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August 25, 1982

Mr. A. Schwencer
Chief Licensing Branch No. 2
Division of Licensing
United States Nuclear Regulatory Commission
Washington, D.C. 20014

Re: Limerick Generating Station Units 1 & 2
Docket Nos. 50-352 and 50-353

Dear Mr. Schwencer:

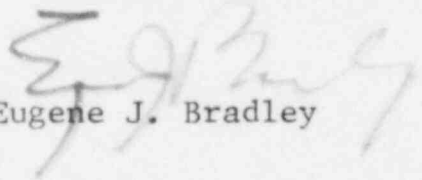
In response to your letter dated July 9, 1982, requesting additional information on the Point Pleasant Diversion Plan, there is transmitted herewith a document entitled Description of Point Pleasant Diversion Plan In Response to NRC Request Dated July 9, 1982. The document includes a general description of the Plan, a summary of any revisions made since the issuance of Construction Permits in 1974 and an assessment of any changes in impact associated with each revision. Each alternative considered, involving location and/or design, has been discussed along with the reason(s) why the alternative selected is considered to be the best. In accordance with Section 50.54(f) of the Commission's Regulations an affidavit relative to the Company's response is filed herewith.

Boo1

Mr. A. Schwencer
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As requested by your letter, we will keep you advised of any future changes to the Plan. If you require any additional information please contact us.

Very truly yours,



Eugene J. Bradley

EJB:db

cc: See attached list

cc: Judge Lawrence Brenner
Judge Richard F. Cole
Judge Peter A. Morris
Troy B. Conner, Jr., Esq.
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Mr. Frank R. Romano
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Atomic Safety and Licensing Appeal Board
Atomic Safety and Licensing Board Panel
Docket and Service Section

PHILADELPHIA ELECTRIC COMPANY
DESCRIPTION OF POINT PLEASANT DIVERSION PLAN
IN RESPONSE TO NR? REQUEST DATED JULY 9, 1982

Background and General Description

The purpose of the Point Pleasant Diversion Plan is to provide water to both Montgomery and Bucks Counties and supply water for the Limerick Generating Station. The system will also provide for the augmentation of flows in both the North Branch Neshaminy Creek and East Branch Perkiomen Creek. Basically, the components included in the Point Pleasant project given Section 3.8 approval under Docket No. D-65-76 CP(8) comprise the Neshaminy Water Supply System, while the components approved in Docket No. D-79-52 CP will supply supplemental cooling water to the Limerick Generating Station. A number of components will be utilized jointly for both purposes. It should be noted that all of the components except the North Branch Water Treatment Plant received prior environmental review and conditional Section 3.8 approval years ago. The current docket decisions thus approved the final design and operating conditions of the entire project. The project components, as identified by DRBC in its Final Environmental Assessment issued in August 1980, are as follows:

1. Point Pleasant Pumping Station and Delaware River Intake Facilities.
2. Combined Transmission Main from Point Pleasant to Bradshaw Reservoir.
3. Bradshaw Reservoir.
4. Bradshaw Reservoir to North Branch Neshaminy Transmission Main and Release Facilities.
5. Lake Galena Reservoir.
6. North Branch Water Treatment Plant, North Branch and Pine Run.
7. Western and Southern Transmission Mains for Treated Water.
8. Bradshaw Reservoir to Perkiomen Transmission Main and Release Facilities.

Thus, Philadelphia Electric and NWRA share the use of the Point Pleasant Pumping Station, Combined Transmission Main and Bradshaw Reservoir. The Point Pleasant Pumping Station will draw water from the Delaware River by means of an intake located approximately 245 feet from the river bank and consisting of 12 submerged, cylindrical, stationary wedge wire screens. The pumping station will have a withdrawal capacity of 95 million gallons per day ("mgd") and is designed

to draw water sufficient to meet the existing and future supplemental water requirements for the Neshaminy Water Supply System and to provide supplemental cooling water for the Limerick Generating Station.

The Combined Transmission Main, which will convey the water withdrawn from the Delaware River by the Pumping Station, will run from the Station underground for approximately 2.5 miles and will connect with the 70 million gallon Bradshaw Reservoir. The Bradshaw Reservoir is a relatively small reservoir designed to distribute the water to the counties and to the Limerick facility. It is not required for the safe shutdown of the Limerick reactors. The Perkiomen Transmission Main, which will be constructed and operated by Philadelphia Electric, is a 48-inch and 42-inch diameter pipeline 6.7 miles long connecting the Bradshaw Reservoir and the East Branch Perkiomen Creek.

The other components are part of the Neshaminy Water Supply System. In essence, the system would distribute treated water via transmission mains into the various subservice areas in Bucks and Montgomery Counties. The North Branch Water Treatment Plant will be located on 29 acres of land at the confluence of the North Branch Neshaminy Creek and Pine Run in Chalfont Borough, Bucks County, Pennsylvania. The plant will treat and distribute water from the natural flow of the North Branch Neshaminy Creek and Pine Run as supplemented by Delaware River water conveyed from the Point Pleasant Pumping Station, and will have a capacity of 20 mgd initially. The water delivery system from the treatment plant consists of four transmission mains radiating to the north, south, east and west, although initial construction would include only the western and southern mains.

Each of these project components has now undergone a full environmental review as required by NEPA and related environmental statutes. Following early docket decisions and initial studies, the Point Pleasant Diversion Plan was approved by DRBC in Docket No. D-65-76 CP(3) on March 17, 1971, thus adding the project to DRBC's Comprehensive Plan, but deferring Section 3.8 approval until consideration had been given to the final plans for construction and operation of the system. No appeal was taken from this decision.

Subsequently, a full environmental review as conducted by DRBC, which reviewed environmental data furnished by NWRA's technical consultant and other information provided by federal, state, and local agencies. Projected water supply needs and the environmental impacts of the proposed system and alternative systems were thus fully analyzed by DRBC in its FEIS issued in February 1973.

The FEIS concluded that the proposed project "will be beneficial to the Neshaminy and Perkiomen watersheds and not detrimental to the Delaware River," providing that specified measures to mitigate adverse environmental impacts were undertaken. The FEIS critically examined each of the five elements required for consideration under Section 102(2) (C) of NEPA, 42 U.S.C. §4332(2) (C), and appended the major

substantive documents or extracts thereof upon which it had relied in its findings, including the views of public and private commenters.

In addition to the Neshaminy Water Supply System, the FEIS also considered the components of the Point Pleasant Diversion Plan related to the supply of supplemental cooling water for the Limerick facility. DRBC concluded at that time that the withdrawal of water from the Delaware River under the proposed Point Pleasant project was the best alternative for meeting the supplemental cooling water needs for the Limerick Generating Station, and that the diversion of such water from the Delaware River would not have significant adverse effects on the environment under the specific conditions imposed. Except for the decision to reduce the diversion at Point Pleasant from 150 mgd to 95 mgd, there have been no significant changes in the Point Pleasant project since that time. Only final design and operational details have been added. No challenge to the adequacy of the 1973 FEIS was made.

The application for Section 3.8 approval of the Limerick water supply elements was conditionally approved in Docket No. D-69-210 CP, dated March 29, 1973, based upon the conditions set forth in the 1973 FEIS. Following the completion of an environmental review for Limerick by the AEC, including a full adversary hearing and judicial review of the licensing decision by the Court, DRBC took partial final action. In Docket No. D-69-210 CP(Final), issued November 5, 1975, DRBC included all Limerick water supply components in its Comprehensive Plan and gave final Section 3.8 approval to construction of the intake and diversion structures for the facility on the Schuylkill River and Perkiomen Creek, subject to specific conditions to mitigate potentially adverse environmental impacts.

In 1979, both NWRA and Philadelphia Electric applied for final Section 3.8 approval with regard to the design and construction of the various components of the Point Pleasant project which had already been conditionally approved by DRBC. Each application was supported by an Environmental Report, complementary reports by public agencies and private studies. This entire compilation of environmental data was considered by DRBC in preparing its Final Environmental Assessment issued in August 1980. Prior to its issuance in final form, the Environmental Assessment was circulated to numerous consulting agencies, which reviewed and commented upon DRBC's technical analysis and conclusions.

Based upon a full review of the record of these applications and the earlier docket decisions, including all comments received from agencies consulted and interested members of the public, DRBC issued a Negative Declaration on August 25, 1980, in which it concluded "that circumstances have not changed concerning the Authorities water supply system and the overall Point Pleasant project to such an extent as would require the preparation of another Environmental Impact Statement." The Final Environmental Assessment responded to 14 categories of environmental concerns raised by the commenters such as water quality, impact on aquatic biota, conservation, impact on growth and development,

esthetics, archeological and historical sites and consideration of project alternatives.

Following public hearings, DRBC granted Section 3.8 approval. This was appealed by intervenors to the Federal District Court for the Eastern District of Pennsylvania and thereafter to the United States Court of Appeals for the Third Circuit. Both courts sustained the action of DRBC.

Identification of Changes in Design of
Point Pleasant Diversion Plan Components

- (1) Delaware Intake Structure, Pumphouse and Combined Transmission Main - The NWRA will construct, own and operate facilities consisting of an intake and pumphouse, to withdraw water from the Delaware River at Point Pleasant, Plumstead Township, Bucks County, Pennsylvania, and a water transmission main. There, the NWRA system will deliver part of the water for its needs and part of the water will be diverted to Limerick.

The current design, capable of serving both the public and Philadelphia Electric, provides for an intake utilizing 12 state-of-the-art, submerged, cylindrical, stationary wedge wire screens to minimize environmental effects. Initially, a shore line intake with traveling screens was considered, but it was changed to utilize wedge wire screens which represent the best technology available. Initially, the total withdrawal from the Delaware was 150 mgd per day which has been reduced to 95 mgd. NWRA has reduced its requirement from 104 mgd to 49 mgd. Limerick's needs remain a maximum withdrawal of 46 mgd. A 72-inch diameter reinforced concrete pipe (changed from an initially considered 60-inch diameter) will convey water about 500 feet from the intake screens, under the Pennsylvania Canal and will terminate at the pumping station located inshore of the Canal. The pumping station will be designed to resemble a barn and will be landscaped so that it will blend with its surroundings. From the pumping station, water will be pumped inshore about 2.5 miles in an underground water transmission main to Bradshaw Reservoir. The main will be 66 inches in diameter for the first 1600 feet and 60 inches in diameter for the remainder of the distance.

- (2) Bradshaw Reservoir - The reservoir will be built, owned and operated by Philadelphia Electric. It will have about 18 acres of water surface and will store about 70 million gallons of water. Initially, the reservoir was planned for 35 mgd. The reservoir will be essentially square, built in an open area by the construction of compacted earthen dikes varying in height from 5 to 20 feet depending on the slope of the existing terrain. A pumphouse will be built into the western dike. It will contain a gated outlet feeding a gravity pipeline for NWRA use and pumps to supply Limerick's need.

(3) East Branch Perkiomen Creek Transmission Main - From Bradshaw, Limerick water will be pumped through an underground transmission main extending west almost seven miles to the East Branch of the Perkiomen Creek. The main will be 48 inches in diameter for 12,400 feet and 42 inches in diameter for the remaining 23,000 feet to the Perkiomen Creek. Originally, the entire line was 48 inches in diameter, but in analyzing the final design, we found that 23,000 feet of the line could be reduced from 48" in diameter to 42" in diameter. While the reduction in environmental impact cannot be considered significant, this change does reduce the construction impact of the pipeline to some degree. The transmission main will parallel an existing gas pipeline, utilizing a common right-of-way. The main will not cross any significant streams and has only one major highway crossing. This route was selected to minimize environmental effects. The water will discharge through an energy dissipator into the East Branch of the Perkiomen Creek about 0.4 miles upstream from the Elephant Road Bridge crossing.

Water for Limerick will then flow about 22 miles down the East Branch to the main stem of the Perkiomen Creek and to an intake at Graterford, Pennsylvania. The maximum proposed pumping of Delaware River water into the East Branch is 71 cubic feet per second ("cfs"). The effects of this additional flow were examined and considered to be beneficial to the ecology of the stream since a minimum flow will be maintained during low flow periods and rapid changes in flow depths and velocities avoided. During high flow periods, water will not be pumped into the East Branch Perkiomen Creek.

ASSESSMENT OF IMPACTS OF CHANGES

Changes in the Point Pleasant Diversion Plan described above reduce any potential adverse environmental impact.

1. Wedge Wire Screens and Relocation of Intake

- (a) Reduces the visual impact of the intake by eliminating the large structure at the edge of the stream.
- (b) Reduces the impact of fish impingement and entrainment--DRBC Docket No. D-65-76 CP(8).
- (c) Eliminates the dredging of an entrance channel and future maintenance dredging--DRBC Docket No. D-65-76 CP(8).

2. Reduction of Withdrawal Rate

The decreased need of NWRA for withdrawal of water from the Delaware makes the difference available to other users in the Basin.

3. Bradshaw Reservoir

The only change here is the lengthening of the reservoir by 350 feet. The only effects of the change would be to convert presently open agricultural land containing a small stand of trees to a reservoir and the fact that the increase in the bank dimensions would provide some further limitation in the visual quality in the vicinity of the site. Given the benefits to be derived by assuring a reliable supply of water for Limerick and to maintain flow in the East Branch of the Perkiomen Creek as required by the DRBC, we believe that the reservoir size increase is a net benefit. Maintenance of minimum flow in the East Branch of the Perkiomen Creek will generally improve the quality of the associated environment.

ALTERNATIVES CONSIDERED

In addition to plans involving a joint pumping station at Point Pleasant, alternative sources of makeup water for Limerick Generating Station were considered. However, the Point Pleasant plans proved to be most feasible. The designs considered are discussed below.

Three separate plans were considered for removing water from the Delaware River at Point Pleasant. The first was for combined PECO and NWRA pumping and transmission facilities between Point Pleasant and reservoir PA-617 (Lake Galena). PECO would then pump its share of the water from the lake to the East Branch Perkiomen Creek. Plan number two involved each user having its own transmission main from Point Pleasant, minimizing the combined use of facilities. The third plan called for combined pumping and transmission facilities at Point

Pleasant to some common point along the route (near Bradshaw Road) where the flow would be divided. The third plan, which includes the reservoir, was chosen as being the best because of the flexibility of operation provided by the 70 mg storage reservoir, which would allow the pumps at Point Pleasant to operate within a more efficient range than if required to meet a specific and/or fluctuating demand. Also plan 3 had the lowest unit water costs, and average annual costs.

Three possible locations for the reservoir were considered, the first being on the headwater of a tributary of Geddes Run, the second on the headwater of the North Branch Neshaminy Creek, and the third being on a level area near the drainage divide between these two streams. The last alternative was chosen to eliminate the possibility of a siltation problem by its location on high ground thus eliminating any drainage runoff into the reservoir. The need to build an expensive spillway on a small dam was eliminated, and the amount of land covered by the reservoir was the smallest of the three alternatives.

Three transmission main routes from Bradshaw Reservoir to the East Branch Perkiomen Creek were examined. The first was a direct route between Bradshaw and the East Branch Perkiomen Creek. The second was a right-of-way along the existing Texas Eastern Corporation right-of-way. The third was an abandoned right-of-way owned by the Tuscarora Pipeline Company. The second option proved to be most feasible because the common corridor minimized land use and reduced environmental impacts.

CURRENT DESCRIPTIONS OF THE PROPOSED POINT PLEASANT DIVERSION PLAN CAN BE FOUND IN THE FOLLOWING DOCUMENTS

I. Point Pleasant Intake, Pumping Station and Combined Transmission Main

| <u>Document</u> | <u>By</u> | <u>Date</u> |
|----------------------------------|-------------------|-------------------|
| Environmental Report | NWRA ¹ | February 1979 |
| Application to DRBC | NWRA | July 5, 1979 |
| Environmental Assessment | DRBC ² | August 1980 |
| Docket Decision No. D-65-76CP(8) | DRBC | February 18, 1981 |
| Application to COE | NWRA | July 18, 1980 |
| Public Notice (revised) | COE ³ | February 9, 1982 |

II. Bradshaw Reservoir, East Branch Transmission Main and Energy Dissipator

| <u>Document</u> | <u>By</u> | <u>Date</u> |
|-------------------------------|-------------------|-------------------|
| Environmental Report | PECO ⁴ | July 1979 |
| Application to DRBC | PECO | August 2, 1979 |
| Environmental Assessment | DRBC | August 1980 |
| Docket Decision No. D-79-52CP | DRBC | February 18, 1981 |

| <u>Document</u> | <u>By</u> | <u>Date</u> |
|--|-----------|-------------------|
| Application to DER for stream crossings | PECO | April 2, 1981 |
| Application to DER for Bradshaw Reservoir | PECO | December 16, 1981 |
| Application to DER for energy dissipator | PECO | January 6, 1982 |

- 1 Neshaminy Water Resources Authority of Bucks County
- 2 Delaware River Basin Commission
- 3 United States Army Corp of Engineers
- 4 Philadelphia Electric Company

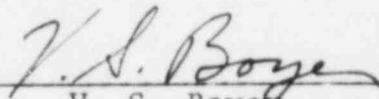
Details of comparisons of alternatives considered can be found in the documents previously noted under the description of the plan and in the documents listed below:

| <u>Alternative</u> | <u>Document</u> | <u>By</u> | <u>Date</u> |
|--|---|-----------|---------------|
| Point Pleasant intake and combined trans- mission main | Point Pleasant Pumping Facilities Feasibility Study | EHB* | March 1970 |
| Location of reservoir | Point Pleasant Design Report #2 | EHB | March 1972 |
| East Branch Perkiomen Creek Transmission Main | Point Pleasant Design Report #1 | EHB | December 1971 |

*E. H. Bourquard Assoc., Inc.
1400 Randolph Street
Harrisburg, PA 17104

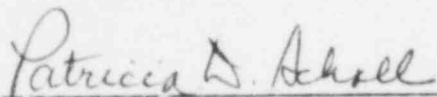
COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF PHILADELPHIA :

V. S. Boyer, being first duly sworn, desposes and states that he is Senior Vice President of Philadelphia Electric Company; he is authorized to execute this affidavit on behalf of the Company; he has read the foregoing Description of Point Pleasant Diversion Plan In Response To NRC Request dated July 9, 1982 and knows the contents thereof: and the statements and matters set forth therein are true and correct, to the best of his knowledge, information and belief.



V. S. Boyer

Subscribed and sworn to
before me this 25th day
of August, 1982.



Notary Public

PATRICIA D. SCHOLL
Notary Public, Philadelphia, Philadelphia Co.
My Commission Expires February 10, 1986