

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Charles B. Curtis, Chairman;
Georgiana Sheldon, and George R. Hall.

Pennsylvania Power & Light)
Company)

Project No. 1881

ORDER ISSUING NEW MAJOR LICENSE

(Issued August 14, 1980)

Pennsylvania Power & Light Company (Applicant) filed an application for new major license to authorize the continued operation and maintenance of the Holtwood Project, FERC No. 1881. The Holtwood Project is located on the Susquehanna River, a navigable waterway of the United States, in Lancaster and York Counties, Pennsylvania.

Public notice of the application was given. The Borough of Chambersburg, Pennsylvania petitioned for and was granted intervention in the proceeding. Letters of protest were filed by the Honorable Franklin L. Kury, Pennsylvania House of Representatives; the Pennsylvania Federation of Sportsman's Clubs, Inc.; and the Committee for Safeguard of Citizens Rights in Lancaster County. Comments on the application were received from a number of state, regional and federal agencies, including the Susquehanna River Basin Commission (SRBC). 1/

History of the Project

Construction of the Holtwood Project began in 1905. Construction was completed by the Pennsylvania Water and Power Company who placed the project's ten generating units in operation in phases from 1910 to 1924. By order of July 3, 1951, Pennsylvania Water and Power Company was issued a license effective as of January 1, 1938 and terminating April 21, 1970. The date of license termination was subsequently modified to June 30, 1970. 2/ On May 5, 1955, the Commission approved the transfer of license to the current licensee, Pennsylvania Power & Light Company.

1/ The Susquehanna River Basin Commission was established pursuant to the Susquehanna River Basin Compact (Pub. L. 91-575, 84 Stat. 1509 et seq.) with duties and responsibilities for comprehensive planning, programming and management of the water and related resources of the Susquehanna River Basin. The Commission and SRBC executed a memorandum of understanding on November 5, 1975 providing cooperative procedures for processing license applications under Part I of the Federal Power Act and committing themselves to give due regard to the recommendations of each other.

2/ Pennsylvania Water and Power Company, Project No. 1881, 10 FPC 1368 (1951).

Project Description

The Holtwood Project consists of a concrete overflow dam about 2,400 feet long and 55 feet high, a reservoir 8 miles long with a surface area of 2,400 acres (Lake Aldred), a powerhouse having an installed capacity of 107,200 kW, two 66 kV transmission lines 3,000 feet long and appurtenant facilities. The non-project Holtwood Steam-Electric Plant with a generating capacity of 75.0 MW is located adjacent to the powerhouse but outside of the project boundary. The steam plant utilizes the waters of Lake Aldred for cooling purposes.

The project is operated principally on a run-of-river basis in all ranges of stream flow in coordination with adjacent hydroelectric plants both upstream and downstream. The operation is such that substantially the full amount of water coming into the Holtwood pond (Lake Aldred) in any one day is also discharged through the hydroelectric plant or over the dam during the same day. Flows up to 32,000 cfs are fully utilized through the plant. Flows in excess thereof pass over the uncontrolled spillway. Flashboards 3', 4' and 4.75' in height are installed on the dam throughout the year depending on the season and the river flow expected. The 4.75' boards are designed to yield at approximately 77,000 cfs and are installed the major portion of the year creating a maximum forebay level without spill of elevation 169.75'. The project is operated for peaking power on a daily cycle on weekdays by utilizing the 19,000 acre feet of useable storage available, resulting in drawdowns of Lake Aldred in order to permit utilization of discharge from the upstream Safe Harbor Project, FERC Project No. 1025, during the hours of greatest customer demand. During weekends with very low flows, the project is normally shut down except when water is released at Safe Harbor to assist in maintaining forebay elevations at the Conowingo Project, FERC Project No. 405, downstream in connection with the pumping operations at Muddy Run Pumped Storage Project, FERC Project No. 2355, which utilizes the Conowingo pond as its lower reservoir.

Although the design of the project does not lend itself to provision for flood control in the usual sense, the coordinated operation of the reservoir with the upstream Safe Harbor reservoir provides some measure of control for local flash type floods in the range up to about 100,000 cfs.

Continued operation of this project would provide 107,200 kW of installed capacity capable of an average annual generation of 581,500 MWH, and would utilize a renewable resource that would save the equivalent of approximately 955,000 barrels of oil per year.

Safety and Adequacy

The Commission's staff has analyzed the existing concrete structures of the Holtwood Project for stability including consideration of overturning, sliding, seismic activity and ice forces. Those analyses show that the portions of the dam founded on the higher elevation bedrock toward the right abutment would develop tension at the heel for flows in the order of 850,000 cfs (a one in 125 years flood) and, as the reservoir level increased with higher flows, additional sections of the dam would develop tension. Normally, tension in a concrete gravity dam is considered to indicate the possibility of instability; however, the Holtwood dam withstood a flood of 1,100,000 cfs in 1972 which put the concrete in tension. Also, tests of core borings of the dam's concrete taken in 1975-76 show the concrete to be sound with a tensile strength of about 80 psi. Therefore, based on the staff's analyses, the tested strength of the concrete, and the fact that the dam has withstood a flood discharge of 1,100,000 cfs, it is concluded that the dam is stable.

In its November 1977 Part 12 Inspection Report, the licensee's consultant found that the dam would become unstable against overturning under probable maximum flood (PMF) conditions. However, the consultant concluded that failure of the dam during a PMF or other periods of very high flow would not significantly affect flooding conditions downstream of the dam. This conclusion was substantiated by a different consultant who computed the river stage increase downstream of Holtwood dam that would be caused by the instantaneous failure of a 250-foot-long section of the dam during a 1,170,000 cfs flood discharge.

The most recent annual operation inspection of the project by the Commission's staff was conducted in October 1979, and all project structures were found to be in safe and stable condition. We conclude that the project works are safe and adequate.

Recreation

Recreational development on Lake Aldred, formed by the Holtwood dam, is limited in many places by the steep hillsides rising abruptly from the water and also by the presence of a railroad, which parallels much of the eastern shore of the lake. Development is limited primarily to selected narrow flood plains and upland areas. Available recreational facilities within the project boundary include: two camping areas, 15 picnic areas with boat-in picnic facilities, fishing access facilities, six boat ramps, five hiking and riding trails, two marinas, and three overlook areas. Applicant proposes further development to add: 300 tent and trailer sites, 6 picnic areas, one boat ramp and 6 trails. Present annual recreational use is estimated to be about 100,000 visitor days and is projected to increase to 300,000.

SRBC, in its comments on the Exhibit R, stated that the Applicant has taken advantage of most of the possible access points and has made an outstanding effort to develop varied recreation possibilities on project lands.

Interior stated that Applicant's Exhibit R is not adequate to accommodate present and expected sport fishing demand. Interior suggests that more of this demand could be satisfied by the immediate development of three areas located at the mouth of Kellys Run about one-half mile upstream of the dam on the west shore. In addition, Interior recommends that these areas be developed to include adequate boat launching, parking, and sanitary facilities.

The recommendation for development of boat launching facilities at Kellys Run was reviewed by the Applicant and found impractical from a safety viewpoint. The Penn Central Railroad runs between the township road and the riverfront, and lands suitable for parking are owned by Penn Central. The area, however, is used as an informal access by fishermen who park on railroad property and cross the tracks to fish along the river bank. The Applicant is willing to provide improved parking areas with toilet facilities, a pedestrian crossing at the railroad and walkways in conjunction with the above access, if fishing use increases. Development would be contingent on the approval of Penn Central Railroad Company. The Applicant denotes in its Exhibit R the inclusion of the Kellys Run area for ultimate development and use.

Our review of the proposal by the Applicant to provide fishing and boating facilities at McCalls Ferry (opposite shore from Kellys Run) in the near future, together with existing and other planned accesses, indicates that the plan is adequate to accommodate present and expected boating and fishing demands at the project.

Interior recommended that the recreational development plan be subject to biennial review in consultation with interested agencies and that provision be made for swimming facilities at the reservoir when water quality improves sufficiently. The Committee for Safeguard of Citizens Rights in Lancaster County (CSCR) in its letter of protest stressed a right of county residents to free access to project waters and the need for design of project works to provide for public recreation. These concerns of Interior and CSCR are adequately addressed by standard license Articles 17 and 18, (Form L-3, October 1975). Articles 17 and 18 provide for public access to project lands and waters and for future recreational development, including swimming facilities, to accommodate changing recreation needs at the project. Additionally, the Applicant is required to file biennially FERC Form No. 80 which reflects the extent of recreational use and development at the project. Future recreational development may be required on motion of the Commission itself or upon the recommendation of interested federal and state agencies.

Interior recommended the operation and maintenance of warning markers during the fishing as well as the recreation season. Interior also recommended that a power generation warning system be developed to warn fisherman using the area downstream of the dam. In March 1972, approximately one year after Interior's recommendation, Applicant installed fishing buoys and warning signs at the project at the request of the Commission's New York regional office. Staff inspections of the project since that time indicate that these warning devices have proved to be adequate and that the rate of rise in the tailwater elevation subsequent to the start of power generation is relatively gradual. Consequently, the installation of a power generation warning system is not warranted at this time. Article 33 will provide for the future installation of appropriate warning systems should the Commission's authorized representative so direct.

Fish and Wildlife Resources

Project waters sustain natural populations of warmwater fishes and provide a good sport fishery resource. Anadromous fish such as American shad, alewife, and striped bass once inhabited parts of the Susquehanna River, but due to dam construction, upstream migration was eliminated.

Letters of project filed by the Honorable Franklin L. Kury of the Pennsylvania House of Representatives and the Pennsylvania Federation of Sportsman's Clubs, Inc. requested the conditioning of any license issued to require fishways. SRBC has recommended the installation and operation of fish passage facilities at the Holtwood Project subject to the installation of fish passage facilities at Conowingo Dam and evidence that anadromous species of fish have utilized the facility and migrated upstream above the Conowingo Dam. The Applicant contends that all the evidence to date fails to provide any justification for the installation of fish passage facilities at the dams on the Susquehanna. By separate order, we are providing for a hearing on the issue of the installation of fish passage facilities at the Holtwood Project No. 1881 and three other licensed projects on the Susquehanna River (Project Nos. 405, 1025, and 1888). Article 15 of the license expressly reserves to the Commission the authority to order the construction, maintenance and operation of facilities and modifications of project structures and operation in the interest of fish and wildlife resources. 3/

The lands abutting the project reservoir provide good wildlife habitat. Wildlife lands are being protected through the joint wildlife and timber management programs of the Applicant and appropriate state agencies. The Pennsylvania Game Commission proposed that Applicant meet semi-annually with them to review wildlife management plans on project lands. Article 30 directs the Licensee to consult and cooperate with state and federal fish, wildlife and environmental agencies during the period of the license.

Applicant's Exhibit S generally complies with Commission regulations and will be approved.

3/ See, "Order Issuing New Major License," issued this same day in Susquehanna Power Company & Philadelphia Electric Power Company, Project No. 405, mimeo at p. 5, n.3 and accompanying text.

Streamflow and Water Quality

Interior and EPA stated that they believe that the project would have no adverse impact on water quality provided that adequate streamflows below the dam are maintained. Interior recommended that the present minimum flows be increased to meet water quality needs and prevent stranding of fish, but suggested no specific flow rates. EPA, however, recommended that flows below the dam be maintained at a level equal to or greater than the 7-day 10-year low flow of 2,500 cfs. EPA recommended additionally that in the event of extreme low flow conditions, outflow from the dam should equal inflow to the reservoir. Both agencies recommended that stream flow releases be varied gradually to avoid adverse effects on aquatic life.

SRBC emphasized the lack of water quality data for the pool and tailrace area. SRBC stated that it appears likely that applicable water quality standards are not met at all times in the pool and possibly in the project tailrace. SRBC recommended that any license for the Holtwood Project require development and implementation of a program to monitor water quality at appropriate locations in the Holtwood pool, in the project tailrace, and at some suitable location in the area downstream of the spillway, on a continuous basis throughout the period May 1st through October 31st of each year and on a weekly basis for the remainder of the year. SRBC also stated that specific water quality parameters to be measured should include dissolved oxygen and temperature values. SRBC noted the problems that have occurred regarding the stranding of fish below the project and pointed to the requirements of its comprehensive plan directing that water releases at dams on the Susquehanna River be consistent with instream flow needs of indigenous and migrating fishes and the protection of the stream's natural biological community. SRBC set forth a schedule of initial flow releases to be required of the licensee ranging from 3,500 cfs to 15,000 cfs but did not provide any rationale for the specific flows recommended. SRBC indicated that any license issued should include these interim flow releases or releases "determined adequate on a temporary basis by the U.S. Fish and Wildlife Service and Pennsylvania Fish Commission, to support at all times a full range of life processes of indigenous and, as necessary, anadromous fisheries..." SRBC would further require that the licensee develop a study plan in consultation with appropriate agencies to validate or modify the interim flow schedule imposed to assure it would: (1) provide for the optimum use of flow for power generation, cooling, public water supply, and general recreation; (2) effectively attract and lead, during the migration period, anadromous fish from Conowingo pool upstream to the Holtwood dam; and (3) support a full range of life processes for indigenous and anadromous fishes between the upper limits of the Conowingo Project pool and the Holtwood Project dam at all times of the year.

In response to SRBC's recommendation, Applicant stated that "[t]he SRBC has provided no support whatsoever for the minimum flow it wants this Commission to impose on the Licensee pending the outcome of the study it wants the Licensee to conduct to validate those flows." Applicant stated that at the present time the flow of the river is not shut off for any period of time by the Holtwood dam. One turbine driven exciter unit is operated continuously and that combined with leakage from the flashboards and the constant flow from a 10 inch pipe through the dam, provides a minimum flow of 300 to 500 cfs, which has over the years proved adequate to maintain satisfactory aquatic life. Applicant stated that the proposed minimum flows would have a substantial adverse economic impact on the project and SRBC has not indicated what the benefits of imposing such minimum flows would be. Applicant submits that the imposition of the flow release study requirement at this time would be premature in that its principal purpose would be to determine what, if any, releases are necessary to attract anadromous fish to any fish passage facility.

In light of our determination to set the question of fish passage facilities for consolidated hearing, we can see no justification at this time for imposing flows or, as a separate matter apart from the consolidate hearing, requiring the licensee to study flows to attract and protect anadromous fish. Such a requirement will properly be a matter for consideration in the fish passage facility hearings. 4/ On the issue of minimum flows to enhance indigenous fishery resources and water quality, we do, however, feel that certain measures are required. Appropriate rates of release can only be established through studies carried out by the licensee in consultation with state and federal agencies. Accordingly, we are including license Article 39 which requires the licensee to develop, in consultation with the Pennsylvania Fish Commission, the U.S. Fish and Wildlife Service and the Susquehanna River Basin Commission, a mutually satisfactory study plan to determine dissolved oxygen and temperature levels, the effect of project operation on dissolved oxygen levels, the extent of oxygen-demanding materials in the project reservoir, the most feasible methods for ensuring the releases meet state water quality standards, the minimum flow releases necessary to protect and enhance fish and wildlife resources, and the effects of operations of other projects on the upper reaches and tributaries of the river. The study plan is to be coordinated with coincident study plans of dissolved oxygen and temperature conditions and flow releases being developed for three other licensed projects on the Susquehanna River, Project Nos. 405, 1025 and 1888. The study plan is to be filed for approval within four months of the issuance of this license. 5/ As an

4/ We are not, however, precluding the possibility that data obtained under the required flow release/water quality study may be relevant to anadromous fishery issues in the consolidated proceeding.

5/ See, "Order Issuing New Major License," issued this same day in Susquehanna Power Company & Philadelphia Electric Power Company, Project No. 405, mimeo at p. 9, n.6 and accompanying text.

interim measure, Article 29 directs the licensee to maintain the present situation by discharging through the turbine driven exciter unit a minimum flow of 50 cfs downstream of the Holtwood powerhouse and the unrestricted flow of the 10-inch pipe through the dam for the purposes of protecting downstream aquatic habitat and fish spawning areas.

The Pennsylvania Department of Environmental Resources suggested that periodic dredging required for Pequea Creek, which empties into the project reservoir, should be done with minimal disturbance to keep siltation and turbidity to a minimum. Articles 19 and 21 provide for the control of dredging, stream sedimentation and soil erosion at the project.

Debris Management

Floating debris passing down the Susquehanna River is an issue of concern that was discussed by SRBC in its comments on the application. At the Holtwood Project most of the floating debris passing down river is carried over the uncontrolled project spillway. Some debris becomes lodged on turbine trash racks and the remainder is flushed downstream through a trash gate at the end of the project powerhouse. The problem of floating debris released at the Conowingo Project dam downstream of the Holtwood Project has been a subject of serious concern to private and public interests in Maryland. It is SRBC's position that "[w]hile it would seem unreasonable and impractical to require collection of all floating debris at all dams along the river, debris removal should be required at dams having controlled spill and/or where large amounts of floating debris accumulate within easy reach of appropriate snagging equipment." SRBC recommends an overall cooperative debris removal and management program among the licensees of the licensed projects on the Susquehanna (Project Nos. 405, 1025, 1881 & 1888).

The Applicant has indicated its willingness to cooperate in such a program but insists that making it and other licensed project owners solely responsible for developing and implementing a debris removal plan would be unfair to its rate payers.

We agree that a cooperative debris removal and management program is required for the Susquehanna River licensed projects. The removal of debris is the proper responsibility of a licensee in the interests of public safety and project operation. We cannot state, however, that regardless of the magnitude or source of the debris, a licensee must bear the complete expense and responsibility for the removal of all floating debris. Should the debris problem be of such a magnitude that substantial expense would be involved in its removal, that burden should be allocated among all concerned parties including the licensees and proper government agencies. Accordingly, we are including Article 40 in this license to require the licensee, in consultation

with the Corps of Engineers, SRBC, and the licensees of the other Susquehanna River licensed projects (Project Nos. 405, 1025, and 1888) to conduct a study to determine both the magnitude and an appropriate plan for the disposition of river-borne debris. The results of this study and the management plan should be filed within two years of the issuance of this license. Should there continue to be disagreement regarding the allocation of expense and responsibility for debris removal, the Commission will determine the extent of its licensees' responsibilities at that time.

Historical Archeological Resources

The project as operated does not affect any site presently listed or under consideration for listing in either the National Register of Historic Places or the National Registry of Natural Landmarks. The Pennsylvania Historical and Museum Commission has been consulted and confirms the absence of any such adverse affect on historical resources. To protect any cultural resources that may be affected by the project during the new license term, Article 36 will be included in the license to require consultation with the State Historic Preservation Officer prior to commencement of any construction or development of facilities at the project.

Water Supply

SRBC has recommended that "any FERC license should defer to the SRBC the task of allocating water from the Project reservoir for public water supply, and make any right to use river flowage conferred by such license, subject to the SRBC's responsibility and authority for water supply." No concern regarding the allocation of water has arisen with respect to the Holtwood Project but SRBC anticipates that the licensee, on the basis of its posture at the Safe Harbor Project, would "require reimbursement on the basis of capacity and energy loss charges, for withdrawals of water...from the project reservoir." SRBC suggests that such charges imposed by the licensee would be "predicated on the presumption by the Licensee that the present FERC license allocates the total flow of the river for the sole use of the Licensee to generate hydroelectricity thereby overriding all other public interests and uses."

SRBC's concerns are based on a misunderstanding of the nature of the charge imposed at the Safe Harbor Project and the effect of an FERC license. At the Safe Harbor Project, the licensee has an agreement with the City of Lancaster Water Authority (City) whereby the City is charged a fee, 65 cents per million gallons, for withdrawing water from the project reservoir. The charge is imposed not on the water itself but rather on the use made of the project reservoir by the City in placing its intake structure there. This agreement, approved by the Commission, provides compensation to the licensee for the benefit received by the City in using the project reservoir. Absent the project dam, the City would have to construct an impoundment to facilitate its intake structure requirements. The licensee makes no claim that its FERC license allocates the flow of the river for its sole use to generate hydroelectricity, as alleged by SRBC.

A license issued under the Federal Power Act does not allocate the flow of the stream on which the project is located. No water rights at all are granted by the license. A licensee is directed to obtain sufficient property rights, including water rights, for project purposes and hold those rights for the duration of the license (see, e.g., Article 5, Form L-3 (October 1975)). Any utilization of project property by a third party for a previously authorized use is subject to the prior approval of the Commission to insure comprehensive development. This arrangement accomodates a variety of uses of project property including municipal water uses and local water resource management authority such as SRBC's authority in managing the waters of the Susquehanna River Basin. Standard license Article 13 directs licensees, upon order of the Commission, to permit reasonable use of project reservoirs and properties in the interests of, inter alia, conservation and utilization of the water resources of the region for purposes of municipal or similar uses. Provision is also made for compensation for the use of the project reservoir or other project properties. 6/

SRBC's concerns are thus adequately assured by the terms and conditions of this license. No right to allocate the flow of the stream is conferred by this or any FERC license. Should any entity wish to use the project resevoir or other project properties for the purpose of withdrawing water from the resevoir for municipal purposes, that entity would first obtain permission for that allocation of water from the SRBC. The Commission, having reserved the authority to direct the licensee to permit reasonable joint use of project property, would not act to approve such joint use until SRBC had acted on the third party's allocation request indicating its judgment of the compatibility of the joint use proposal with its comprehensive plan. The terms of any compensation to the licensee for the use of project property would be fixed by the Commission by approval of an agreement between the licensee and the joint user or, in the absence of agreement, after notice and opportunity for hearing. The views of SRBC with respect to what constitutes reasonable compensation to the licensee will be welcomed in the Commission's deliberations. We are confident that this cooperative procedure will properly protect SRBC's responsibility for water supply and the Commission's interest in supervising the use of project property.

Flood Control

Although the design of the project does not lend itself to provision for flood control in the usual sense, the coordinated operation of the reservoir with the upstream Safe Harbor reservoir provides some measure of control for local flash type floods in the range up to about 100,000 cfs.

In interests of preventing loss of life and significantly reducing future damages from floods within the Susquehanna River Basin, SRBC stated that the use of project lands must be in conformance with the Pennsylvania Flood Plain Management Act of 1978 and/or the Federal Flood Insurance Act. The Applicant responded that it intends to comply fully

6/ For an extended discussion of the standard license condition on joint use of project property, see Rumford Falls Power Company, Project No. 2333, 36 FPC 605 (1966).

with all applicable federal and state statutes. SRBC further recommended that new leases be denied for use of project lands within areas subject to frequent ice jam-related flooding if such use involves residential or nonconforming commercial development and that existing leases of project lands within the 100 year flood plain or areas subject to frequent ice jam-related flooding be reviewed with the intent of retiring such uses under some equitable plan.

Applicant disagreed with both of SRBC's recommendations with respect to leasing project lands. Applicant asserts that retiring outstanding leases and discontinuing new leases would be arbitrary and unreasonable because many people outside the project boundary but within the 100 year flood plain would continue to enjoy the use of their property. With respect to areas subject to frequent ice-jam related flooding, Applicant believes that a flat prohibition on leasing would be unwise inasmuch as there may be some uses of those lands that would be in the public interest.

We share SRBC's concern for public safety and the minimization of property damage in flood-prone areas within the project boundary. Article 41 directs the licensee to prepare a floodplain management report in consultation with SRBC and other appropriate agencies. The report will identify project lands within the 100 year flood plain and subject to frequent ice jam-related flooding, inventory current uses of floodplain lands, assess the hazard presented by such uses, involve consultation with current lessees, provide guidelines for future use of project flood plain lands and include any recommendations for retiring nonconforming uses. With respect to future leases of project lands, Article 35 confers on the licensee the authority without prior approval to permit certain minor uses of project lands and waters. Uses encompassed by this authorization include, inter alia, retaining walls, boat docks, roads, sewers. All other uses of project lands, including leasing project lands for residential development, are subject to review to determine if prior Commission approval is required. It is incumbent upon the applicant to demonstrate to the Commission that the proposed conveyance and use of project lands would be in the public interest, including the safety of persons and property. Upon completion of its flood plain management report pursuant to Article 41, Applicant will also have guidelines for future use of project floodplain lands developed in consultation with appropriate agencies.

Exhibits

Applicant filed Exhibits J, K, L, M, R and S as part of its application. Exhibits J, L, M, R, and S substantially conform with the Commission's regulations and should be approved and made a part of the license. The Exhibit K, which is a detailed map of the entire project area, will be approved only to the extent that it shows the general location of the project facilities. The Exhibit K maps do not clearly delineate the extent of Applicant's ownership in fee or flowage rights at the project. The project boundary should encompass at a minimum all lands on which flowage

rights would be needed for the reservoir under reasonably predictable flood conditions 7/ Article 38 directs the Applicant to file a revised Exhibit F and for approval, a revised Exhibit K conforming to the Commission's regulations and clearly delineating the licensee's flowage rights at the project. In order to verify the adequacy of the flowage rights included in its revised Exhibit K, the licensee shall also provide a detailed assessment of what flood conditions may reasonably be anticipated.

Other Environmental Considerations

Approval of a new license for the Holtwood Project would permit the continued project operation which started in 1910. No additional construction of power facilities would be authorized by this license. Any adverse environmental impact from the additional recreation facility development authorized by this license would be short-term and minor in nature. On the basis of the record, including agency and intervenor comments and the Commission staff's independent analysis, we conclude that issuance of this new license for Project No. 1881, as conditioned, would not constitute a major federal action significantly affecting the quality of the human environment.

Comprehensive Development

The Holtwood Project develops essentially all the head available (50.6 feet) between the tailwater elevation of the upstream Safe Harbor Project No. 1025 and the headwater elevation of the downstream Conowingo Project No. 405. The Holtwood Project is operated in coordination with the Safe Harbor and Conowingo projects and the Pennsylvania-New Jersey-Maryland Interconnection.

SRBC recommends that the Applicant be required to undertake a study relative to the redevelopment of the project to more effectively utilize river flow for power generation and other public purposes. Applicant responded that it would not object to such a requirement and has, in fact, already initiated such a study.

7/ The licensee is required under Article 5 to acquire adequate property rights including flowage rights within 5 years from the date of issuance of the license.

A staff evaluation report of the Holtwood Project prepared in 1970 indicated the possibility of increasing its capacity by building a new powerplant on the opposite (west) bank of the river from the existing plant. The new plant would include four equal-sized units having a total capacity of 162,000 kilowatts, increasing the project's total nameplate generating capacity to 269,200 kilowatts. The estimated cost for the new plant in 1970 was \$43,000,000 or \$266 per kilowatt. The additional units would generate 230 million kilowatt-hours in an average year in addition to the present average annual generation of 590 million kilowatt-hours. The incremental annual plant factor of the proposed new power facilities would be slightly greater than 16 percent while the combined annual plant factor of the total project would be just under 35 percent.

In 1970 the benefit-cost ratio of this expansion was 0.89 and therefore uneconomic. In view of the escalation of energy costs during the past 8 years, a renewed feasibility analysis for expanded capacity at the Holtwood Project is warranted. Article 37 requires that the licensee perform a feasibility analysis of installing additional generating capacity and, if additional capacity is feasible, a schedule for filing an application to add capacity. Under Article 9 of this license, we retain the authority to require the licensee to install additional capacity that may be economically feasible.

We conclude that the project as constructed makes effective use of the fall and flow of the Susquehanna River, and upon compliance with the terms and conditions of the license, will be best adapted to a plan for comprehensive development of the Susquehanna River for beneficial public uses.

Federal Takeover

Section 14 of the Federal Power Act reserves to the United States the right to take over a non-publicly owned project upon expiration of the license, after paying to the licensee the net investment in the project, not to exceed the fair value of the property taken, plus severance damages, if any. No federal department or agency, state, or municipality recommended takeover or redevelopment of the project by the United States or any other entity. The project is not in conflict with any project authorized or under study by the United States. None of the above governmental units has objected to the relicensing of the project. We know of no reason why federal takeover of the project would better serve the public interest than issuance of this license. Consequently, we shall not recommend federal takeover.

Term of License

The original license for Project No. 1881 was issued July 11, 1951, for a period effective January 1, 1938, and terminating June 30, 1970. The project has been operating under successive annual licenses since that time.

The Borough of Chambersburg (Chambersburg) in its petition to intervene requested that the relicensing of Project No. 1881 be held on an annual basis in order to evaluate the effects of the licensed projects' operations on the Susquehanna River Basin. Chambersburg's request was supported by the Pennsylvania Department of Environmental Resources and SRBC. SRBC had not at that time developed its own comprehensive plan for development of the resources of the Susquehanna River Basin. SRBC has since adopted and subsequently supplemented such a comprehensive plan and, in its detailed comments on this application filed January 10, 1980, recommended that the license term for the Holtwood Project not exceed 30 years.

It is neither practical nor necessary to license the Holtwood Project annually to determine the effects of project operation on the Susquehanna River Basin. The terms and conditions of the license issued by this order adequately assure the Commission's continuing regulatory authority over project operation. In its Order Issuing New License (Major) for Project No. 2301, issued October 5, 1976, the Commission stated that, in general, the term of relicense for projects issued under Section 15 of the Act, where no substantial redevelopment is contemplated or proposed, should be limited to 30 years from the expiration date of the original license. In the interest of providing for concurrent relicensing of licensed projects on the Susquehanna River to the maximum extent possible, we have decided that the license for the Holtwood Project should terminate September 1, 2004, approximately 34 years from the expiration date of the original license. The Holtwood Project license will expire concurrently with the Conowingo Project No. 405, York Haven Project No. 1888, and Muddy Run Pumped Storage Project No. 2301. The new license issued this same day for the only other licensed project on the Susquehanna River, the Safe Harbor Project No. 1025, will not expire concurrently with the above projects, but will be subject instead to a 50 year license term due to the substantial redevelopment authorized by that license. 8/

The Commission orders:

(A) A license is hereby issued to Pennsylvania Power & Light Company of Allentown, Pennsylvania, under Part I of the Federal Power Act (Act), for a period effective the first day of the month in which this license is issued and terminating September 1, 2004, for the continued operation and maintenance of Holtwood Project No. 1881 located on the Susquehanna River, a navigable waterway of the United States, in Lancaster and York Counties, Pennsylvania, subject to the terms and conditions of the Act which is incorporated by reference as a part of this license and subject to the regulations the Commission issues under the provisions of the Act.

8/ Should the licensee propose the addition of generating capacity at the project in the future, we will, at that time, entertain a request for an appropriate extension of license term subject to the constraints imposed by the Federal Power Act.

(B) The Holtwood Project No. 1881 consists of :

(1) all lands, to the extent of the licensee's interests in those lands, constituting the project area and enclosed by the project boundary. The project area and project boundary are shown and described by certain exhibits that form part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>Sheet</u>	<u>FERC No. 1881</u>	<u>Showing</u>
J	1	-75	Properties and Structures
J	2	-76	Susquehanna R. Drainage Area
J	3	-77	Holtwood and Safe Harbor Developments
J	4	-78	Transmission Lines
K	1	-79	Key Map Project Boundary
K	2	-80	Project Boundary Map
K	3	-81	Project Boundary Map
K	4	-82	Project Boundary Map
K	5	-83	Project Boundary Map
K	6	-84	Project Boundary Map
K	7	-85	Project Boundary Map
K	8	-86	Project Boundary Map
K	9	-87	Project Boundary Map
K	10	-88	Project Boundary Map
K	11	-89	Project Boundary Map
K	12	-90	Project Boundary Map
K	13	-91	Project Boundary Map

<u>Exhibit</u>	<u>Sheet</u>	<u>FERC No. 1881</u>	<u>Showing</u>
K	14	-92	Project Boundary Map
K	18	-96	Backwater Profiles
K	19	-97	Area and Capacity Curves
K	A statement, sheets 2 through 19, entitled "Description by Metes and Bounds of Project Boundary" filed February 27, 1970		

(2) project works consisting of: a concrete gravity overflow dam 2,392 feet long and 55 feet high with its crest at elevation 165.0 feet (m.s.l datum) and having flashboards which raise its effective height to 169.75 feet (m.s.l. datum); a reservoir (Lake Aldred) about eight miles long with a surface area of 2,400 acres at elevation 169.75 feet (m.s.l datum); an intake-powerhouse integral with the dam containing ten generating units having an aggregate capacity of 107,200 kilowatts; transmission facilities consisting of generator leads, the step-up 13.2/66-kV transformers at the powerhouse, the two 66-kV transmission lines (approximately 3,000 feet long) extending from the powerhouse to the Face Rock Substation; and appurtenant facilities: --the location, nature and character of these project works are generally shown and described by the exhibits cited above and more specifically shown and described by certain other exhibits that also form part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>Sheet</u>	<u>FERC No. 1881</u>	<u>Showing</u>
L	1	-98	General Layout of Structures
L	2	-99	Dam Location of Core Borings & Core Diagrams
L	3	-100	Spillway General Layout

<u>Exhibit</u>	<u>Sheet</u>	<u>FERC No. 1881</u>	<u>Showing</u>
L	4	-101	Dam Stability Analysis
L	5	-102	Powerhouse Stability Analysis
L	6	-103	Powerhouse-Typical Cross- Section-No. 3 Unit
L	7	-104	Powerhouse-Typical Cross- Section-No. 8 Unit
L	8	-105	Powerhouse-Typical Cross- Section-No. 10 Unit
L	9	-106	Powerhouse-Exterior Elevations, Downstream & Shore End Walls
L	10	-107	Powerhouse-Sectional Plans & Elevations

Exhibit M: Consisting of thirteen (13) typewritten pages entitled "General Description of Mechanical and Electrical Equipment and Appurtenances" filed with the Commission February 27, 1970.

Exhibit R: Consisting of typewritten pages 1 through 58 of text filed with the Commission February 27, 1970, and drawings hereinafter described:

<u>Exhibit</u>	<u>Sheet</u>	<u>FERC No. 1881</u>	<u>Showing</u>
R	1	-109	Location of Recreational Facilities
R	2	-110	Otter Creek-Recreational Facilities
R	3	-111	Pequea Creek-Recreational Facilities
R	4	-112	Lock No. 12, Pinnacle & Holtwood Recreational Facilities
R	5	-113	Tailrace Recreational Facilities

Exhibit S: Consisting of 15 typewritten pages of text filed February 27, 1970.

(3) all of the structures, fixtures, equipment or facilities used or useful in the maintenance or operation of the project and located within the project boundary, all portable property that may be employed in connection with the project, located within or outside the project boundary, as approved or by the Commission, and all riparian or other rights, that are necessary or appropriate in the maintenance or operation of the project.

(C) Exhibits J, L, M, R, and S, designated in ordering paragraph (B) above are approved and made a part of the license. Exhibit K is approved to the extent that it shows the general location, description and nature of the project.

(D) The license is also subject to Articles 1 through 28 set forth in Form L-3 (Revised October, 1975) entitled, "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," attached to and made a part of this license. This license is also subject to the following additional articles:

Article 29. Pending further order by the Commission on its own motion or at the request of others, after notice and opportunity for hearing, the Licensee shall:

(a) Discharge a minimum flow of 50 cfs downstream of Holtwood powerhouse and the unrestricted flow of the 10-inch pipe through the dam for the purposes of protecting the aquatic habitat and fish spawning areas of the Susquehanna River downstream of the project. These flows may be temporarily modified if required by operating emergencies beyond the control of the Licensee, for the study required by Article 39, and for short periods for fishery management purposes upon mutual agreement between the Licensee and the Pennsylvania Fish Commission.

(b) Operate the dam and powerhouse in such a manner that during the recreation season a minimum pool level of 167.5 feet msl is maintained.

Article 30. Licensee shall, during the period of this license, continue to consult and cooperate with the Fish and Wildlife Service of the Department of the Interior, the Pennsylvania Fish Commission, the Pennsylvania Game Commission and other appropriate environmental agencies for the protection and enhancement of the natural resource values of the project area.

Article 31. The Licensee shall pay the United States the following annual charge, effective as of the first day of the month in which the license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge as determined by the Commission in accordance with the provisions of its regulations, in effect from time to time. The authorized installed capacity for such purposes is 142,900 horsepower.

Article 32. Pursuant to Section 10(d) of the Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year: Provided, that, if and to the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year under the license, the amount of such deficiency shall be deducted from the amount of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained therein until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the weighted cost components of long-term debt, preferred stock, and the cost of common equity, as defined herein. The weighted cost component for each element of the reasonable rate of return is the product of its capital ratios and cost rate. The current capital ratios for each of the above elements of the rate of return shall be calculated annually based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 33. The Licensee shall, to the satisfaction of the Commission's authorized representative, install and operate such signs, lights, sirens, barriers, or other safety devices that may be reasonably needed to warn the public of fluctuations in flow from the project, and to protect the public in its recreational use of project lands and waters.

Article 34. The Licensee shall implement, and modify when appropriate, an emergency action plan designed to provide an early warning to upstream and downstream inhabitants, property owners, and recreational users if there should be an impending or actual sudden release of water caused by an accident to, or failure of, project works. That plan shall include: instruction to be provided on a continuing basis to operators and attendants for actions they are to take in the event of an emergency; detailed and documented plans for notifying law enforcement agents, appropriate federal, state, and local agencies, operators of water-related facilities, and those residents, owners of properties, and recreational users that could be endangered; actions that would be taken to reduce the inflow to the reservoir, if possible, by limiting the outflow from upstream dams or control structures; and actions to reduce downstream flows by controlling the outflow from dams located on tributaries to the stream on which the

project is located. The Licensee shall also submit a summary of the study used as a basis for determining the areas that may be affected by an emergency, including criteria and assumptions used. The Licensee shall monitor any changes in upstream or downstream conditions which may influence possible flows or affect areas susceptible to damage, and shall promptly make and file with the Commission appropriate changes in the emergency action plan. The Commission reserves the right to require modifications to the plan.

Article 35 . (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable State and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the Licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the Licensee's costs of administering the permit program. The Commission reserves the right to require the Licensee to file a description of its standards, guidelines, and procedures for

implementing this paragraph (b) and to require modifications of those standards, guidelines, or procedures.

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The Licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary State and Federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and State water quality certificates or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and State approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the Licensee must file a letter to the Director, Office of Electric Power Regulation, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or

State agency official consulted, and any Federal or State approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the Licensee to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the Licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

(4) The Commission reserves the right to require the Licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

Article 36. Prior to the commencement of any construction or development of any project works or other facilities at the project, the Licensee shall consult and cooperate with the State Historic Preservation Officer (SHPO) to determine the need for, and extent of, any archeological or historic resource surveys and any mitigative measures that may be necessary. The Licensee shall provide funds in a reasonable amount for such activity. If any previously unrecorded archeological or historic sites are discovered during the course of construction, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensee shall consult with the SHPO to develop a mitigation plan for the protection of significant archeological or historic resources. If the Licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historic work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

Article 37. The Licensee shall, within one year from the date of issuance of the license, prepare and file with the Commission a feasibility analysis of installing additional generating capacity at the Holtwood Project, taking into account, to the extent reasonable, all benefits that would be derived from the installation, including any contribution to the conservation of non-renewable natural resources. If the study shows additional capacity to be economically feasible, the Licensee shall simultaneously file a schedule for filing an application to amend its license to install that capacity.

Article 38. The Licensee shall file, within one year of the issuance date of the license, a revised Exhibit F and, for Commission approval a revised Exhibit K conforming to the Commission's regulations and clearly delineating its flowage rights at the project. The project boundary shall encompass at a minimum all lands on which flowage rights would be needed for the reservoir under reasonably predictable flood conditions. Licensee shall also provide a detailed assessment of what flood conditions may reasonably be anticipated.

Article 39. Licensee shall, in consultation with the Pennsylvania Fish Commission, the U.S. Fish and Wildlife Service of the Department of the Interior, and the Susquehanna River Basin Commission, develop a mutually satisfactory study plan to determine: (1) the seasonal variations of dissolved oxygen concentration and temperature in the project reservoir and in the discharge from the project; (2) the effects of project operation on temperature and dissolved oxygen levels in the reservoir and discharge from the project; (3) the source, nature, and quantity of oxygen-demanding materials present in and entering the project reservoir; (4) the most feasible methods for ensuring that water released from the project meets state water quality standards; and (5) the minimum flow releases from the project that are necessary to protect and enhance fish and wildlife resources. The development of the plan shall be

coordinated with the coincident study plans of dissolved oxygen conditions and flow releases being developed for the Conowingo Project, FERC No. 405, the Safe Harbor Project, FERC No. 1025, and the York Haven Project, FERC No. 1888, and shall include consideration of other headwater developments in the basin. Within 4 months from the date of issuance of this license, the Licensee shall file with the Commission for approval a mutually satisfactory study plan. If the Licensee and the agencies consulted cannot agree on a study plan, then within 4 months from the date of issuance of this license the Licensee shall file its proposed study plan with the Commission for approval, together with any reports or comments it has received on the plan from any consulted agency. At the same time, copies of the filing shall be served upon the agencies consulted. The Commission reserves the right to require modifications to the study plan.

The Licensee shall conduct the study as approved by the Commission. Within 3 months after the date of completion of the study, the Licensee shall file with the Commission for approval a report on the results of the study, including a schedule of minimum flow releases from the project and recommended measures for the maintenance of state water quality standards. At the same time, copies of the report shall be served upon the agencies consulted.

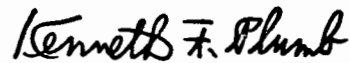
Article 40. Licensee shall, in consultation with the Department of the Army Corps of Engineers, the Susquehanna River Basin Commission, and appropriate State agencies and in cooperation with licensees of Conowingo Project, FERC No. 405, Safe Harbor Project, FERC No. 1025, and York Haven Project, FERC No. 1888, conduct a study to determine both the magnitude and an appropriate plan for disposition of river borne debris. The results of the debris study and a plan for implementing the recommendations contained therein shall be filed with the Commission within two years from the date of issuance of this license. The Commission reserves the right to require modification of the plan.

Article 41. In consultation with appropriate Federal, State and local agencies, including the Susquehanna River Basin Commission, the Licensee shall prepare a flood plain management report to be filed with the Commission within one year of the issuance date of this license. The report shall: (1) identify all project lands within the 100 year flood plain; (2) specify which of those lands are subject to frequent flooding due to ice jamming; (3) identify the type of use made of each designated parcel of project flood plain lands; (4) assess the consistency of each specified use with any hazard to life or property presented by its location in the flood plain; (5) detail consultation with current lessees; (6) include any recommendations for retiring any existing uses of the project flood plain that are incompatible with public safety and prudent flood plain management; and, (7) provide guidelines for future uses of project flood plain lands.

(E) This order is final unless an application for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the Act. The filing of an application for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. Failure of the Licensee to file an application for rehearing shall constitute acceptance of this license. In acknowledgement of acceptance of this license, the license shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

By the Commission.

(S E A L)



Kenneth F. Plumb,
Secretary.

Project No. 1881

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this Order, Pennsylvania Power & Light Company, this 25th day of September, 1980, has caused its corporate name to be signed hereto by John T. Kauffman, its Executive Vice President-Operations ~~President~~, and its corporate seal to be affixed hereto and attested by Jean A. Smolick its Assistant Secretary, pursuant to a resolution of its Board of Directors duly adopted on the 23rd day of September, 1980, a certified copy of the record of which is attached hereto.

By 
~~President~~
 John T. Kauffman
 Executive Vice President-Operations

Attest:


 Assistant Secretary

(Executed in quadruplicate)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE
WATERS OF THE UNITED STATES

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and supervision of the Regional Engineer, of the Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant

to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location

of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits

provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and

opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be

reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 27. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 28. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.