Docket File

FEBRUARY 26 1980

Docket No. 50-334

DISTRIBUTION
Docket File 50-334
NRC PDR
Local PDR
NSIC
TERA
NRR Reading
ORB1 Reading
H. Denton
D. Eisenhut
W. Gammill
A. Schwencer
D. Wigginton
C. Parrish
Attorney, OELD
ACRS (16)
B. Scharf (10)
B. Jones (4)
I&E (5)
C. Miles
R. Diggs
G. Lear

Mr. C. N. Dunn, Vice President
Operations Division
Duquesne Light Company
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Commission has issued the enclosed Amendment No. 25 to Facility Operating License No. DPR-66 for the Beaver Valley Nuclear Power Station, Unit No. 1. The amendment consists of changes to the Appendix B Technical Specifications in response to your application transmitted by letter dated June 30, 1977, supplemented by letter dated May 15, 1979.

The amendment will eliminate requirements in the Technical Specifications for all aquatic monitoring programs with the exception of fish impingement.

Copies of the Environmental Impact Appraisal and the Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 25 to DPR-66
2. Environmental Impact Appraisal
3. Notice of Issuance

cc: w/enclosures
See next page

CP
1

Concur as to form of FR notice for amdmt only GD

6963

OFFICE	DOR:ORB1	DOR:ORB1	DOR:ORB1	DOR:AD:ORP	OELD	DSE:ESB
SURNAME	DWigginton:jb	CSParrish	ASchwencer	WGammill	S Schlinski	GLear
DATE	02/25/80	02/ /80	2/25/80	2/25/80	2/26/80	/80

#10

8003280582

NRC FORM 318 (9-76) NRCM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 265 - 769

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 26, 1980

Docket No. 50-334

Mr. C. N. Dunn, Vice President
Operations Division
Duquesne Light Company
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Commission has issued the enclosed Amendment No. 25 to Facility Operating License No. DPR-66 for the Beaver Valley Nuclear Power Station, Unit No. 1. The amendment consists of changes to the Appendix B Technical Specifications in response to your application transmitted by letter dated June 30, 1977, supplemented by letter dated May 15, 1979.

The amendment will eliminate requirements in the Technical Specifications for all aquatic monitoring programs with the exception of fish impingement.

Copies of the Environmental Impact Appraisal and the Notice of Issuance are also enclosed.

Sincerely,

A. Schwencer

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 25 to DPR-66
2. Environmental Impact Appraisal
3. Notice of Issuance

cc: w/enclosures
See next page

cc: Gerald Charnoff, Esquire
Jay E. Silberg, Esquire
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N.W.
Washington, D. C. 20036

Karin Carter, Esquire
Special Assistant Attorney General
Bureau of Administrative Enforcement
5th Floor, Executive House
Harrisburg, Pennsylvania 17120

Mr. Roger Tapan
Stone and Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

Mr. J. D. Woodward
R & D Center
Westinghouse Electric Corporation
Building 7-303
Pittsburgh, Pennsylvania 15230

B. F. Jones Memorial Library
663 Franklin Avenue
Aliquippa, Pennsylvania 15001

Mr. Jack Carey
Technical Assistant
Duquesne Light Company
P. O. Box 4
Shippingport, Pennsylvania 15077

Mr. R. E. Martin
Duquesne Light Company
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Marvin Fein
Utility Counsel
City of Pittsburgh
313 City-County Building
Pittsburgh, Pennsylvania 15219

Mr. James A. Werling
Plant Superintendent
Beaver Valley Power Station
P. O. Box 4
Shippingport, Pennsylvania 15077

Department of Environmental Resources
ATTN: Director, Office of Radiological Health
Post Office Box 2063
Harrisburg, Pennsylvania 17105

Mr. Thomas J. Czerpah
Mayor of the Burrough of Shippingport
P. O. Box 26
Shippingport, Pennsylvania 15077

Ohio Edison Company
c/o Chief Nuclear QA Engineer
76 South Main Street
Akron, Ohio 44308

Pennsylvania Power Company
Ray E. Semmler, President
One E. Washington Street
New Castle, Pennsylvania 16103

Ohio Environmental Protection Agency
Division of Planning
Environmental Assessment Section
P. O. Box 1049
Columbus, Ohio 43216

Office of the Governor
State of West Virginia
Charleston, West Virginia 25305

Mr. Carl Frasure
Committee of State Officials on Suggested State Legislation
Department of Political Science
West Virginia University
Morgantown, West Virginia 26505

cc: Mr. Joseph H. Mills, Acting Commissioner
State of West Virginia Department
of Labor
1900 Washington Street
East Charleston, West Virginia 25305

N. H. Dyer, M.D.
State Director of Health
State Department of Health
State Office Building No. 1
1800 Washington Street, East
Charleston, West Virginia 25305

Director, Technical Assessment Division
Office of Radiation programs (AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Region III Office
ATTN: EIS COORDINATOR
Curtis Building - 6th Floor
Philadelphia, Pennsylvania 19106

Governor's Office of State Planning
and Development
ATTN: Coordinator, Pennsylvania
State Clearinghouse
P. O. Box 1323
Harrisburg, Pennsylvania 17120

Mr. John A. Levin
Public Utility Commission
P. O. Box 3265
Harrisburg, Pennsylvania 17120

Mr. J. D. Sieber, Superintendent
of Licensing and Compliance
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 25
License No. DPR-66

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company (the licensees) dated June 30, 1977, supplemented by letter dated May 15, 1979, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

8003280589

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-66 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 25 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 26, 1980

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Revise Appendix B as follows:

Remove Pages	Insert Pages
i	i
3-2a	3-3
3-4 thru 3-13	3-4/3-13
3-41	3-14
3-15	3-15
3-15a thru 3-16	3-15a/3-16
3-17	3-17
3-32	3-32
5-5	5-5

8003280592

TABLE OF CONTENTS

	Page No.
1.0 DEFINITIONS	1-1
2.0 LIMITING CONDITIONS FOR OPERATION	2-1
2.1 Thermal	2-1
2.1.1 Maximum Discharge Temperature	2-1
2.2 Hydraulic (Not applicable)	2-1
2.3 Chemical	2-1
2.3.1 Biocides - (Chlorine)	2-1
2.3.2 Corrosion Inhibitors - (Hexavalent Chromium)	2-2
2.3.3 pH	2-3
2.4 Radioactive Effluents	2-3
2.4.1 Specifications for Liquid Waste Effluents	2-4
2.4.2 Specifications for Liquid Waste Sampling and Monitoring	2-5
2.4.3 Specifications for Gaseous Waste Effluents	2-9
2.4.4 Specifications for Gaseous Waste Sampling and Monitoring	2-14
2.4.5 Specifications for Solid Waste Handling and Disposal	2-19
3.0 ENVIRONMENTAL SURVEILLANCE	3-1
3.1 Nonradiological Surveillance	3-1
3.1.1 Maximum Discharge Temperature	3-1
3.1.2 Chemical Releases	3-2
3.1.3 Ecological Surveillance	3-2
3.1.3.1 Study Plan	3-3
3.1.3.7 Fish Impingement	3-14
3.1.3.9 Terrestrial Ecological Survey	3-17
3.1.3.10 Soil Chemistry	3-18
3.2 Radiological Environmental Monitoring	3-19
3.2.1 Monitoring Requirements	3-34
3.2.2 Other Nuclides and Environmental Media	3-39
4.0 SPECIAL SURVEILLANCE, RESEARCH OR STUDY ACTIVITIES	4-1
5.0 ADMINISTRATIVE CONTROLS	5-1
5.1 Organization	5-1
5.2 Responsibility	5-1

3.1.3 Ecological Surveillance

3.1.3.1 Study Plan

An operational ecological surveillance program shall be established to provide fish impingement data at the Beaver Valley Power Station intake screens. This information will be used as an indicator of aquatic life in the Ohio River in the vicinity of the plant, and compared with previous data.

The Terrestrial Ecological Survey program element and soil Chemistry program element involve long term monitoring. Curtailment revision or any changes to the scope of the surveillance program shall be entered as a revision to the BVPS Unit 1 Environmental Technical Specifications. The following is a summary of each program element designed to detect environmental change.

Fish Impingement Program Element

Impingement of fish on the traveling screens shall be monitored and the data collected shall be compared with data obtained previously.

Terrestrial Ecological Survey Program Element

The Terrestrial Ecological Survey program element shall assess the potential impact of the cooling tower drift on the terrestrial vegetation of the site and its vicinity by comparison and evaluation of infrared aerial photographs taken once every two years. Location, extent, and severity of any stressed areas shall be documented and related to meteorological data.

Soil Chemistry Program Element

The soil chemistry program element shall provide data to assess possible changes in soil pH and conductivity resulting from the operation of the cooling tower.

THESE PAGES LEFT BLANK

3.1.3.7 Fish Impingement

Objective

To monitor the quantity of impinged fish on the traveling screens.

Specification

The number, length and weight of all species collected in the river water trash basket shall be identified for one 24-hour period per week. If large numbers (>500) of fish should be found, subsampling shall be performed to estimate number, length, and weight of at least 10% of the total impinged population of each species. Species selected for subsampling shall be representative of the range of lengths collected in the trash basket.

During the 24-hour period, the number and length of each species which washes through the holes in the trash basket shall be determined by: (1) placing a 1/4" mesh net around and under the trash basket or (2) placing a similar net around the discharge pipe returning screen wash water to the river or (3) placing 1/4 mesh net inside the trash basket.

Reporting Requirement

An assessment of data collected in this program element shall be reported in accordance with Section 5.6.1.

Bases

Collection of impinged fish in the river water trash basket on a weekly basis shall assure that the majority of the fish species being impinged shall be identified and an estimate of fish loss resulting from normal plant operation shall be provided. The significance of these losses shall be assessed by comparing impingement at the intake with data collected in the river.

THESE PAGES LEFT BLANK

3.1.3.9 Terrestrial Ecological Survey

Objective

To determine the effects of cooling tower drift on terrestrial biota.

Specification

Incipient impacts of cooling tower drift on the terrestrial vegetation of the site and its vicinity shall be detected with color infrared aerial photography. Interpretation of the infrared photographs shall include ground reconnaissance of selected areas.

Aerial photos shall be taken on color infrared film at a scale of 1 inch = 400 feet. Photos shall be taken between 11 AM and 2 PM EDT during the middle of the growing season and as close as possible to the same date during alternate years. The flight direction shall remain the same as preoperational flights. Photographs shall be free of cloud shadows. The film processor will insure that processing methods and conditions shall remain the same throughout the study.

A flight log shall be compiled when the photographs are taken and processed. Information to be recorded shall include: the model and serial number of camera and lens (these should be the same for each flight - exceptions must be authorized): film and lot number; filter number; altitude at the end of each flight line; time at the end of each flight line; date of flight; and flight map showing flight lines.

THIS PAGE LEFT BLANK

5.6 PLANT REPORTING REQUIREMENTS

5.6.1 Routine Reports

A. Annual Environmental Operating Report

(1) Nonradiological Volume #1

A report on the nonradiological environmental surveillance programs for the previous 12 months of operation shall be submitted to the Regional Director of the Office of Inspection and Enforcement (with copy to Director of Nuclear Reactor Regulation) as a separate Volume (#1) of the Annual Environmental Operating Report within 90 days after January 1 of each year. The period of the first report shall begin with the date of initial criticality. The report shall include summaries, interpretations, and statistical evaluation of the results of the nonradiological environmental surveillance activities (Section 3.0) and the environmental monitoring programs required by limiting conditions for operation (Section 2.0) for the report period. A comparison with preoperational studies, operational controls (as appropriate), and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment shall be provided. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

(2) Radiological Volume #2

A report on the radiological environmental surveillance programs for the previous 12 months of operation shall be submitted to the Regional Director of the Office of Inspection Enforcement (with copy to Director of Nuclear Reactor Regulation) as a separate volume (#2) of the Annual Environmental Operating Report within 120 days after January 1 of each year. The period of the first report shall begin with the date of initial criticality. The report shall include summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, operational controls (as appropriate) and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENVIRONMENTAL IMPACT APPRAISAL

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 25 TO FACILITY LICENSE NO. DPR-66

DUQUESNE LIGHT COMPANY

BEAVER VALLEY POWER STATION, UNIT 1

DOCKET NO. 50-334

Description of Proposed Action

By letter dated June 30, 1977, supplemented by letter of May 15, 1979, Duquesne Light Company (the licensee) requested an amendment to the Appendix B Non-Radiological Environmental Technical Specifications (ETS) for Beaver Valley Power Station (BVPS), Unit 1. The licensee proposes to delete all of the aquatic monitoring program, with the exception of fish impingement, from the ETS.

This appraisal reviews the results of and provides a basis for deleting Specifications 3.1.3.3, 3.1.3.4, 3.1.3.5, 3.1.3.6, and 3.1.3.8.

Environmental Impacts of Proposed Action

The aquatic monitoring program in the vicinity of BVPS was initiated in 1972. Five years of preoperational data and more than three years of operational data have been collected on several segments of aquatic biota. The objectives of this surveillance program were (1) to determine if adverse environmental impact has occurred, and (2) establish necessary short and long-range monitoring programs. The surveillance program was to continue for at least one year after commercial operation began, with termination of the program contingent upon NRC review and approval. Data collected under this program have documented

8003280

short-term seasonal variations in the Ohio River, but have failed to indicate that operation of Beaver Valley 1 is causing a significant impact on any segment of the biota as described below.

Specification 3.1.3.3 Benthos

The objective of this specification is to determine the ecological condition of the benthic community and to assess if adverse environmental impact to the benthic community occurs due to operation of BVPS. Replicate benthic samples have been taken quarterly with a Ponar dredge at three river transects (above, below and across from the plant) and in the back channel of Phillis Island. Dredge samples were washed through standard seives and wash buckets, transferred to containers, labeled and preserved with formaldehyde. Raw data was processed to yield means, values for abundances and composition by species and groups as well as species diversity indices.

Oligochaetes and chironomids were the predominant taxa during the years of study. Oligochaetes accounted for 84 to 95% of the organisms each year; chironomidae accounted for 2 to 10% each year. The remaining miscellaneous taxa accounted for 2 to 14% of the organisms each year. After 1974, when the asiatic clam Corbicula was first observed, Corbicula has accounted for an increased proportion of the miscellaneous taxa at all stations. Except for the increased abundance for Corbicula, which cannot be attributed to the operation of BVPS, the benthic community structure has not changed substantially from preoperation to operational periods.

This type of benthic community is common in the Ohio River[1/ 2/ 3/]. Available habitat appears to be the controlling factor for organism distribution. Shore areas, characterized by detritus, sand and silt, were generally more diverse than midchannel areas. Midchannel areas are characterized by hard and smooth surfaces because of continuous scouring by river currents and barge traffic. Considerable variation occurred in densities between dates due to unstable substrate and seasonal variations. Differences in average annual densities between stations influenced by the plant and upstream control transects could not be attributed to the operation of BVPS, because there was no consistent trend in densities. At times, the densities were higher at the stations influenced by the plant discharge compared to the control stations, and vice versa.

The objectives of the monitoring program for benthos, as described in the ETS, have been fulfilled. The FES predictions of no significant impact have been confirmed. The sampling program has not detected changes in diversity, density or community structure due to plant operation. The staff concludes that further study of the benthic community near BVPS is no longer necessary, and this portion of the ecological monitoring program may be deleted from the ETS.

Specification 3.1.3.4 Plankton

The objective of this specification, as stated in the ETS, is to determine the condition of both the phytoplankton and zooplankton communities of the Ohio River in the vicinity of BVPS and to assess possible environmental impact to the plankton.

Phytoplankton

Phytoplankton studies on the Ohio River near BVPS have included collection of five years of preoperational data and more than three years of operational data. Replicate phytoplankton samples were taken monthly at surface and bottom (1 foot and 15 feet below the surface, respectively) at three river transects and in the back channel of Phillis Island. Preserved samples were analyzed in Palmer cells and all organisms were identified to species, where possible, and enumerated. Preserved samples were supplemented with qualitative live samples to help in the identification of certain green algae and flagellates that do not preserve well. Hyrax mounts of cleaned diatoms were used to aid in diatom identification. Species composition, densities and diversity indices were computed and phytopigments were analyzed. These studies are normally adequate to define baseline phytoplankton dynamics as well as detect whether significant adverse impacts due to plant operation had occurred.

The phytoplankton community of the Ohio River near BVPS usually reaches peak density from late spring to mid-summer each year and lowest density in mid-winter[2/] [3/]. Phytoplankton group composition followed basically the same seasonal succession during each year studied. In all years studied, green algae were dominant during the summer and sparse in the winter. Blue-green algae reached maximum densities each year in August, but were never the dominant group. Euglenoids, dinoflagellates, cryptophytes and microflagellates had maximum densities in spring and summer. The maximum densities of diatoms occurred in August, but they were the only dominant group during the winter due to low densities of other phytoplankton groups.

Of the ten species of phytoplankton which were found to be most consistently abundant during both preoperational and operational years, only one of these was a blue-green algae. Five green algae were among the few most common and all of these exhibited low winter densities and peaked in May-June. Two chrysophytes were most common in spring and late summer, and two cryptophytes exhibiting peaks in spring and summer of most years were also common.

Differences between depths and among transects sampled were examined. Although differences occurred, there were no consistent trends among the sampling years except for a tendency for densities in the back channel to vary somewhat more than in the main channel. In general, there were no significant density trends among transects or between depths for the study period.

Phytoplankton standing crops were also measured by chlorophyll a content and the complexity of the communities was analyzed by diversity indices. Both of these measurements provided no indication of differences between preoperational and operational years. Phytoplankton species composition was consistent over the study years and no increases in blue-green algae or other taxa generally associated with higher temperatures could be discerned.

Zooplankton

Zooplankton studies on the Ohio River near BVPS have collected five years of preoperational and more than three years of operational data. Replicate zooplankton samples were taken monthly at surface and bottom (1 foot and 15 feet from the surface, respectively) at three river transects and in the back channel of Phillis Island. Zooplankton were analyzed from river whole-water samples that were filtered in the laboratory through a 64 micron mesh,

resuspended and placed in a Sedgewick-Rafter counting chamber. Species composition, densities and diversity indices were analyzed. These studies were judged adequate to define baseline conditions as well as detect whether significant adverse impacts due to plant operation had occurred.

Zooplankton of river systems is generally limited, since in flowing waters the larger species (crustaceans) generally cannot develop large populations, and all populations are constantly flushed downstream.[4/] It is felt that very few, if any, zooplankters are confined to rivers and most must originate in still or gently flowing areas and must be constantly or frequently supplied to the river.[5/] Protozoans and rotifers have relatively short reproductive and developmental periods compared to crustaceans and consequently are the most numerous taxa in river situations, due largely to their ability to rapidly replace losses from downstream flushing.

Evidence of these general trends for zooplankton were evident in the Ohio River near BVPS. Seasonal distribution of zooplankton was marked by high densities and diversity in summer and low densities and diversity in winter. Populations of Protozoa, rotifers and, to a lesser extent, microcrustaceans increased in late spring and summer, decreased in late autumn and remained low in winter. Quantitatively, microcrustaceans were a minor component of the Ohio River zooplankton near BVPS. Densities varied among transects and depths, however, no consistent trends were observed during preoperational and operational years.

Species composition changed little from preoperational years to operational years. The protozoa fauna has consistently been dominated by the same species, as were the rotifers. Copepods and cladocerans, important components of lake and pond zooplankton communities, accounted for only a small portion of the Ohio River zooplankton near BVPS (copepod nauplii were the only crustaceans consistently found, and then only in low abundances).

Community structure, as described by diversity indices, was similar in all years. Low diversities occurred in winter and high diversities occurred in late spring and during the summer. For example, the number of taxa varied from 4 in January 1977 to more than 36 in September of the same year. Richness values varied directly with the number of species.

Comparisons between the control and station influenced transects would have defined any influence that the BVPS discharge may have had on the river fauna. On all but a few sampling dates, density estimates were similar at the transects during both preoperational and operational years. On the few occasions in which densities differed, differences were a result of only one or two species. These density differences among transects occurring in preoperational as well as operational years are considered to be within the bounds of natural variation and, hence, not attributable to plant operation.

The objectives of the plankton monitoring program for both phytoplankton and zooplankton, as stated in the ETS, have been fulfilled. The predictions in the FES that operation of BVPS will not significantly impact Ohio River plankton communities has been confirmed. The staff judges that further study of the plankton community hear BVPS is no longer necessary, and this portion of the ecological monitoring program may be deleted from the ETS.

Specification 3.1.3.5 Fish

The objective of this specification, as stated in the ETS, is to detect changes which might occur to fish populations in the Ohio River near the BVPS site. Far field monitoring programs for fish were initiated in 1970. A wide range of collecting gear including gill nets, hoop nets, electrofishing, seining and trawling were employed on a seasonal basis at several stations through 1973. Based on these studies, a standardized collecting program was established in 1974. Collections were carried out on a monthly basis at three river transects and the back channel of Phillis Island during the summer with gear (electrofishing and gill nets) proven to be the best suited for this area of the Ohio River. Seining was also performed, primarily to provide additional information on smaller forms of fish inhabiting shoreline areas. Trawling was attempted at various times during the monitoring program, but snagging problems caused poor fishing results, and trawling was never employed on a regular basis. The resulting monitoring program has been conducted since 1974 and permits direct comparisons between two years of preoperational data and more than three years of operational data.

Recent studies have described the adult fish populations of the upper Ohio River. Some researchers have reported that 94% of the fish greater than 150 mm were composed of pollution-tolerant species[6/ 7/]. In 1971, carp was the most abundant species collected by the Environmental Protection Agency in the upper Ohio River[8/]. Electrofishing and gill net sampling of the Ohio River approximately 20 miles downstream of BVPS showed that gizzard shad, carp and minnows composed 69-94% of the adult fish community[9/]. Other studies

reported that the most abundant fish in the upper Ohio River were gizzard shad, carp, channel catfish, brown bullheads and several species of shiners and minnows[10/ 11/].

Results of gill netting conducted during this study indicate that carp, channel catfish, yellow perch and, to a lesser extent, walleye were the predominant larger fish near BVPS. Gill netting is selective towards larger fish. Electrofishing, a less selective method, showed that emerald shiner, sand shiner and bluntnose minnow were the predominant smaller fish near BVPS. Emerald shiner, sand shiner and bluntnose minnow were also collected frequently with seines.

Potential effects of BVPS on fish populations should theoretically be detected by comparison of catches at affected stations before and during operation of the plant. One must, however, be alert to other sources of variation which might mask the effects of plant operation such as natural variation in strength of year classes or inherent variability of sampling efficiency.

In both the control and non-control areas, electrofishing catches were largest in 1975 and declined thereafter. Two species of shiner (emerald shiner and sand shiner) were predominant in these catches. Since this trend was evident at the control transect as well as downstream of BVPS (non-control area), the tendency for shiner catches to decline after 1975 cannot be attributed to operation of BVNPS.

The gizzard shad is often considered to be an important forage species. Gizzard shad were not collected consistently in gill nets, but peak electrofishing catches of shad occurred below the plant in 1976 and above the plant in 1977. The data show no consistent trends that could be attributed to operation of BVPS.

Carp were collected consistently by electrofishing and gill netting in all years. The data do not suggest any change in population size or distribution.

Species of bullheads and catfish were generally more abundant below the plant than above the plant over the study years, both preoperational and operational. The channel catfish was the dominant species. There is no evidence from electrofishing and gill net data for a decline in these populations in the years since plant operation began.

Two species of crappie were captured in gill nets and with electrofishing gear. The increased rate of capture in 1976 and 1977 provides evidence for an increase in the populations near BVPS.

Yellow perch and walleye were captured more efficiently with gill nets than electrofishing. Both species were collected both above and below BVPS in almost every study year. No temporal changes in abundance of these species are evident from the electrofishing and gill net data.

The far field fishery studies provide no evidence to indicate that fish populations have been adversely impacted by operation of BVPS. Catches of many species fluctuated greatly, but no more than might be expected in

undisturbed populations. There is some evidence that the stock size of some sport fish may have increased since 1974, possibly as a result of improved water quality and/or stocking programs in tributary streams. Possible examples are smallmouth bass, spotted bass, white crappie, black crappie and sauger. Northern pike and the hybrid of northern pike and muskellunge were first collected in 1977 and may be additional examples of improvement in the fish community.

Results of these fish surveys indicate that the species composition and numbers of fish were similar upstream and downstream of the BVPS. Adverse impacts on fishery parameters due to plant operation were not detectable. In addition, the more recent data suggest that the fish community is improving. The objective of the far field fish monitoring, as stated in the ETS have been fulfilled. The predictions in the FES that operation of BVPS will not significantly affect fish populations in the Ohio River has been confirmed. The staff judges that further monitoring of the fish community near BVPS is no longer necessary, and this portion of the ecological monitoring program may be deleted from the ETS.

Specification 3.1.3.6 Ichthyoplankton

The objective of this specification, as stated in the ETS, is to determine the extent to which the Ohio River near BVPS is used by fish as a spawning or nursery area and to assess if changes have occurred based on a comparison of operational and preoperational data. A specific objective is to evaluate ichthyoplankton data gathered in the back channel of Phillis Island because of this area's potential as a spawning ground and its proximity to the BVPS discharge structure.

Other studies of ichthyoplankton on the upper Ohio River indicate that cyprinids and gizzard shad are the most abundant fish larvae present[12/ 13/]. These larvae are most numerous from mid-June through mid-July. Shiner and minnow populations of the upper Ohio River were found to depend heavily on creeks and tributaries for spawning areas whereas the gizzard shad was reported to spawn in the main river.

Sampling to determine the presence and abundance of fish eggs and larvae in the Ohio River near BVPS was conducted for two preoperational years and more than three operational years. Sampling consisted of day time upstream tows with 0.5 m ichthyoplankton net. Surface and bottom tows were made at three points along three transects across the Ohio River. Additional surface and bottom tows were taken along a zig-zag transect in the back channel of Phillis Island to investigate the productivity of this shallow area below the BVPS discharge. Approximately six surveys were made from April through July during each of the years surveyed.

This sampling program was judged adequate to determine the spatial and temporal distribution of ichthyoplankton and to detect whether significant adverse impacts on fish spawning had occurred due to plant operation.

Fish eggs were not common in collections because of the spawning habits of the fishes in the Ohio River. Most freshwater fish have demersal eggs which do not form a large component of the drift. By far, the largest component of the ichthyoplankton was comprised of fish larvae and juvenile fish. Larvae and juveniles of 14 taxa representing 7 families were identified. Cyprinid

(minnows and shiners) larvae were consistently predominent in preoperational and operational years while gizzard shad larvae were second in abundance each year. Ichthyoplankton densities peaked during June and July of the years studied. These findings are in accord with other studies of the upper Ohio River[12/ 13/]. The remaining taxa were found in low densities and occurred sporadically. Generally, the same predominant taxa were present at each transect at similar densities during each survey, both before and after station operation.

Within a transect, ichthyoplankton densities were higher near the shore than at mid-channel. Densities were generally lower in the back channel of Phillis Island than at other transects, indicating that this area is not important as either a spawning or nursery ground. Seasonal densities of ichthyoplankton were similar under preoperational and operational conditions. No appreciable change in ichthyoplankton composition was observed among the years studied. The effect of station operation on the ichthyoplankton populations of the Ohio River was not detectable, and is considered to be insignificant.

The objectives of the ichthyoplankton portion of the ecological monitoring program, as stated in the ETS have been fulfilled. The predictions in the FES that operation of BVPS will not significantly affect spawning and reproduction of fish populations in the Ohio River have been confirmed. The staff judges that further monitoring of ichthyoplankton near BVPS is no longer necessary, and this portion of the ecological monitoring program may be deleted from the ETS.

Specification 3.1.3.8 Plankton Entrainment

A. Ichthyoplankton

The objective of this specification, as stated in the ETS, is to determine the number and kinds of ichthyoplankton (fish eggs and larvae) entrained in the intake water and quantitatively compare these data with ichthyoplankton data from the river.

A series of day and night ichthyoplankton samples was taken biweekly at each operating intake forebay with a plankton net and along a transect in the river in front of the intake structure by tows, beginning in April and ending in July each year. This time period encompasses the spawning season of the majority of the fish species in the Ohio River. This sampling schedule was designed to provide concurrent river ichthyoplankton drift and BVPS entrainment data to permit quantitative assessment of the impact of ichthyoplankton entrainment on the fish community of the Ohio River near BVPS.

The results of these studies generally reflect the seasonal composition and abundance of fish larvae in the Ohio River. Densities of fish larvae in the river were generally lower than those collected at the intake. This condition had been identified previously in the ichthyoplankton sampling, where densities were higher near the shore than at mid-channel. Higher densities of fish larvae at the intake may also be attributed to nighttime attraction to the lights of the intake or to the use of the area behind the skimmer wall as a refuge. Ichthyoplankton densities were higher on the north shore of the

Ohio River across from BVPS than they were at the intake. Larvae were absent or at low densities during April or early May each year. Peak densities were observed during June or early July each year. As predicted in the FES, only a few eggs (<1%) were collected in intake entrainment samples throughout the spawning season. Cyprinids were the predominant larval fish collected at the intake and in the river for all years of operation, although the percentage of percids at the intake did increase appreciably in 1978. Results of diel (day-night) studies showed that 80-90% of the larval fish entrained at the intake were entrained at night. A lesser percentage were collected in the river at night again possibly due to attraction to the lights at the intake or use of the area behind the skimmer as a refuge.

The principal effect of the operation of the BVPS on ichthyoplankton of the Ohio River is the destruction of drift organisms passing through the condenser cooling system. Because the cooling system is operated closed-cycle, 100% mortality of entrained organisms is assumed. The FES predicted that a maximum of approximately 1.2% of the drift organisms in the river passing by BVPS would be entrained because the organisms were assumed to be uniformly distributed. In the case of ichthyoplankton, because the higher density of fish larvae at the intake, entrainment is calculated to be somewhat higher, depending on the flow in the river. Estimates of the percentage of the ichthyoplankton standing crop in the river drifting by BVPS that was entrained were determined for each sampling date. During 1977 these estimates, based on daily river flow, ranged from 0 to 7.7% of the river drift. During 1978, the estimates of river ichthyoplankton entrained, based on daily river flow,

ranged from 0.07 to 3.52%. These losses, although somewhat higher than predicted in the FES, are not considered to be significant for the following reasons: (1) the plant intake is located on one shore of the river - the other shore (where ichthyoplankton densities are even higher) is unaffected by BVPS; (2) the area of the Ohio River near BVPS has not been identified as a prime spawning location or nursery area for any species of fish - areas at least as good exist both above and below the plant; (3) much spawning, particularly of those species associated with recreational uses, takes place in tributaries and at their mouths in areas out of the influence of BVPS; (4) the species affected (primarily cyprinids) have a high fecundity and entrained eggs and larvae are readily replaced; (5) ichthyoplankton is the life stage least likely to be affected by impacts of this magnitude because of their high natural mortality; and (6) the far-field monitoring program has failed to indicate that any phase of BVPS operation (let alone a single impact due to entrainment) is causing a detectable impact in the population of adult fishes. Thus, the staff concludes that the ichthyoplankton portion of the entrainment monitoring may be deleted from the ETS.

B. Plankton

The objective of this specification is to determine the composition and quantities of phytoplankton and zooplankton entrained in the intake water.

Entrainment samples for phytoplankton and zooplankton were taken six times (every 4 hours) during one 24-hour period each month and were collected within the same time frame (± 2 days) as river samples (see specification 3.1.3.4 Plankton). Generally, they were taken on the same day. Composite (surface and bottom) samples were taken from each intake forebay with a Kemmerer sampler and analyzed following the procedures used to analyze river samples.

Total phytoplankton densities of river and entrainment samples were generally similar as a whole. The seasonal patterns of phytoplankton abundance, species composition and percent occurrence of major groups were also similar in intake and river samples.

Few differences existed between the composition and abundance of zooplankton entrained in the intake water system and that suspended in the river and passing by the plant. In the months when density differences between intake and river were evident, species composition of the two sets of samples were usually comparable.

Diel variations in plankton were also assessed; diel variations of phytoplankton densities were small. The lack of variation is expected since few phytoplankters are capable of more than the slowest movement and diurnal migrations are unlikely. Occasional high densities of entrained phytoplankton seemed to be associated with samples containing higher than normal suspended solids, possibly from bottom sediments. Dying phytoplankters that settle out of the water column are commonly found in high densities at the mud-water interface, and these algae, along with periphyton, are easily dislodged and suspended in the water column. Diel fluctuations in zooplankton were also small and variations among 24-hour samples were no greater than the variations among different river stations on a given date.

The composition and abundance of plankton entrained at the intake in all years were similar to those of the plankton suspended in the river and passing by the plant. Thus, there is no indication that the FES predictions, based on uniform distribution of phytoplankton, are not correct. Under worst-case

conditions of minimum low river flow of 5,000 cfs BVPS would entrain 1.2% of the flow and, hence, 1.2% of the plankton in the river passing by the plant. Since the plant operates closed-cycle, 100% mortalities of these organisms is likely. Entrainment losses of this magnitude are considered acceptable in view of the small area of the river affected and the potential for rapid reproduction among these organisms. The staff concludes that deletion of the plankton portion of the entrainment sampling from the ETS is acceptable.

Conclusion and Basis for Negative Declaration

On the basis of the foregoing analysis, the staff concludes that there will be no environmental impact attributable to the proposed action. The changes assessed herein are to the environmental monitoring programs and do not involve any changes in plant design or operation or involve an increase in effluent types or quantities. The impact of the overall plant operation has already been predicted and described in the Commission's FES for the Beaver Valley Power Station. On this basis and in accordance with 10 CFR 51.5, the Commission concludes that no environmental impact statement for the proposed action need be prepared and a negative declaration to this effect is appropriate.

Safety Conclusions

We have concluded, based on the considerations discussed above, that:

(1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the

amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: February 26, 1980

REFERENCES

1. Mason, W. T., Jr., P. A. Lewis, and J. B. Anderson. 1971. Macroinvertebrate collections and water quality monitoring in the Ohio River basin 1963-1967. Unpub. Cooperative Rept. Office of Tech. Programs, Ohio Basin Region and Analytical Quality Control Lab. Water Quality Office. EPA, Cincinnati.

2. Butz, B. P., D. R. Schregardus, B. Lewis, A. J. Policastro, and J. J. Reisa, Jr. 1974. Ohio River Cooling Water Study. Argonne National Laboratory. Report Number: EPA-905/9-74-004. Sept. 1974. 385 pp.

3. ORSANCO. 1962. Aquatic-Life Resources of the Ohio River. Ohio River Valley Water Sanitary Commission. 1962. 218 pp.

4. Kofoid, C. A. 1908. Plankton Studies V. The Plankton of the Illinois River. 1894-1899. Part II, constituent organisms and their seasonal distribution. Bull. Ill. State Lab. Nat. Hist. Art. 1 8:2-360.

5. Hynes, H. B. N. 1970. The Ecology of Running Waters. Univ. Toronto Press, Toronto, Ont. 555 pp.

6. Krumholz, L. A. and W. L. Minckley. 1964. Changes in the fish populations in the Upper Ohio River following temporary pollution abatement. Trans. Am. Fish. Soc. Vol. 93, No. 1, pp 1-5.

7. Preston, H. R. 1975. Fishery composition studies - Ohio River Basin. USEPA. Wheeling, West Virginia.

8. Environmental Protection Agency. 1971. Macroinvertebrate collections and water quality monitoring in the Ohio River Basin 1963-1967.

9. WAPORA, Inc. 1974. Ecological Studies of the Ohio River 1973. Project No. I-27. 147 pp.

10. WAPORA, Inc. 1972. The effect of temperature on aquatic life in the Ohio River - Final Report July 1970 - September 1971. Report for Ohio Electric Utility Institute Louisville Gas and Electric Co., Inc. 151 pp.

11. Preston, H. R. and G. E. White, 1978. Summary of Ohio River Fishery Surveys 1968-76. EPA 90319-78-009. Philadelphia, Pa.

12. WAPORA, Inc. 1977. Continuing Ecological Research on the Ohio River - 1976 Population and Spawning Studies - Final. Project No. 135. 271 pp.

13. WAPORA, Inc. 1978. 1977 Ohio River Ecological Research Program - Temporal and Spatial Distribution Patterns of Adult and Larval Fish - Final. Report No. 135. 152 pp.

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-334

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE AND NEGATIVE DECLARATION

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 25 to Facility Operating License No. DPR-66 issued to Duquesne Light Company, Ohio Edison Company and Pennsylvania Power Company (the licensees), which revised Appendix B Technical Specifications for operation of the Beaver Valley Power Station, Unit No. 1 (the facility) located in Beaver County, Pennsylvania. The amendment is effective as of the date of issuance.

The amendment eliminates requirements in the Technical Specifications, Appendix B, for all aquatic monitoring programs with the exception of fish impingement.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since this amendment does not involve a significant hazards consideration.

8003280599

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental impact statement for this particular action is not warranted because there will be no environmental impact attributable to the action other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facility dated July 1973.

For further details with respect to this action, see (1) the application for amendment dated June 30, 1977 as supplemented May 15, 1979, (2) Amendment No. 25 to License No. DPR-66 and (3) the Commission's related Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 26th day of February, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors