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Docket Nos.: 50-352/353

Mr. Edward G. Bauer, Jr.
Vice President & General Counsel
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Dear Mr. Bauer:

Subject: Request for Additional Information - Limerick EROL

The Environmental Engineering Branch, Accident Evaluation Branch, and Hydrologic and Geotechnical Engineering Branch have reviewed the Limerick EROL. This review has indicated a need for the additional information delineated, respectively, in Enclosures 1, 2 and 3. The items contained in these enclosures will be discussed at the August 18, 1982, technical meeting to be held in connection with our environmental site visit. Enc Enclosure 4 lists the site features which the Environmental Engineering Branch attendees with to observe during the site tour on August 17, 1982.

Please provide us, within 7 working days from receipt of this letter, with the date(s) on which you plan to respond to the above. Any questions concerning this information request should be directed to Dr. Harvey Abelson, (301) 492-9774, the Licensing Project Manager.

Sincerely,

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

Enclosures:
As stated

cc: See next page

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Limerick

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ENCLOSURE 1

Draft Requests for Additional Information
Limerick Generating Station - OL Stage
Environmental Review

General:

E 100.1 In addition to other requested information, provide a summary and brief discussion, in table form, by section, of differences between currently projected environmental effects (including those that would degrade and those that would enhance environmental conditions) and the effects discussed in the environmental report and environmental hearings associated with the construction permit review. On a similar basis, indicate changes in plant or plant component design, location or operation that have been made or planned since the construction permit review.

E 100.2 Provide a copy of the Environmental Report, with amendments, submitted to the Delaware River Basin Commission addressing the Point Pleasant Diversion, Bradshaw Reservoir and associated water transmission facility.

Terrestrial Resources:

E 290.15 Provide a discussion on the potential environmental effects and/or hazards (excluding shocks) to biological systems from low-level electromagnetic fields generated from the transmission lines.

E 290.16 Provide a figure of the site showing salt drift deposition isopleths.

Aquatic Resources:

E 291.1 (2.4.6) Section 2.4.6 indicates that Philadelphia Electric Company has no plans for upstream development of compensating water storage capacity on the Schuylkill River. However, a request for a determination of need for such capacity has been submitted to the Delaware River Basin Commission. Indicate the status of this request and describe any determinations that have been made as a result.

E 291.2 (2.4.7) The water quality data in Tables 2.4-12, 2.4-13 and 2.4-14 are for the period 1975-1978. Provide similar data for the period 1979 to the present, if available. Indicate the number of samples represented by the data in these tables. Also indicate whether the data represent grab samples or composite samples (i.e., depth and/or transect composites).

E 291.3 (2.4.7) If water quality data for the period of 1979 to the present are available, discuss the trends, if any, evident in these data that would tend to support or contradict the conclusions drawn from the earlier data as to the conditions of the water bodies in question, the water quality stresses present and their status relative to applicable water quality standards.

E 291.4 (T.3.3-1) On Table 3.3-1, the physical capability of the Delaware/Perkiomen makeup system is given as 42 MGD. The impact statement of the Delaware River Basin Commission gives this figure as 46 MGD (including expected in transit losses of about 10%). Clarify this discrepancy.

E 291.5 (T.3.3-1) Explain the meaning (e.g., name the sources responsible) of the 1 MGD miscellaneous consumptive losses given in Table 3.3-1.

E 291.6 (3.4.2) A statement in Section 3.4.2 mentions use of a cooling tower bypass line for the circulating water. Indicate whether the cooling towers are expected to be operated all year round. Describe those conditions and their expected frequency and duration under which the towers would be bypassed.

E 291.7 (3.4.3) Provide the basis for the expected 0.03% cooling tower drift rate, as opposed to the 0.20% rate guaranteed by the manufacturer.

E 291.8 (3.4.4) Indicate the expected frequency and duration of discharges from spray pond.

E 291.9 (3.6.2) Indicate what limitations, including monitoring, that are to be placed on discharges from the spray pond blowdown during and following chlorination to control algae.

E 291.10 (3.6.1) Provide a more accurate estimate of and bases for the estimate of condenser tube corrosion products in the station blowdown.

E 291.11 (3.6.4) Indicate, with bases, the maximum expected total residual chlorine (TRC) in the station discharge, the expected duration of measurable (i.e., greater than 0.1 mg/l) TRC presence in the blowdown, the monitoring point and method of measurement.

E 291.12 (3.3) Provide a discussion of the volume, timing, and duration of pumping of water through the Point Pleasant Diversion/Perkiomen Creek system to the Limerick Generating Station.

E 291.13 State, based on the results of available confirmed field monitoring programs, whether or not Corbicula sp. (Asiatic clam) is present in the vicinity of the Delaware River, Perkiomen Creek, and Schuylkill River intake structures. Provide the latest sample date of the monitoring program that was used to make the determination of presence or absence and provide a brief description of the monitoring program. If no recent

monitoring has been conducted in the vicinity of the station that could reasonably be expected to detect these organisms this should be stated. If the species is present provide any available information on its density in the vicinity of the intake structures.

E 291.14 (3.4) Section 3.4, Figure 3.4-9, indicate the purpose of the six five inch diameter conduits that are embedded in the Schuylkill River diffuser and channel stabilization structure.

E 291.15 (3.4) Section 3.4, on page 3.4-7 the text states that there will be nine inches of water covering the Perkiomen Creek intake structure. Figure 3.4-14 shows seven inches of water covering the same intake structure. Resolve this inconsistency. Indicate in the text the conditions and assumptions under which this predicted measurement was made.

E 291.16 (5.1.3) In Section 5.1.3.1.1, on page 5.1-6 it states that the area in the vicinity of Limerick Generating Station is lightly utilized for sport fishing. In section 2.1, table 2.1-43 the current and projected fishing pressure within ten miles downstream of the site is 146,000 and 255,000 hours per year, respectively. Provide a discussion as to how the conclusion was reached that the Schuylkill River is lightly utilized for sport fishing.

E 291.17 (5.1.3) In section 5.1.3, page 5.1-4 the statement is made under the heading Schuylkill River that "the river near LGS is not of unique importance for the life-sustaining activities of resident aquatic organisms,...". The statement, in reference to the Perkiomen Creek, is again made in the next paragraph. In the following paragraph discussing the East Branch of the Perkiomen Creek the statement is not made. Explain what is meant by this statement and indicate why it is not applicable to the East Branch of the Perkiomen Creek.

E 291.18 (5.1.3) In Section 5.1.3.1.1.b, the statement is made that entrainment of fish eggs and larvae is not expected to seriously alter species composition or density of important species near the station. No quantitative analysis is provided. Provide additional discussion that supports this conclusion.

E 291.19 (5.1.3) Provide in Section 5.1.3.3 an estimate of the volume of sediment that will be washed from the East Branch of the Perkiomen Creek and discuss the fate of this sediment. Also provide in this section an assessment of the impact that this sediment will have on aquatic biota inhabiting areas of sediment deposition.

E 291.20 (5.1.3)	In Section 5.1.3.3, indicate on a map those stretches of the East Branch of the Perkiomen Creek streambed that will experience erosion, increased siltation, channel modification and bank flooding.

REQUEST FOR ADDITIONAL INFORMATION FOR LIMERICK ER-OL
Section 7.1, Rev. 1, 9/81

E 450.2 Please provide your assessment of accidents formerly classified as classes 3-8.

E 450.3 Figs. 7.1-1 and 7.1-2 (the two CCDFs) have been superseded by subsequent PRA revisions; and therefore are no longer valid. Please provide updated information.

E 450. 4 Please provide information on the following specific items you consider appropriate to your PRA which is now recognized as a part of the ER-OL, and bases therefore;

a. population distribution for the plant mid-life year;

b. site-specific off-site emergency response parameters such as delay time before evacuation, evacuation speed, evacuation distance etc.;

c. site-specific land-use and economic data;

d. assumptions of the availability of supportive medical treatment to highly exposed individuals to reduce early fatality;

e. other categories of consequences and risks such as:

i. delayed cancer fatality within 50-mile
ii. person-rems
iii. thyroid effects } within the 50-mile
iv. genetic defects } and the entire regions
v. offsite and onsite property damage
vi. risks to individuals as functions of distance from the reactor, or individual risks isopleths,

f. liquid pathway considerations; and

g. comparison of risks from accidents with those from plant operation.

E 450. 5 The staff intends to use the five year (1972-1976) period of meteorological data records in the PRA. In Sections 2.3.2.1.4 of the FSAR and ER-OL monthly and annual precipitation totals at Limerick for the five year period are compared to Philadelphia and Allentown for the same five year period. The comparison shows that at least 20% more precipitation was measured at Limerick than at either of the other locations. Provide an analysis and discussion of the causes of these differences.

Hydrologic Engineering Section
Hydrologic & Geotechnical Engineering Branch
Environmental Review Questions
Limerick Generating Station Units 1 & 2
Docket Nos. 50-458/459

E240.24 (3.4) Please provide the following information regarding the Bradshaw Reservoir of the Point Pleasant Diversion Plan:

a) A drawing(s) of the reservoir showing dimensions, water level, impervious liner, drains and filters.

b) The thickness and permeability of the impervious liner on the bottom of the reservoir.

c) Calculations of seepage through the reservoir and the path of the seepage (downstream or into groundwater).

d) A drawing of the stratigraphy underneath the reservoir showing ambient water table elevation, potable aquifers, confining layers and any other data pertinent to determining the potential for groundwater contamination from the reservoir.

e) A map showing the location of ground water users near Bradshaw Reservoir that could be affected by seepage from the reservoir.

E240.25 (2.4.2.2) a) From a review of the Duration Table of Daily Flows for the Schulykill River, Perkiomen Creek, and Delaware River (Table 2.4-7) and Low Flow Frequency Curves for the same streams (Figures 2.4-4, 4a, and 4b) it appears that there could be many days during the operating life of the plant in which none of the streams meet the DRBC conditions for water withdrawal and the plant would have to be shutdown or run at a reduced power output due to lack of water availability. Provide an analysis showing the number of days per year over a simulated typical 40 year period that the plant would be shutdown due to flow and temperature conditions in the various water sources. Tabulate the results of this analysis to show the number of days per month that the plant can not operate for the median year, and for the worst year in 5 years, 10 years, 20 years, and 40 years. If the plant will continue to operate at a reduced power level when there is some water available but not enough for full power operation also include the average power output in your monthly tabulations. Clearly state any assumptions made regarding factors affecting water availability over the life of the plant that are not reflected in the historical flow data.

(b) For one unit operation, use the above analysis to demonstrate the additional power output provided by use of the Point Pleasant Diversion System over use of the Schuylkill River alone.

Limerick Generating Station Site Features
to be Observed by EEB Site Visit Attendees

Terrestrial Resources

- Areas anticipated to have maximum drift deposition from cooling towers.
- Transmission line corridors.
- Areas re-vegetated since construction began.

Aquatic Resources

- Intake structures or locations on Schuylkill River and Perkiomen Creek
- Cooling towers and blowdown hold-up basin and control structures
- General plant site features (external)
- Spray pond emergency spillway and drainage
- Station circulating and service water pump structure
- Sewage treatment plant
- East Branch Perkiomen Creek at Pt. Pleasant Diversion discharge point
- Make-up water pipeline corridor
- Vincent Dam pool on Schuylkill River
- Location of discharge diffuser
- Aquatic (i.e., biotic and abiotic) sampling locations on Schuylkill River and Perkiomen Creek