

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

50-352 OL
SECRET 53 OL
DOCKETING & SERVICE
BRANCH

INTERROGATORIES OF DEL-AWARE
UNLIMITED, INC. ADDRESSED TO APPLICANT PHILADELPHIA ELECTRIC COMPANY

Pursuant to the Order of the Atomic Safety and Licensing Board dated June 1, 1982, and the Letter Order dated July 14, 1982, and pursuant to the rules of the Nuclear Regulatory Commission, Del-AWARE Unlimited Inc. propounds the following Interrogatories for answer by the Applicant, Philadelphia Electric Company ("PECo")

DEFINITIONS

As used in these Interrogatories the following words shall have the following meanings:

1. "Person" means any individual, corporation, partnership, association, council or similar organization.
2. "Technical Consultant" means a person or entity who has rendered advice or assistance to the Applicant on the basis of that person or entity's expertise.
3. "Document" includes any written, recorded or graphic material, however produced or reproduced, including, but not limited to: the original or any copy of books, records, reports,

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correspondence, memoranda, notes, written communications, telegrams and cables, notes of oral or telephonic communications, diaries, schedules, calendars, graphs, charts, contracts, agreements, releases, appraisals, valuations, estimates, projections, work papers, opinions, studies, analyses, summaries, booklets, circulars, bulletins, instructions, minutes or notes of meetings, resolutions, photographs, tabulations, questionnaires, tapes, surveys, messages, tables, drawings, sketches, financial statements, as well as any other tangible things on which information is recorded in writing or by sound or magnetically or in any other manner and including supporting, underlying or preparatory material.

4. "Identify" when used in reference to a natural person, means to state in the answer in each instance his/her full name, present or last known business address, occupation (including name of present employer) and position, if known.

5. "Identify" when used in reference to a non-natural person, means to set forth a description of the entity, identify its principal place of business, its officers, directors, limited partners, general partners, board or council members, if any.

6. "Identify" when used in reference to a writing or document, means to state in the answer in each instance, (i) the date, type of document (e.g., letter, memorandum, etc.), author, address, all recipients, title and filing or identifying number, and (ii) the present or last known location and custodian of the document and all copies.

7. "You" or "yours" means PECO, its servants, agents, representatives, and employees or anyone acting on its behalf.

8. "Environmental Report" means The Environmental Report on the Neshaminy Water Supply System, prepared by the Neshaminy Water Resources Authority, Doylestown, Pennsylvania (February 1979), and/or Environmental Report, Bradshaw Reservoir, Transmission Main, East Branch Perkiomen, and Perkiomen Creeks, prepared by Philadelphia Electric Company (July, 1979)

9. "Delaware River Basin Commission Level B Study" means a study of that name issued by the Delaware River Basin Commission.

INTERROGATORIES

1. With respect to the impact of the intake structure proposed to be located in the Delaware River near Point Pleasant on the flow and related characteristics of the river, please provide the following information:

a. Please state whether PECO plans to utilize water from the Delaware River when the flow therein is less than 3,000 ("CFS") and, if so, the legal basis or bases upon which PECO will or may do so. Please include in this answer PECO's intentions, plans or expectations regarding its ability to utilize all or part of the water allocated to the Neshaminy Water Resources Authority ("NWRA") by the Delaware River Basin Commission ("DRBC").

b. Please state the maximum anticipated rate of pumping via the intake structure for the maximum minute and hour.

c. Please state the maximum capacity of the pumps proposed to be located at Point Pleasant for the maximum minute and hour.

d. Please state the anticipated velocities in one foot, five foot, and ten foot circumferential distances, at each point (or representative points) along such circumferences surrounding the proposed intake screens. Please indicate the anticipated velocity of the water at such points, noting the location of such points, when the flow of the Delaware River at Trenton is 2,000 CFS.

e. Please state the relationship between the flow of the Delaware River at Point Pleasant and the flow at Trenton, as determined, and state the basis for such determination, at flows of 2,000 CFS, 2,500 CFS, 3,000 CFS, and 4,000 CFS, respectively, at

Trenton. Please include in this answer the anticipated velocities at the water surface, at three feet below the water surface, at six feet below the water surface, at nine feet below the water surface, and at twelve feet below the water surface (if the water will be that deep at the given flow) for each flow described in the previous sentence. Please provide in detail the basis for the determination.

f. Please state the anticipated distribution of the water sources between Tohickon Creek and the Delaware River through the intake at various flows in velocities, including velocities of 2,000, 2,500, 3,000, 3,200, 3,500, 4,000, 5,000, 6,000, 7,000, 8,000, 9,000, and 10,000 CFS in the Delaware River in combination with those of 200, 500, 750, 1,000, 1,500, 2,000, 2,500, and 3,000 CFS from the Tohickon Creek.

g. Please state whether PECO is presently committed to providing compensatory storage to maintain Delaware River flow and, if so, the location at which the storage will be maintained; the anticipated date of construction of such storage facility; whether an environmental impact statement has been prepared for such facility; whether application has been made to any agencies other than DRBC for approval of such facility, and, if so, the names of such agencies, the dates of such applications, and their present status.

h. Please state whether PECO has given any consideration to the utilization of any hydrolic and/or hydrologic computer models or other means to simulate the operation of the intake, and if so, what determination was made and the basis therefor. If such a simulation was made or attempted, or is planned to be made or attempted, please

describe the circumstances in detail, and indicate the dates of such tests, the availability of such data, the identity of the individual and organization making such tests or determinations, and their relationship to the applicant.

i. Bearing in mind that the intake will be operated by NWRA at low flow periods even if not operated for PECO's use, please state the anticipated minimum surface water elevation and clearance above the intake at the proposed location, and state what measures, if any, are planned to maintain a minimum water elevation sufficient to protect members of the public engaged in boating and tubing in the vicinity of the intake. Please describe in detail any such measures.

2. With respect to impacts of the proposed relocation of the intake facility on the American Shad,

a. Please describe in detail any studies relating to the impact of the proposed facility on and currents within the eddy and the anticipated affects of such impacts on the American Shad.

b. Please identify and describe the contents and conclusions of any studies respecting the differences in impact of the location of the intake on the stream bank (as originally proposed), its location as described in PECO's application to the Corps of Engineers, and its location as presently proposed (January, 1982) on the spawning, larvae, nursery and feeding area of the American Shad.

c. Please provide in detail all measurements, studies and reports, indicate the methodology and the basis used, and identify all documents relating to such consideration.

d. Please provide any information relating to and describe any documents which relate to or discuss findings of shortnosed sturgeon in the intake area and/or in the Delaware River at or above New Hope, Pennsylvania.

3. Please state the basis of any conclusions and describe in detail any studies leading to the conclusion that the intake as presently proposed will not be subject to frequent or occasional outage due to debris and ice conditions in the river. Also please describe any studies relating to the potential for ice damage, and describe any plans made or other measures considered in response to such potential.

4. With respect to the proposed initiation of blasting and the impacts of blasting on the Pennsylvania Canal, both directly under the canal and on the hillside, please provide the following information:

a. The extent to which PECO participated in or was otherwise involved in the studies carried out by Converse Dixon, or other related firms;

b. a detailed description of the results of such studies;

c. A description of the retaining wall referred to in the Blasting Report Guidelines, including the language omitted in paragraph 6 of the Guidelines; and

d. the names and opinions of any person who has provided PECO with information that the blasting can be successfully carried out within the guidelines and without impairing the integrity of the canal.

e. Please indicate the extent to which PECO participated in any considerations or consultations with the Corps of Engineers and/or the Advisory Council on Historic Preservation, or any other agencies or individuals, concerning the practicability of relocating the intake so as to minimize the harm to the Pennsylvania Canal as a National Historic Landmark. Please describe the content of any such communications, identify the dates of such communications, and identify the parties involved.

5. With respect to the downstream impacts of the water withdrawal at Point Pleasant versus other withdrawal locations and alternatives available to PECO, as described in the Environmental Reports, please describe any studies on or considerations given to these impacts as a result of, in conjunction with, or subsequent to the Delaware River Basin Commission Level B Study and the Salinity Study of the Corps of Engineers and/or U. S. Fish and Wildlife Service, relating to the potential impacts of seasonal salinity changes on oyster production, the proposed change in the salinity requirements for the Delaware River, and the DRBC determinations as to compensatory storage of a minimum of 750 CFS to maintain the 3,140 CFS minimum flow at Trenton. Please describe in detail and identify all discussions, considerations or deliberations between PECO and the DRBC or its staff regarding the potential impact of the changes in the maximum salinity levels proposed in the Level B Study on PECO, in the absence of compensatory storage as proposed in the Level B Study, or, conversely, the impact on salinity in the river of continuing to provide water to the applicant from Delaware River flows.

6. With respect to the anticipated effects on water quality in the Perkiomen Creek of the transfer of Delaware River water into that creek, based on the presently proposed location of the intake:

a. Please describe all studies performed on the water quality of the Delaware River which are listed on page 35 of the Environmental Report (July 1979). Please describe in detail the studies and the source of the data in the studies. Please include details as to the location of the sampling point, the identity of the researcher, the parameters tested, the number of samples taken and frequency of sampling, and whether samples included sediments samples.

b. Please identify any and all contacts or other efforts made by PECO to obtain data from the U.S. Environmental Protection Agency, the New Jersey Department of Environmental Resources, or any other source, relating to organic and inorganic industrial and agricultural chemicals in the Delaware River water or sediments, and any similar characteristics regarding the Perkiomen Creek.

c. Please state and describe the locations on the Delaware River and Perkiomen Creek, respectively, as reported in the July 1979 Environmental Report, of the temperature measuring devices (specifically as to the depths and cross-sectional location of such devices) in both the Delaware and Perkiomen; and any studies concerning the impact of the locational change as reflected in PECO's application to the Corps of Engineers, and the subsequent change of January, 1982, in such location.

d. Please describe the consideration that the impact of Delaware River water in the present intake location on water in the

Perkiomen Creek was given, particularly with respect to organic and inorganic chemicals, including pesticides, herbicides, and industrial organic chemicals. Please identify any documents resulting from referring to, or prepared in the course of such consideration.

e. Please state the anticipated water quality of the diverted water from the Delaware River and the Tohickon Creek, respectively, and state the basis for any such information. Please include in your answer references to the anticipated organic and inorganic chemical compounds and any other materials which may be toxic in the Delaware River water and the Tohickon Creek water, respectively.

f. Please describe in detail all studies carried out to establish that the diversion would not have a significant effect on the stream banks of the Perkiomen Creek, and all further studies carried out in connection with that conclusion.

7. With respect to the Bradshaw Reservoir:

a. Please identify and describe all engineering and other studies quantifying or estimating the extent of leakage from the Bradshaw Reservoir into the groundwater, and provide any and all information on which such estimates and conclusions were based.

b. Please identify and describe all studies of stability of the reservoir

8a. With respect to PECO's determination to proceed with Point Pleasant notwithstanding the determination of the Pennsylvania Public Utility Commission that continuation of construction of Limerick Unit 2 is not in the public interest, please identify and

describe all studies relating to the impacts of the deletion of Unit 2 on the cost comparisons summarized on pages 18b-21 of the Environmental Report of July, 1979, particularly those costs related to the use of reservoir alternatives on the Schuylkill River, the sufficiency of water from the Blue Marsh Reservoir, the potential availability of other planned reservoirs, the potential PECO sites, and the potential availability of ground water. In general, please identify and describe in detail all documents relating to studies and consultations carried out at any time, whether before or after the PUC decision, relating to the relative economic desirability of alternatives based on the assumption that only one unit would be built at Limerick, both in terms of forever, and in terms of differential lag times between Unit 1 and Unit 2.

8b. Please identify and describe any and all discussions between PECO and Philadelphia Suburban Water Company and/or the City of Philadelphia concerning the possibility of purchasing allotments available to them from the Schuylkill River to increase the availability of water to the plant. Please state the present status of any such discussions or, if no discussions were undertaken, the reasons why they were not undertaken.

9. With respect to the Merrill Creek Reservoir, please indicate the extent of compensatory storage which it is expected to provide, and the potential impact of the failure to obtain approval of such reservoir or some other alternate storage facility, on the operation of Limerick (assuming both Units 1 and 2 are operated).

10. Please provide any information available to PECO concerning or relating to the basis for the limitation on withdrawal of water from the Schuylkill River, and, specifically, the reason why the cut-off temperature was employed. Please also identify any studies relating to or supporting such cut-off temperature.

11. With respect to the economic savings to Bucks County and PECO arising from the construction of the joint project, as described on page 20 of the Environmental Report of July, 1979, please state and describe in detail the assumptions upon which such conclusions were based, including the terms of the potential construction contract considered, the assumed use by both PECO and Bucks County, and the assumptions regarding the cost of construction of the joint project and alternatives thereto. Please describe the extent to which any of these costs have been recomputed since 1970, based on the terms of the 1980 construction contract, the changed population and usage projections of Bucks County, changes in the anticipated cost of the proposed project and the alternatives, or any other factors. Please identify all documents and reports relating to such consideration.

12. Please identify and describe the contents and conclusions of any reports, studies or other material relating to the phasing of the construction of the Point Pleasant diversion and the timing of the work in the river. In other words, please provide a complete description of and identify all information made available to PECO relating to the need to undertake constructing in the Delaware River during the first winter of project construction (i.e., 1982-83).

13. Please identify all documents constituting, relating to, or considering the operating plan for the Point Pleasant intake, in and of itself and as related to the Bradshaw Reservoir and/or proposed releases to the Perkiomen Creek. Please identify any final or presently final documents relating to or constituting such operating plan.

14. With respect to the relationship between PECO, Ichthyological Associates, Inc., E. H. Bourquard Associates, Inc., NWRA, Harmon, as well as any organizations related to or affiliated with any of them, please state the following:

a. Whether PECO ever had an ownership interest in Ichthyological Associates, Harmon or any related entity or predecessors, or successors, and the dates of such interests, and whether Ichthyological Associates was employed as a researcher by PECO during any of such times. Please respond specifically to each section of the foregoing question.

b. The extent to which PECO had access to data and analyses, reports, or other information prepared by E.H. Bourquard, and/or other technical consultants for the NWRA. Please state whether and to what extent PECO participated in joint scoping and study meetings. Identify the personnel who attended such meetings and the dates of their attendance. Please state the extent to which the data describes above in this subparagraph (b) is or has been made available to PECO and the terms on which it is or has been made so available, and describe any relationships, financial or otherwise, pursuant to which

there has been mutual availability of data between NWRA, its consultants (including but not limited to E.H. Bourquard, Dresnack and Richman), and PECO.

15. Please state the name of each and every person who, on behalf of PECO has contacted or made contact with any legislative or executive official of the federal government in the last two years for the purpose of discussing or otherwise presenting information concerning approval of the Point Pleasant diversion (e.g. contacts relating to permits from the Corps of Engineers, DRBC approval, and any other contacts relating to the withdrawal of water from the Delaware River and facilities related thereto). Please include the dates of such contacts, the names of the persons and agencies contacted, and the substance of each such contact. Please also state the results of any such contacts, and identify any documents reporting on such results including any reports stating that an official has contacted or been contacted by another official, and the results and commitments arising from such contacts.

16. Please state the minimum height above sea level of the proposed intake at its present location during operation for the NWRA or for PECO.

17a. Please describe PECO's present plans with respect to applying for a permit under Section 316 (b) of the Clean Water Act, and other federal water quality permits relating to the intake water.

17b. Please describe any studies or reports relating to the compliance of the intake with EPA guidelines requiring application of best available technology pursuant to Section 316 of the Clean Water

Act, and identify any documents, reports or contacts relating to the necessity for compliance with the requirements of that section.

18. With respect to water quality in the Perkiomen Creek and Schuylkill River, please indicate the contacts that PECO has had with relevant agencies or other persons, or any other basis for PECO's understanding as to the eligibility of the proposed discharges of Delaware River water for NPDES permits, particularly in view of the toxic chemicals present in the Delaware River water.

19. Please describe the present status of any inquiries or other contacts between PECO and the Pennsylvania Fish Commission concerning approval for blasting operations in the Delaware River.

20. Please identify and describe the contents and conclusions of any reports, or evaluations of reports, submitted by intervenors or other opponents of PECO in any proceeding before an agency, and made available to PECO of its technical consultants (including, but not limited to, reports by GKY Associates, Ezra Golub, and Edwin Beemer) relating to hydrolics, hydrology, location of the intake and the ambient velocities, the effects of blasting, or any other impacts. Please identify any reports relating to water quality information submitted by intervenor or any other opponent of PECO to the Pennsylvania Department of Environmental Resources, the Corps of Engineers, or any other agency, and made available to PECO or any its technical consultants.

21. Please describe the extent to which the data in the NWRA Environmental Report of February, 1979, was considered in preparing the July 1979 Report and identify all documents in which such data was

considered. Please describe the coordination between the NWRA Environmental Report of February, 1979, and PECO concerning the collection, analysis, interpretation, and/or presentation of water quality data for the Delaware River. Please identify all documents constituting, reflecting, or prepared in the course of such consideration.

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CERTIFICATE OF SERVICE

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I hereby certify that I have served copies of the foregoing Interrogatories of Del-Aware Unlimited, Inc. Addressed to Applicant Philadelphia Electric Company by hand or by mailing the same to the following persons:

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