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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C.

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BEFORE THE COMMISSIONERS:

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Nunzio J. Palladino, Chairman
Thomas M. Roberts
James K. Asselstine
Frederick M. Bernthal
Lando W. Zech, Jr.

In the Matter of : Docket Nos. 50-352 OC
50-353 OC
APPLICATION OF PHILADELPHIA :
ELECTRIC COMPANY : Re: ALAB 785

PETITION FOR REVIEW

Pursuant to 10 C.F.R. §1.786, Intervenor Del-AWARE Unlimited, Inc., petitions for review of the decision of the Appeal Board in ALAB 785 issued September 26, 1984, and avers that the decision is erroneous with regard to the following important questions of fact, law or policy:

1. The Appeal Board failed and refused to consider or deal with the fact (Exceptions ¶7; Motions of May 25, 1984 and August 6, 1984) that the Pennsylvania Public Utility Commission Initial Decision and the Environmental Hearing Board decision (now final in this aspect), found and determined that the diversion, as planned, would cause unacceptably substantial erosion in the East Branch Perkiomen Creek, the intended conveyance channel to Limerick; and failed and refused to consider the fact that the limitations on use imposed by the PUC initial decision would render the

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diversion inadequate for Limerick, while those required by EHB would not, as found by the PUC, protect the East Branch.

At the same time, the Appeal Board failed and refused to consider the fact the Applicant had consciously elected to abandon channelization of the East Branch in 1972, despite its knowledge that the use of the East Branch as a diversion channel without channelization would cause substantial erosion, because applicant felt that the NRC staff, at the time, would be more concerned about channelization than about erosion, but did not inform the NRC of its conscious decision to incur this damage. This internal memorandum of this decision was found only in 1984, and was provided to the Appeal Board by Motion of August 6, 1984, and is attached hereto as Exhibit A.

The Commission should review this action because it permits a serious environmental impact of a critical element of a facility, which was knowingly incurred by applicant, but not divulged to the Commission, and has not been considered as required by 10 C.F.R. ch.51.

2. Although the Appeal Board remanded to the Licensing Board because it correctly found that the Licensing Board had erroneously excluded contentions relating to downstream salinity effects in the Delaware River, it failed, or may have failed, to include in such remand potential downstream effects of the diversion on dissolved oxygen levels. (See Exceptions ¶17.)

The Commission should review because it is a serious environmental impact and Commission staff promised to review it in inducing the EPA to allow DRBC to approve the diversion.

3. The Appeal Board failed and refused to properly identify the legal effects of impacts of the diversion American Shad and Shortnose Sturgeon; (See PID 3/8/84; ALAB 785); it failed and refused to recognize that a significant environmental effect could occur from a substantial diminishment of the population, even though the species may not be threatened, and thereby affirmed a similar misapprehension of the law by the Licensing Board; it failed to deal with the fact that the population will be reduced by tens of thousands of fish because the Point Pleasant intake is located in a spawning and nursery area for American Shad.

Likewise, the Appeal Board failed and refused to reverse the Licensing Board's erroneous decision which in turn sustained the refusal of the staff and National Marine Fisheries Service to recognize the potential effect on what may be important habitat shortnose sturgeon, an endangered species, but found it appropriate to proceed despite the absence of any sampling for shortnose sturgeon in the Spring of the year, the only time when they could be expected to be present, despite the fact that they have been taken as close as 8 miles from the intake site.

This Commission should review the matter because it is a serious environmental effect of the project, and a basic legal issue for this Commission.

4. The Appeal Board erred as a matter of law in determining that the Commission need not follow its regulations, requiring that the hearings not be held until the draft environmental statement was issued, and in allowing the staff to present staff views despite the fact that the draft environmental impact statement had not yet been issued. The issue was initially raised by Motion of September 24, 1982, by Exceptions ¶1 and 2).

The Commission should review this issue to perceive the integrity of its procedures to insure compliance with NEPA.

5. The Appeal Board erred in not disqualifying staff witnesses who had exhibited a predetermination and commitment prior to commencing their investigation of the subject matter. Motion of September 24, 1982, Exceptions ¶24), Reason for Review: See ¶5.

6. The Appeal Board erred in failing and refusing to hold that NEPA and the Atomic Safety Act require that the applicant identify and consider, and that the FES identify and consider, all reasonable alternatives to the supplemental cooling water system, as a result of likely changing Limerick from two units to one, and that neither had done so, and therefore failed to require considering of alternatives likely in fact, to be implemented.

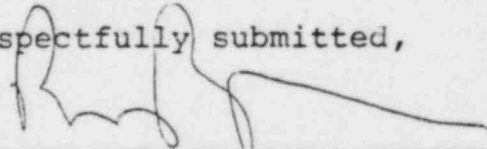
(Contention V16C, and V-24; Board Order of January, 1983; Exceptions ¶19.)

The Commission should review this question because the subject of alternatives is the linchpin of compliance with NEPA, at least where, as here, the potential reduction of Limerick from two units to one unit makes possible a range of alternatives previously not considered. (See 10 C.F.R. §51.71.)

7. The Appeal Board erroneously sustained the Licensing Board's refusal to allow intervenor to litigate the effect on the Delaware Canal, a National Historic Landmark, on the ground that Contention reference to the "Historic District" did not encompass the Landmark within it. (Contention V-16, Exceptions ¶11.)

The Commission should review this matter because of the importance of Historic Landmarks, and the need for Commission compliance with NEPA; and the need to avoid elevation of technicality to importance.

Respectfully submitted,



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Dated: October 10; 1984
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ENVIRONMENTAL IMPACT STATEMENT OF PHILADELPHIA ELECTRIC
ON THE LIMERICK NUCLEAR POWER PLANT

MEETING OF DECEMBER 17, 1972

Scope:

This meeting was in connection with usage of the stream channel of the East Branch Perkiomen Creek to convey water pumped from the Delaware River to a point along the main stem of Perkiomen Creek where it will be picked up and transmitted to the Limerick Plant.

Attendance:

Philadelphia Electric Company:

Mr. Dave Marano
Mr. Lou Pyrih
Mr. Haines Dickinson
Mr. Edward Purdy

Ichthyological Associates:

Edward C. Raney, Director
Paul L. Harmon, Project Leader
Mr. Robert Molzahn

E. H. Bourquard Associates, Inc.

E. H. Bourquard
Terry L. Fought

The meeting started with a discussion by E. H. Bourquard of the proposed channel improvement of the East Branch. This would consist of a 20-foot bottom width low flow channel starting where water is pumped into the East Branch from the Delaware River and extending 2500 feet downstream thereof (Later considerations were that this channel should extend at least to the Route 313 bridge, a total distance of about 8000 feet). The proposed channel would carry the 65 cfs maximum pumpage rate at a depth of 1.2 feet and the minimum pumpage rate provided in the DRBC water allocation of 18 cfs at a depth of 0.6 foot. We are reasonably certain that this proposed channel, with grassed banks, would conform to the requirements of the Impact Statement that there be no erosion; however, some maintenance would be required as a log or other flood debris could lodge in the channel and upset the regimen of

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the stream. In explanation of the fact that the stream channel should be able to withstand erosion, E. H. Bourquard described a visit to the stream channel on November 10, 1972, when he and T. L. Fought inspected the upper reaches of the stream channel to note erosion from a flood which occurred on November 8th. This flood was roughly estimated to be approximately 400 cfs at Elephant Road Bridge and travelled down the stream channel at a depth of about 5 to 6 feet (4 to 5 feet above stream flow at time of visit). The only signs of erosion that were noted were along the outside bank of sharp bends where the water cut into the bank until it became an almost vertical face and continued to erode the unprotected surface, evidently for the duration of the flood flow. The other portions of the stream seemed to suffer only very minor erosion due to this flood. The existing vegetation and the soil forming the stream banks, which is plastic, appear to offer relatively high resistance to erosion. Also, the existing stream channel did not have much capacity for flood flows and when such flows occur the depth increases considerably and overbank flooding occurs. Pictures taken on November 10th, which showed the condition of the stream channel and the height of the November 8th flood, were passed around the group. Dave Marano stated that Dr. Rancy had felt that no stream channel work of any type would be the best solution for the East Branch ecological problem and questioned why a channel should be installed. The existing stream channel can handle the peak pumping rate (65 cfs) at a depth of about 2 feet and, in general, should be within the banks of the stream which are approximately 3 to 6 feet high. Prints were passed around the group which showed computed flow lines for various discharges and the location of sections utilized in the flow line computations. Probably the only reason for the improved channel would be to firmly establish P. E.'s liability with regard to passage of the peak pumping rate; without such a channel, it is possible that P. E. might be blamed for any damage that was incurred as a result of a flood on the stream. It was pointed out that, at present, State laws pertaining to work on stream channels are primarily direct

at prevention of floods and do not necessarily take into account ecological matters. Also, the property owners along the stream channel are more likely to be concerned about flooding than the biota of the stream channel. Accordingly, P. E. might be considered liable for any difference in water level between the normal flow of the stream and the flow line of the 65 cfs peak pumping rate. Another item is the matter of stream crossings by property owners, such as farmers, who own land on both sides of the stream and are able, throughout most of the year, to ford the stream. With the passage of a 65 cfs flow, such fording would not be possible. P. E. will have to install some type of crossing where this situation exists. E. H. Bourquard stated that a general inspection of aerial photographs and property lines along the stream channel did not indicate very many places where a property owner worked across the stream channel; however, this must be checked in more detail later.

At this point, Dr. Raney reiterated his position that no channel work should be performed on the East Branch. He pointed out that stream channels are formed during times of flood and that during the rising stage of the flood most of the erosion takes place, whereas, on the following stage, the water becomes relatively clear except for colloidal materials. He felt that the existing channel, which had been formed by past flood flows, should not be materially affected by the peak pumping rate which is much less than the usual flood. In addition, channel work would destroy the ecology of that part of the stream and the resulting erosion from this work could be expected to deposit silt in the stream as far down as Sellersville. He was asked what measures might be taken to improve the ecology of the stream after channel improvement work had been installed. He stated that his observation of improved channels where definite attempts had been made to restore the ecology by small dams, groins, etc. had, even after a period of 15 years in some cases, not been very successful. He cited the Highway Department and other N. Y. State agencies' attempts to restore the ecology of improved channels as an example of what should not be done. Lou Pyrih pointed out that leaving the channel as is would probably expose

it to erosion with the increased flow over a long duration, as compared with the existing situation where high flows occur for short durations and very low flows are present at all other times. E. H. Bourquard was of the opinion, based upon observations of the West Branch of Codorus Creek, in York County, that the 65 cfs flow would erode a relatively stable channel into the existing stream bed below the point of discharge but that such erosion would be limited in amount and occur over a period of years. The flow of the West Branch of Codorus Creek is effectively controlled by a large dam on the main stream and by a diversion weir-pumping installation on the stream draining the remaining upstream watershed. Between these installations and Spring Grove, where the controlled flow is picked up, there is about seven miles of channel which, for the past 4-5 years has carried a relatively high and constant flow several times greater than the previous median flow of the stream. Inspection of this channel indicated that erosion of the existing East Branch channel would not create a sufficient volume of sediment to be damaging to the downstream channel. Also, it was pointed out that observations of the East Branch watershed and the tributary streams suggested that the major source of sediment carried by the East Branch is the tributary streams and sheet erosion of the watershed. This was somewhat confirmed by the results of total solids tests made on water samples taken during the June 23, 1972 flood on the East Branch. Going in a downstream direction from Elephant Road, where the total solids content, in milligrams per liter, was 208, to State Route 313 with a total solids content of 456, to Route 309 with content of 1196, to State Route 63 with a content of 1406, and finally at State Route 73 with a total solids content of 1568. Dr. Raney stated that any adverse effect of sediment resulting from erosion of the existing channel by the increased flow would be far less damaging to the ecological system of the stream than could be expected if an improved channel was installed. The group generally agreed that the ecological requirements of the stream channel outweigh the hydraulic, or flood factors, particularly with regard to obtaining approval of an application to construct the Limerick Plant. However, another consideration was the possible

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objections of the property owners to introduction of the increased flow without installing compensating stream improvement work. In Pennsylvania, the Commonwealth owns the stream bed and permission to discharge this flow into the East Branch must be obtained from DER. Consideration was given to contacting Vaden Butler, Chief of Dams and Encroachments, concerning the proposed usage of this stream channel; however, it was concluded that such should be delayed until after the Impact Statement is finalized. A draft copy of this Statement has already been furnished the Commonwealth and it is expected that Vaden has or will review the portion pertaining to the East Branch.

Following this was a discussion of the effects of chlorination of the water pumped from the Delaware River. John Carson's letter to DRBC concerning this matter states that "Present plans for diversion of water into the Perkiomen Creek, as part of the Point Pleasant Pumping Station project, do not include disinfection." The Environmental Impact Statement provided only that such disinfection not be harmful to the ecology of the stream. Chlorination had been initially considered in the Point Pleasant project as a means of inhibiting the growth of slime within the transmission mains. It is expected that Delaware River water will contain many varied types of micro-organisms and bacteria and some of these will probably be capable of attachment to the walls of the pipe line and continuing their growth. Also, the Health Department had indicated a need for chlorination because part of the water would go into the North Branch Reservoir where it is expected that swimming will be permitted. Dave Marano indicated that a solution might be to just chlorinate the water going into Neshaminy Creek by means of a chlorination station located near Bradshaw Reservoir. Also, numerous types of pipe were discussed as a possible means of reducing the ability of micro-organisms and bacteria to attach themselves to the walls, but it was generally concluded that the type of pipe would have little effect on the growth of these life forms. In view of the fact that chlorination creates such serious problems, it will probably be desirable to manually clean any such growths off of the walls of the pipe line as part of the project maintenance.

work. Since John Carson's letter to DRBC stated that disinfection was not included as part of the project, at this time, P. E. can state that water to Perkiomen Creek will not be chlorinated.

The next item discussed was the discharge of the Delaware River water into Perkiomen Creek and its effect on the ecology of the stream. One item was the rapid increase or decrease in depth and velocity that would result from starting and stopping the pumps and Dr. Raney was questioned as to whether or not some operational procedure should be set up to slow down the variations in depth. Dr. Raney stated that aquatic life affected by the variation in depth would not benefit by a more gradual rate of variation. When asked about any harmful effect resulting from mixtures of Delaware River and East Branch water, Dr. Raney stated that nothing developed so far had indicated any adverse effects. In fact, Delaware River water appears to be a slightly better quality of water than that of the East Branch. The proposed impact energy dissipator to be installed at the outlet of the transmission main was discussed and it was pointed out that it would increase the DO content of the water. Dr. Raney asked if the actual pumping of the water would not increase the DO and it was agreed that there would be some increase solely as a result of the pumping. The question then arose as to whether or not it would be advisable to further increase the DO content by means of spray-aeration or other such methods. Dr. Raney said "No". The discussion then turned to the probable temperature of the water as it emerges from the impact basin. A rough estimate by Lou Pyrih and Haines Dickinson indicated that when pumping at the minimum rate (18 cfs), the water would be at about ground temperature, approximately 50°. This would have the effect of increasing stream water temperatures during the winter and decreasing stream water temperatures during the summer. Dr. Raney thought that this might convert the East Branch into a trout stream but that it also could have some harmful effects, particularly if there were sudden changes of temperature (5° or more). Consideration was given to installation of a small reservoir at the outlet of the transmission main.

which could be used in the event of a power failure or pipe line break, to supply a limited quantity of water to the stream for the duration of the outage. Dr. Raney is to make a recommendation as to what minimum flow should be provided and, from this, the size of this storage basin can be determined. This storage basin could also have a temperature equalizing effect.

At this point, Lou Pyrih brought up the fact that the pipe lines must be designed for a Seismic II condition. He further stated that such requirements have not usually necessitated a greater strength pipe.

We are to furnish P. E. with a letter briefly summarizing our findings concerning the proposed East Branch channel improvement by December 22, 1972.

The necessity, or desirability, of a stream gaging station on the East Branch was discussed and it was concluded that such a station, particularly if utilized to obtain water quality data, would certainly be most helpful in future design work and in preparation of the additional environmental impact statements anticipated in connection with design of the Point Pleasant Pumping Facilities. Dave Marano indicated that they would take this up with management and attempt to secure approval of such a station, but that until such time as the availability of Delaware River water is confirmed (Tocks Island Reservoir) he did not expect an affirmative response.

Dr. Raney is to furnish us the minimum stream flow for ecological purposes after sudden shut-down of pumping; also, he is sending us some reports which include water quality and other data developed during the course of their study on the East Branch and the Schuylkill River.

P. E. will furnish us the results of the Beltz Laboratory studies of water quality of the Delaware River at Point Pleasant and of the Perkiomen Creek at Graterford, plus a draft of the Environmental Impact Statement pertinent to the East Branch and Delaware River pumping.

E. H. Bourquard
T. L. Fought

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY LICENSING BOARD

DOCKETED
USNRC

In the matter of)
)
PHILADELPHIA ELECTRIC COMPANY)
)
(Limerick Generating Station,)
Units 1 and 2)
)

Docket Nos. 50-352

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CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing Petition for Review by mailing a copy of the same to the following persons this 10th day of October, 1984.

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