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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Allegheny Electric Cooperative, Inc. and)
the Pennsylvania Electric Company

Project No. 2769-000

ORDER ISSUING LICENSE (MAJOR)

(Issued November 10, 1982)

Allegheny Electric Cooperative, Inc. and the Pennsylvania Electric Company (Applicants) filed on March 31, 1980, and supplemented on December 8, 1980, February 13, 1981, May 29, 1981, and March 3, 1982, an application for license under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Raystown Project No. 2769. 1/ The project would be located at the existing Raystown Lake Dam and Reservoir owned and operated by the U.S. Army Corps of Engineers (Corps) on the Raystown Branch of the Juniata River in Huntingdon County, Pennsylvania. The project would occupy lands of the United States and would use a government dam.

Notice of the application has been published and comments have been received from interested Federal, State, and local agencies. No protests or petitions to intervene have been received, and none of the agencies objected to issuance of the license.

The Applicants propose to construct a multi-level gated intake structure near the right abutment of the dam, a power tunnel and steel penstock, a three-unit powerhouse immediately downstream of the dam with units having a total installed capacity of 20,300 kW, and transmission facilities. The project would be operated run-of-river and would utilize the flows released by the Corps.

Safety and Adequacy

The project structures would be safe for normal operating and flood control pool level conditions against flotation and overturning, if constructed in accordance with sound engineering practices and construction procedures. For floods greater in

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 18 C.F.R. §375.308 (1981). This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. 385.1902, 47 Fed. Reg. 19047 (1982). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act. Filing an appeal does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically directed by the Commission.

magnitude than the standard project flood, the powerhouse would be inundated. The penstock would be designed to withstand internal surge pressures 40 percent in excess of normal pressure and to withstand full external surcharge pressure.

Project Operation and Aquatic Resources

The Raystown Dam, which is not a facility being licensed herein, was completed in 1975, and was built for flood control and recreational purposes. Temperature and DO levels of releases up to 1,420 cubic feet per second (cfs) are controlled by a tri-level intake structure to maintain State water quality standards downstream in the Raystown Branch of the Juniata River, and to protect the downstream warmwater fishery. The Corps maintains a minimum flow release of 200 cfs to protect recreational activities by preventing significant drawdown of the lake, and to protect aquatic resources.

A water quality certificate was issued to the Applicants by the Pennsylvania Department of Environmental Resources (DER) in July, 1980.

The Fish and Wildlife Service (FWS), Pennsylvania Fish Commission (PFC), Susquehanna River Basin Commission (SRBC) and the Huntingdon Business and Industry, Inc. (HBI), are all opposed to having the proposed project's mode of operation changed from a run-of-river to a peaking operation at any time in the future. They believe that a peaking mode would adversely impact recreation, the reservoir fishery, downstream fisheries, and lake wetlands. SRBC and PFC suggest that at no time should the quantity of water passed through the turbine exceed the inflow measured at the Saxton gage located on the Raystown Branch of the Juniata River at Saxton, Pennsylvania.

The Applicants responded that in the future a limited peaking operation may prove to be the optimum utilization of water resources. Should peaking operations merit consideration, Applicants indicated they would consult with appropriate agencies to undertake the necessary studies to determine the environmental effects of a change to a peaking operation, prior to seeking approval for a change in the project's operational mode. Any change in operating procedure to incorporate a peaking operation would also require approval by the Commission and the Corps to ensure compatibility with the purposes for which the Federal project was constructed.

The FWS, SRBC, HBI, PFC, and the Corps all expressed concern about the possible use of water during power emergencies. The Applicants responded by stating that there is little probability of such a power emergency. The Corps stated that project water regulations during a power emergency would be agreed upon in a Memorandum of Understanding between the Applicants and the Corps.

The Corps recommended that to maintain control of the temperature of the water released downstream, the location and geometry of the intake ports should be determined by a mathematical modeling study. Such a study should be supported by operating data from the existing project. The Applicants responded they have informally discussed this matter with Corps personnel and have agreed that prior to construction of the project, the selection of the opening elevations could be based, within limits, on mathematical modeling.

It is concluded that temperature regulation of the water released downstream is important in maintaining the downstream fisheries. Special license Article 34 requires Licensees to consult with the Corps and to conduct a mathematical modeling study of the proposed intake structure to determine the optimum location and design of the intake ports to ensure proper temperature regulation of waters released downstream for fishery protection.

The SRBC expressed concern regarding turbine mortality impacts on the fishery resource, and suggested that, should it be determined that mortality significantly impacts the fishery, Applicant should agree to stock fish or mitigate for these losses. The Corps proposed that a monitoring program should be established to determine turbine mortality and dissolved nitrogen levels, and that the program be coordinated with the FWS and PFC. They also proposed that the Applicants mitigate or compensate for any significant losses to the fisheries and to maintain desirable nitrogen levels.

Applicants agreed to monitor the effects of the project's operation on fish resources which might be attributed to turbine mortality and to mitigate fish losses that may occur. However, a report prepared by Harza Engineering Company, "Study of Fish Populations in Raystown Lake," indicated the probable loss of fish from the reservoir would be less with the proposed project operating than presently occurs, due to a reduction from the present intake velocities of 20 feet per second (fps) to a project operational mode of 3 fps. Neither the FWS nor the PFC expressed concern that turbine mortality is a significant issue.

It is concluded that further mortality studies are not necessary at this time. Should turbine mortality become a significant issue in the future, Standard license Article 15 provides for appropriate relief. We are, however, including Special license Article 34 which requires that proper dissolved nitrogen levels be maintained for fishery protection. The portions of the Exhibit E in which the Applicants agree to mitigate for any fish losses are approved in this order.

Recreational Resources

The Corps provides a variety of day-use and overnight recreational facilities around the 118-mile reservoir shoreline which include boat launches, campgrounds, fishing access, trails, and picnic areas. The reservoir is utilized year-round, primarily by campers, sightseers, and fishermen, and from June until September by swimmers and water skiers.

The Corps recommended that additional parking spaces be provided in the vicinity of the tailrace of the proposed project to accommodate the expected increase in visitation. Applicants did not respond to this comment.

The Report on Recreational Resources contains a conceptual plan for enhancing recreational opportunities at the project which would consist of providing improved public access to the tailrace area and an interpretive display of hydroelectric generation. The details of this plan have not been concurred in by the Corps. Special license Article 35 requires further consultation with the Corps on development of a recreation plan and the filing of as-built drawings of any recreation facilities constructed. Under Article 17 of this license the Commission reserves the right to require additional recreational development in the future, if needed.

Historical and Archeological Resources

There are no historic sites listed on the National Register of Historic Places located near Raystown Lake. The Pennsylvania State Historic Preservation Officer indicated that the project would not affect any known archeological or historical sites.

In accordance with standard Commission practice, 2/ Article 33 of this license requires cultural resources protection measures in the event of any future construction or development at the project, other than the project development considered and authorized herein.

Endangered Species

Ten species of plants listed by the Commonwealth of Pennsylvania as threatened or endangered may occur in the vicinity of the project. Four of these plant species are candidates for the Federal list of threatened or endangered plant species. However, Federally-listed threatened or endangered plant species are not expected to be found where construction activities would occur. Furthermore, construction activities under the license will occur only in previously disturbed areas.

2/ See S. D. Warren, Project No. 2897, Order Denying Rehearing (issued February 19, 1980).

Bald eagles may occur at Raystown Lake in fall or winter; the peregrine falcon may migrate through the area; and the Raystown area is within the summer range of the Indiana bat. Of these species only the bald eagle has been observed in the project area. Construction and operation of the project as proposed would not affect the above species.

Environmental Impacts

Project construction would result in the loss of a small amount of vegetation, and increased dust, noise, sedimentation and erosion. Project operation may result in some fish mortality. However, on the basis of the record, and staff's independent analysis, it is concluded that the issuance of this license will not constitute a major Federal action significantly affecting the quality of the human environment.

Other Aspects of Comprehensive Development

The project is economically feasible when the annual levelized cost of power generated by the project is compared to the combined annual levelized cost of equivalent power generated by a fossil fuel plant and the cost of power purchased from the Pennsylvania-New Jersey-Maryland Interconnection (PJM). The project would generate an estimated average of 77,100,000 kWh annually, which is equivalent to output from 126,600 barrels of oil or 35,700 tons of coal.

The project would make good use of the head created by Raystown Dam and the flow released from the Raystown Lake, is not in conflict with any plans for development of the river, and would be best adapted to the comprehensive development of the Susquehanna River upon compliance with terms and conditions of this license.

Annual Charges

Under the Federal Power Act, the Commission is required to assess a Licensee an annual charge for the use of a Government dam. Since the Commission staff is reassessing the subject of annual charges for the use of a Government dam, the determination of charges should be deferred in accordance with Article 40 of this order.

It is ordered that:

(A) This license is issued to the Allegheny Electric Cooperative, Inc. and the Pennsylvania Electric Company (Licensees) under Part I of the Federal Power Act (Act), for a period of 50 years, effective the first day of the month in which this order is issued, for the construction, operation, and maintenance of the Raystown Project No. 2769, located on the Raystown Branch of

the Juniata River in Huntingdon County, Pennsylvania, and occupying lands of the United States and using surplus water power from a Government Dam. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The Raystown Project No. 2769 would consist 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 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>FERC No. 2769-</u>	<u>Showing</u>
G-1	11	Project Boundary
G-2	12	Project Boundary

(2) Project works consisting of: (1) a multi-level, gated power intake constructed in the Raystown Lake near the right abutment of Raystown Dam; (2) a 12-foot diameter, 1,015-foot-long concrete-lined pressure tunnel; (3) a 12-foot-diameter, 86-foot-long buried steel penstock, which branches at the powerhouse into two 8-foot-diameter penstocks and then into one 7-foot-diameter and two 5-foot-diameter penstocks; (4) a powerhouse containing three turbine-generator units having a total installed capacity of 20,300 kW; (5) an excavated tailrace; (6) 6.9-kV generator leads, a 21/28 MVA 6.9/46-kV step-up transformer, a 2.7-mile long transmission line; and (7) other appurtenances.

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>FERC No. 2769-</u>	<u>Showing</u>
F-1	6	General Plan
F-2	7	General Profile
F-3	8	Powerhouse
F-4	9	Power Intake
F-5	10	Transmission Plan

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

(C) Exhibits F and G, designated in ordering paragraph (B) above are approved and made a part of the license.

(D) Pages E-3-6, E-3-7, E-3-28, E-3-30, E-3-31 and E-3-32 of the Report on Fish, Wildlife and Botanical Resources, filed March 31, 1980, is approved.

(E) This license is also subject to the terms and conditions set forth in Form L-2 (revised October 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting Lands of the United States", attached and made part of this license. This license is also subject to the special conditions set forth as additional articles:

Article 33. Licensees shall, prior to the commencement of any construction or alteration of facilities at the project, consult with the Pennsylvania State Historic Preservation Officer (SHPO) about the need for any cultural resource survey and salvage work. The Licensees shall make available funds in a reasonable amount for any such work as required. If any previously unrecorded archeological or historical sites are discovered during the course of construction or development of any project works or other facilities at the project, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensees shall consult with the SHPO to develop a mitigation plan for the protection for significant archeological or historical resources. If the Licensees 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 Licensees to conduct, at their own expense, any such work found necessary.

Article 34. Licensees shall, within 6 months after the date of issuance of this license, file for Commission approval, revised Exhibit F drawings showing the location, geometry and final design of the intake structure. This design shall be based on a mathematical model, shall be developed in consultation with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service and Pennsylvania Fish Commission, and shall ensure proper temperature regulation and dissolved nitrogen levels of water released downstream for fishery protection.

Article 35. Licensees shall consult with the U.S. Army Corps of Engineers in finalizing the recreation plan for Project No. 2769, as described in the Report on Recreational Resources and as delineated on Figure 5-3 of Exhibit E in the Application. Licensees shall file with the Commission within 1 year following commencement of project operation, as-built drawing(s) that show the type and location of the recreational facilities being provided at the project.

Article 36. The Licensees shall commence construction of the proposed project within two years of the date of issuance of the license and shall complete construction within three years from the start of construction.

Article 37. The Licensees shall file with the Commission's Regional Engineer and the Director, Office of Electric Power Regulation, one copy each of the final contract drawings, specifications and final design report for pertinent features of the project, such as intake structure, powerhouse, and water conveyance structure, at least 60 days prior to start of construction. The Director, Office of Electric Power Regulation may require changes in the plans and specifications to ensure a safe and adequate project.

Article 38. The Licensees shall review and approve the design and construction procedures for contractor-designed cofferdams and deep excavations prior to the start of construction. The Licensees shall file with the Commission's Regional Engineer and Director, Office of Electric Power Regulation, one copy of the approved construction drawings and specifications, and a copy of the letter of approval.

Article 39. The Licensees shall have no claim under this license against the United States arising from the effect of any changes made in the operating pool levels at the Raystown Dam.

Article 40. The Licensees shall pay the United States the following annual charges effective the first day of the month in which this license is issued:

(a) For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 27,000 horsepower.

(b) For the purpose of recompensing the United States for utilization of surplus water or water power from the Government dam or lands in connection therewith, an amount to be hereafter determined by the Commission.

Article 41. The Licensees shall enter into an agreement to coordinate their plans with the U.S. Corps of Engineers for access to an site activities on lands and property administered by the Corps so that the authorized purposes, including operation of the Federal facilities, are protected. In general, the agreement shall not be redundant with the Commission's requirements contained in this license and shall identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement shall be mainly composed of the following items: (1) Reasonable arrangements for access to the Corps site to conduct studies and construction activities, such access rights to be conditioned by Corps as may be necessary to protect the Federally authorized project purposes and operations; (2) charges to be paid by Licensees to the Corps (a) for technical studies by the Corps that relate solely to the structural integrity of the Corps facility associated with power plant development, and (b) for review of designs including plans and specifications, and for construction inspections based on personnel costs, where such review and inspections are directly related to the structural integrity of the Raystown Dam; and (3) charges to be paid by Licensees to the Corps for copies or reports, drawings and similar data based on printing and mailing costs, provided that charges shall not be assessed for information, services, or relationships that would normally be provided to the public. Should the Licensees and the Corps fail to reach an agreement, the Licensees shall refer the matter to the Commission for resolution.

Article 42. The Licensees shall within 90 days of completion of construction file in accordance with the Commission's Rules and Regulations revised Exhibit F drawings showing the project as-built.

Article 43. The construction, operation and maintenance of the project works that, in the judgment of the U.S. Corps of Engineers, Baltimore District, may affect the structural integrity or operation of the COE's project shall be subject to periodic or continuous inspections by the COE. Any construction, operation or maintenance deficiencies or difficulties detected by the COE inspection will be immediately reported to the Regional Engineer. Upon review, the Regional Engineer will refer the matter to the Licensees for appropriate action. The COE inspector will report to the Regional Engineer the need to stop construction, operation or maintenance while awaiting resolution of construction, operation or maintenance deficiencies or difficulties if such deficiency or difficulty would affect the structural integrity of the COE project. In cases when construction, operation or maintenance practice or deficiency may result in an emergency situation causing imminent danger to the structural integrity and safety of the COE project, the COE inspector has the authority to stop construction, operation or maintenance while awaiting the resolution of the problem.

Article 44. Licensees shall prior to commencement of operation of the project enter into a memorandum of agreement with the U.S. Corps of Engineers, Baltimore District describing the mode of hydropower operation acceptable to the Corps. The Commission's Regional Engineer shall be invited to attend meetings regarding the agreement. The memorandum of agreement shall be subject to revision by mutual consent of the Corps and Licensees as experience is gained by actual project operation. Should the Licensees fail to reach an agreement with the Corps, the Licensees shall refer the matter to the Director, Office of Electric Power Regulation for resolution. Copies of the signed memorandum between the Corps and the Licensees and any revision thereof shall be furnished to the Director, Office of Electric Power Regulation and the Regional Engineer.

Article 45. The Licensees shall retain a Board of two or more qualified, independent, engineering consultants to review the design, specifications, and construction of the project for safety and adequacy. The names and qualifications of the Board members shall be submitted to the Director, Office of Electric Power Regulation (OEPR) for approval, with a copy to the Commission's Regional Engineer. Among other things, the Board shall assess the geology of the project site and surroundings; the design, specifications, and construction of the intake structure, power tunnel, penstock, powerhouse, and construction procedures and progress. The Licensees shall furnish to the Board, with a copy to the Regional Engineer and two copies to the Director, OEPR, prior to each meeting, allowing sufficient time for review, documentation showing details and analyses of design and construction features to be discussed, significant events in design and construction that have occurred since the last Board of Consultants meeting, drawings, questions to be asked, a list of items for discussion, an agenda, and a statement indicating the specific level of review to be performed by the Board. Within 30 days after each Board of Consultants meeting, the Licensees shall submit to the Commission copies of the Board's report and a statement of intent to comply with the Board's recommendations, or a statement of intent to comply with the Board's recommendations, or a statement identifying a plan to resolve the issue(s). In the event of noncompliance, the Licensees shall provide detailed reasons for not doing so. The Board's review comments for each portion of the project shall be submitted prior to or simultaneously with the submission of the corresponding Exhibit F final design drawings and design memoranda. The Licensees shall also submit a final report of the Board upon completion of the project. The final report shall contain a statement indicating the Board's opinion with respect to the construction, safety, and adequacy of the project structure(s).

Article 45 . (a) In accordance with the provisions of this article, the Licensees 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 Licensees 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 Licensees 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 Licensees 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 Licensees 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 Licensees 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 Licensees shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensees 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 Licensees 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 Licensees 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 Licensees to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The Licensees 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 Licensees 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 Licensees 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 Licensees 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 Licensees to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.