,800 sq.ft.

B-21 LB points out the disagreement between Walsh's and Staff's TNT equivalent, 5,252 pounds for the former, 1,856 for the latter. LB makes the assumption, "Applicant initially used a conversion factor for TNT equivalent that was four times too great" There is nothing in the record to support this conclusion. Both conversion factors were used in the testimony and there was no conclusion that one was more right than the other. To carry out LB's "worst case" principle the higher factor would have to be used, and, indeed, it was used in Tab. II, p.76C, columns 3 and 4.

B-22. LB ignored the worst case basis of a streambed and hillside evaporation <sup>area</sup> for an ARCO break and based its conclusions on Walsh's discredited streambed release and the Staff's distance of 960 feet, while PECO used 550 feet as worst case. The record shows that with PECO using a larger evaporation area and the Staff using PECO's conversion factor both calculated higher overpressures than the 3.0 psi recorded here for PECO and 2.1 psi for the Staff.

Under cross examination Walsh calculated from the vapor of 21,000 gallons, (Tr. 5482) instead of the 4,962 gallons which produced the 3.0 psi. LB chose to ignore this Walsh calculation which produced more than 4 x 3.0 psi. Similarly LB ignored the Staff's calculations on 24,000 sq.ft., using PECO's conversion factor, <sup>TR</sup>7288. The Staff was asked to calculate on larger sprayed areas, 7291, 7300, 7264 and 7276. At 7506 the Staff calculated an over pressure of 24.psi. LB takes no account of this worse case, nor does it show up in the Staff's Table I, p. 76D.

B-23 LB ignores Hasbrouck's maximum 28.psi, calculated from larger spray areas

(Hasbrouck test. # 1. p. 3)  
in a similar manner to the Staff. To fairly evaluate the worst case, LB erred in ignoring these calculations based on larger sprayed areas. Further evidence on the justification for larger areas comes at 6104, 6106, 6119, 7158, 7243, and 7274.

B-24 LB apparently misunderstood our concept of a greatly enlarged pooling area in Possum Hollow Run in the wide, marshy area upstream from the railway embankment. A PECO road parallel to the railway embankment could provide a dam. Evaporation would be not in the Schuylkill valley but in the lower part of Possum Hollow Run directly opposite <sup>the</sup> south wall of the reactor building. Dr. Campe testified that such a damming could contain 500,000 cu.ft., 7541. He said that all the fuel flowing down the Run could be dammed for three hours without flowing into the Schuylkill 7524-7558. This changes completely PECO's and the Staff's concept that the capacity of Possum Hollow Run was limited to the steep, narrow section above the plant, and that all excess <sup>fuel</sup> would flow immediately to the Schuylkill. ( See Ex. A 9-A and 28 A )

This possible scenario should not have been discarded by LB since it makes possible the collecting of the flammable mass from hillside release and flow into the Run at a location in the open directly in front of the reactor building with the possibility of a much larger flammable mass than in any other scenario.

B-25 In assessing worst case conditions, LB erred in not evaluating the whole range of scenarios and values. It chose to classify <sup>Staff's</sup> 2.1 psi as "conservative," even disregarding PECO's <sup>also</sup> conservative 3. psi. It is apparent that LB was not really interested in establishing the worst case or it would have weighed the other possible values, including 24. psi calculated by the Staff, TR. 7506

B-31. Diffusion would be impeded under inversion conditions. Ex. A 60A

B-33. LB should have evaluated our scenario of both ends of break pointed toward the plant causing a "fire hose effect and momentum. Ex. A . 60A.

B-36 Walsh's 10 psi was discredited by 16. psi Tab II, submitted by PECO. In a worst case LB cannot ignore our scenario for an ignition trigger from gas confined at plant level.

B- 39 LB cannot "give no weight" to any travel scenario for the flammable mass since all scenarios are hypothetical and LB must evaluate "worst case".

B-40 Nowhere in the record is Reg. Guide 1.91, Rev. 1 proven to be the "correct value". In fact all who testified, including PECO's attorney, admitted not being able to understand it. This <sup>Reg.</sup> Guide factor was discredited; PECO's  $\times 10^5$  never. PECO used it <sup>legitimately</sup> in Tab. II columns 3 and 4, without challenge from LB.

For a worst case LB had to consider closer approaches to the plant; for example 800 feet, offered by Hasbrouck. Ex. A 60A .

B-50 Some of PECO's calculated "margins" are not margins at all, as little as 3 %, Tab. I.



B-53 LB ignores Walsh's ARCO 3. psi @ 500 feet and others, up to Staff's 24.psi.  
B-54 Again LB suggest Reg. Guide 1.91 is "correct" without any justification.  
LB ignores columns 3 and 4 Tab. II, overpressure of 16. psi.  
B-55 LB must accept the possibility of ignition sparked by a confined mass. (& B-56 )  
B-57. Not so. Scenarios for ARCO must be considered up to Staff's 24.psi.  
B-58. Again LB leaves out Tab. II columns 3 and 4.  
B-59 . No so. ( See B-57 above.)  
B-60. We question whether "critical element" is valid in this estimation.  
We assert the only valid test would be derived from testing the weakest points in the walls and roofs in their "as built" condition.  
B-64. This is not an adequate worst case margin, 27% for midspan.  
B-66. There is no record of what Staff found when they checked PECO's calculations.  
B- 67 The study was not complete without evaluation of threshold of failure.  
B-67 Again LB without any justification asserts "proper TNT conversion." In Tab. I some margins are inadequate, as little as 3.3 %, roof reactor bldg. 2.  
B- 68 LB is in error in comparing earthquake loading with that from explosions since the latter operates through the ground the latter through the air.  
B-70. There is no evidence that dead weight was calculated as additive to blast pressure on the roofs.  
B- 71, 72, 73. In evaluating worst case conditions LB should not have ignored vibratory load, temperature differentials, and hydrostatic forces, differential settlement (B-74.)  
B-75 and 76. From its responsibility for public safety LB must consider the failure of the louvre and roof openings since any such passage from the interior of the containment building would allow radioactive contamination outdoors. The reference to a small <sup>pressure</sup> increase inside the building obscures the real hazard to the public, radioactive contamination of the outside air.  
B-79 to 85. LB is wrong to dismiss the dangers to the plant <sup>and public</sup> from the overturning of cooling towers and transmission towers and breaching of basins. There was no conclusive evidence to rule out parts of these scenarios, at the least, so they cannot be left out of consideration in worst case conditions.  
B-86 through 89. The possibility of damage to the spray pond and its equipment is still open and is the subject of a special study, still unresolved.

#### CONCLUSION.

B-90 In finding that our scenarios for accidents and calculations are "without merit " LB supported PECO's interests and abdicated its responsibility for the public's health and safety and it contradicted its own assertions in B-5 "We do consider the consequences of worst case accidents... "

On the basis of these specific LB errors and failures we petition the Appeal Board to reverse the LB decision on our contentions, and to granted the requested relief.

cc. by first class mail to:  
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Nov. 23, 1984

Respectfully submitted,  
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