**ATTACHMENT 4**
**FERC LICENSE AMENDMENTS**

41 FERC ¶62,304



UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Bangor Hydro-Electric Company Project No. 2727-003

ORDER ISSUING NEW LICENSE
(Major Project - Existing Dam)
( Issued December 28, 1987 )

Bangor Hydro-Electric Company has filed a license application under Part I of the Federal Power Act (Act) to continue to operate and maintain the Ellsworth Project, located in Hancock County, Maine, on the Union River, a navigable waterway of the United States. 1/

Notice of the application has been published. The motions to intervene that have been granted and the comments and protests filed by agencies and individuals have been fully considered in determining whether to issue this license, as discussed below.

Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j) of the Act, as amended by the Electric Consumers Protection Act of 1986 (ECPA), Public Law No. 99-495, requires the Commission to include license conditions, based on recommendations of federal and state fish and wildlife agencies, for the protection, mitigation, and enhancement of fish and wildlife. The environmental assessment (EA) for the Ellsworth Hydroelectric Project addresses the concerns of the federal and state fish and wildlife agencies, and makes recommendations consistent with those of the agencies.

Comprehensive Plans

Section 10(a)(2) of the Act, as amended by ECPA, requires the Commission to consider the extent to which a project is consistent with comprehensive plans (where they exist) for improving, developing, or conserving a waterway or waterways affected by the project. The plans must be prepared by an agency established pursuant to federal law that has the authority to prepare such a plan or by the state in which the facility is or will be located. The Commission considers plans to be within the scope of section 10(a)(2), only if such plans reflect the preparers' own balancing of competing uses of a waterway, based on their data and applicable policy considerations (i.e., consider and balance all relevant public use considerations). With regard to plans prepared at the state level, such plans are within the scope of section 10(a)(2),

1/ 58 FPC 212 (1977).

only if they are prepared and adopted pursuant to a specific act of the state legislature and developed, implemented, and managed by an appropriate state agency. 2/

The Commission has concluded that comprehensive planning under section 10(a)(2)(A), like comprehensive planning under section 10(a)(1), should take into account all existing and potential uses of a waterway relevant to the public interest, including navigation, power development, energy conservation, fish and wildlife protection and enhancement, recreational opportunities, irrigation, flood control, water supply, and other aspects of environmental quality. In order that the Commission may fully understand or independently confirm the content and conclusions of a comprehensive plan, it provided general guidelines for developing such plans that should contain the following: (1) a description of the waterway(s) that are subject to the plan, including pertinent maps; (2) a description of the significant resources of the waterway(s); (3) a description of the various existing and planned uses for these resources; and (4) a discussion of goals, objectives, and recommendations for improving, developing, or conserving the waterway(s) in relation to these resources. The more closely a plan conforms to these guidelines, the more weight it will have on the Commission's decisions. The Commission, however, will consider plans that do not meet the criteria for comprehensive plans, as it considers all relevant studies and recommendations in its public interest analysis pursuant to section 10(a)(1) to the extent that the documentation supports the plan.3/

The staff identified one comprehensive plan of the type referred to in section 10(a)(2) of the Act relevant to this project.4/ No conflicts were found. No resource plans that address various aspects of waterway management under section 10(a)(1) of the Act were brought our attention.

Based upon our review of the agency and public comments filed in this proceeding, and an independent analysis as discussed herein, it is concluded that the Ellsworth Project is best adapted to a comprehensive plan for the Union River, taking into consideration the beneficial public uses described in section 10(a)(1) of the Act.

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2/ See Fieldcrest Mills, Inc. 37 FERC ¶61,264 (1986).

3/ See Commission Order No. 481, issued October 20, 1987.

4/ Maine State Planning Office's State of Maine Comprehensive Rivers Management Plan 1987.

Federal Power Act - Section 15(a)

Section 4 of the ECPA amended Section 15 of the Act to specify a number of factors the Commission is required to consider in acting on applications for new license following the expiration of existing licenses.

1. The plans and abilities of the applicant to comply with the articles, terms, and conditions of any license issued to it and other applicable provisions of Part I of the Act (Section 15(a)(2)(A))

The Bangor Hydro-Electric Company (Bangor) states that, since obtaining the existing license, it has been committed to meeting the requirements of all the articles, terms, and conditions of the existing license. Bangor maintains that its past performance, in conjunction with its future operations and maintenance plans, and its record of compliance with the requirements of the jurisdictional agencies, demonstrate that it is committed to meeting the future requirements for the continued operation of the project.

Our review of the compliance record of the Bangor substantiates that the Bangor has generally complied with all articles, terms, and conditions of its existing license. Bangor has, on occasion, filed some compliance material late; however, staff will monitor closely Bangor's compliance in future requirements. Based on the above, and in consideration of the requirements of the new license, it is concluded that the Bangor will be able to comply with the terms and conditions of the new license and other provisions of Part I of the Act.

2. The plans of the applicant to manage, operate and maintain the project safely (Section 15(a)(2)(B))

The Bangor states that it is operating the generating facilities with a foremost concern for the safety of its employees and the public. Records indicate that there has never been an employee fatality. Also, there has been no injury or death to any member of the public within the project boundary. The Bangor has adopted a Safety Inspection Manual based on its operating experience, and this manual is continually updated. The project is, and will continue to be, operated as a peaking plant, which causes no extreme fluctuations, thus posing no project-caused hazard for fishermen and boaters. The Bangor has prepared an emergency action plan with a notification procedure to the public in case of a potential threat to life or property downstream.

Based upon our review of the specific information provided by the Bangor on various aspects of the project that affect public safety, inspection reports by the Commission's Regional Director, and independent consultant reports filed under Part 12 of our regulations, 18 C.F.R. Part 12 (1987), it is concluded that with article number 301, the Bangor's plans to manage, operate, and maintain the project safely, would be adequate.

3. The plans and abilities of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service (Section 15(a)(2)(C))

The Bangor states that during the past years they have: (1) removed the two 1,000 kW horizontal units (Units No. 2 and 3) and installed two new 2,000 kW units, one in 1937, the other in 1938, (2) replaced the damaged racks in 1950, (3) rebuilt Units No. 1 and 4 in 1982, (4) repaired concrete forebay walls and walkway and replaced roof over Unit No. 1 in 1983, (5) replaced hydraulic braking systems on Units No. 1, 2 and 3 in 1985, (6) replaced hydraulic braking system on Units No. 1, 2, and 3 in 1985, (7) placed rip-rap along the downstream river bank adjacent to the parking lot and regulators to prevent erosion, and (8) provided several smaller repair work between 1937 and 1986.

There are no water resource projects located upstream of Ellsworth Dam, except the Graham Dam, which would require the Bangor to coordinate the operation of the Ellsworth project.

The plant is operated in an automatic mode in a manner that maximizes generating efficiency. Maintenance upkeep has included upgrading electrical systems and repairs to the project works.

Operation of the Ellsworth Project enables the Bangor to reduce the loading of its transmission lines and the substation. The hydroelectric plant provides low-cost generation in the Bangor's system, and these benefits are expected to increase in the future because of the escalation of fuel costs.

Based on the above considerations, review of the operation inspection reports by the Regional Director, the Bangor's past performance, and future plans to operate the project, we believe that the project is, and under the new license will continue to be operated and maintained in an efficient and reliable manner.

4. The need of the applicant over the short and long term for the electricity generated by the project to serve its customers (Section 15(a)(2)(D)

The applicant, Bangor, has applied to FERC for a new license to continue operation of the 8.9-MW Ellsworth Project. The project is located in the fastest growing portion of applicant's service area and substantial load growth is expected to continue.

Applicant's need for continuing operation of the project, over both the short and long terms is both economic and operational. From both economic and financial points of view, no source of replacement power is available which is cost-competitive with a hydroelectric facility whose original cost has been amortized, which has no fuel costs and which has modest operating and maintenance costs. From an operational point of view, the project provides the high reliability associated with hydroelectric facilities, has "black start" capacity which is used to bring other sources on-line in the event of a system outage, provides approximately 9 megawatts of spinning reserve and, when its output is not on dispatch, is available as a support source while repairs are being made. Additionally, it is the opinion of Staff that 79 years of operation and usefulness by, and to, the applicant give strong support to the applicant's need for the project and a new license.

In the event of denial of a new license, the applicant estimates the cost of replacement capacity and energy would be approximately $43,000,000 (1987 dollars) for the first thirty years of the new license period. This estimate includes capital costs of existing and new combustion turbines and existing oil-fired steam plants. Also included in the estimate are fuel costs (principally imported oil) and operating and maintenance costs.

Other alternative sources of replacement power deserving consideration are the purchase of Canadian Hydropower and power from available cogeneration or small power producer facilities at avoided-cost rates.

The applicant has expressed concerns about the future costs and reliability of availability of replacement power purchases from a foreign sources (Canadian Hydro) or from sources which depend upon imported oil.

Except for Canadian hydro, alternative replacement power sources would consume non-renewable energy resources, principally oil, and would produce additional atomospheric pollution.

Accepting applicant's estimate of the 30-year cost of 43 million 1987 dollars for replacement power, staff estimates that, in 1987 dollars, the unit cost of replacement power for the year 1986 would have been $0.0415 per kilowatt-hour. In 1986 the project produced 34,493,700 net kilowatt-hours of electrical energy at a unit cost of $0.0101 per kilowatt-hour.

5. The applicant's existing and planned transmission services (Section 15(a)(2)(E))

If the applicant is granted a new license to continue operation of the project, no changes will be required on the transmission line emanating from the project switch-yard and carrying only project power. Changes required on other lines of applicant's system will be such changes as are required as a result of load growth.

If the license is not renewed and applicant loses the projec power, the project transmission line will not be needed and the 34.5-kV Ellsworth Substation located adjacent to the Ellsworth project powerhouse as well as lines L-1 and L-10 will require relocation. Applicant estimates that the cost of relocating the transmission system components located within the Ellsworth project boundary would approach $150,000.

Applicant states that loss of the Ellsworth Project would result in higher system line losses; adverse impact on system reliability; and substantial expenditures to replace system components including substations, distribution lines and transmission lines.

6. Whether the plans of the applicant will be achieved, to the greatest extent possible, in a cost effective manner (Section 15(a)(2)(F))

With regard to the Ellsworth Project, the Bangor upgraded and modernized the equipment, and reduced the overall operation expenses. Units No. 2 and 3 were replaced by upgraded units to achieve higher efficiency.

No increase of capacity is planned. With the hydraulic capacity of 2,300 cfs and minimum flow release of 90 cfs, the Bangor adequately utilizes the flows of the Union River.

There are no projects, proposed or constructed on the Union River that this project would impact, and neither State or Federal agencies commented on flood control, navigation, water supply or irrigation requirements in the basin.

The Director orders:

(A) This license is issued to Bangor Hydro Electric Company (licensee), for a period of 30 years, effective January 1, 1988, to continue to operate and maintain the Ellsworth Project. 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 project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G:

| Exhibit G- | FERC No. 2727- | Showing |
|---|---|---|
| G-1 | 18 | General Location Map |
| G-2 | 19 | General Project Area Map |
| G-3 | 20 | Project Boundary Map |
| G-4 | 21 | Project Boundary Map |
| G-5 | 22 | Project Boundary Map |

(2) Project works consisting of: (a) Graham Dam, an earthfill dam with concrete core walls, about 750 feet long and 30 feet high and having a gated concrete spillway; (b) Graham Lake, a reservoir extending approximately 15 miles above Graham Dam having a surface area of 12,200 acres at normal water surface elevation 104.2 feet U.S.G.S. datum: (c) Ellsworth Dam, a concrete buttress dam located about 4 miles downstream of Graham Dam, approximately 377 feet long and 60 feet high with 26-inch-high flashboards on the spillway; (d) Lake Leonard, a forebay reservoir extending approximately 1 mile above Ellsworth Dam and having a surface area of 125 acres at normal water surface elevation 66.67 feet U.S.G.S. datum; (e) a reinforced concrete and concrete block masonry powerhouse containing one 2,500-kW generating unit, two 2,000-kW generating units, and one 2,400-kW generating unit; (f) the generator leads; (g) three 2.3/34.5-kV step-up transformers; (h) the 34.5-kV transmission line connecting the step-up transformers to the 34.5-kV bus of the Ellsworth substation; and (i) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F recommended for approval in the attached Safety and Design Assessment.

As to the total project, the recreation resources are in accord with the Commission's policy on recreation.

Term of License

Section 5 of ECPA amended Section 15 of the Act specifying that any license issued under Section 15 shall be for a term which the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. This new provision is consistent with pre-ECPA Commission policy, which was to establish 30-year terms for those projects which proposed no new construction or capacity, 40-year terms for those projects that proposed a moderate amount of new development, and 50-year terms for those projects that proposed a substantial amount of new development.5/

Bangor Hydro-Electric Company proposes no modifications to the existing project facilities or changes in operation of the project. Accordingly, the new license for the project will be for a term of 30 years.

Summary of Findings

An EA was issued for this project. Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. Issuance of this license is not a major federal action significantly affecting the quality of the human environment.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the Safety and Design Assessment attached to this order.

The Director, Office of Hydropower Licensing, concludes that the project would not conflict with any planned or authorized development, and would be best adapted to comprehensive development of the waterway for beneficial public uses.

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5/ See Montana Power Company, 56 F.P.C. 2008 (1976).

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

(C) The Exhibit G described above and those sections of Exhibits A and F recommended for approval in the attached Safety and Design Assessment are approved and made part of the license.

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

Article 201. The licensee shall pay the United States the following annual charge, effective January 1, 1988:

> 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 11,900 horsepower.

Article 202. 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. 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 that deficiency shall be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated 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 long-term debt and preferred stock shall be their respective weighted average costs 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 401. The licensee shall release a continuous minimum flow of 105 cubic feet per second (cfs) from the Ellsworth dam and the Graham dam from July 1 through April 30, and a continuous minimum flow of 250 cfs from May 1 through June 30, for the protection of fishery resources. These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement among the licensee, the U.S. Fish and Wildlife Service, and the Maine Department of Environmental Protection.

Article 402. The licensee shall operate the project so that water levels in Lake Leonard are maintained between the elevations of 65.7 feet mean sea level (msl) and 66.7 feet (flashboard crest), and water levels in Graham Lake are maintained between 104.2 feet msl and 93.4 feet msl. These requirements may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement among the licensee, the U.S. Fish and Wildlife Service, and the Maine Department of Environmental Protection.

Article 403. The licensee, after consulting with the U.S. Fish and Wildlife Service, the Maine Department of Inland Fisheries and Wildlife, and the Maine Department of Environmental Protection, shall develop a study plan to determine the effectiveness of the water elevation management plan in controlling shoreline erosion and protecting water quality and providing for enhancement of fish and wildlife resources in Graham Lake. Within 6 months from the date of issuance of this license, the licensee shall file for Commission approval a copy of the study plan, the comments of the agencies on the plan, and a schedule for filing the results of the study. The Commission reserves the right to require modifications to the plan and the schedule.

According to the schedule approved by the Commission, the licensee shall file with the consulted agencies and with the Commission a report on the results of the study. The licensee shall also file for Commission approval any recommended measures for changes in project operation necessary for further minimizing the effects of project operation on fish and wildlife resources in Graham Lake, and shall include agency comments on the study results and on the licensee's recommendations. The Commission reserves the right to require changes to the measures.

Article 404. The licensee, after consulting with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Maine Department of Marine Resources, and the Maine Department of Environmental Protection, shall develop a study plan to determine the effectiveness of minimum flow releases required by article 401 to protect fishery resources at the Ellsworth Hydroelectric Project. Within 1 year from the date of issuance of this license, the licensee shall file for Commission approval a copy of the study plan, the comments of the agencies on the plan, and a schedule for filing the results of the study. The Commission reserves the right to require modifications to the plan and the schedule.

According to the schedule approved by the Commission, the licensee shall file with the consulted agencies and with the Commission a report on the results of the study. The licensee also shall file for Commission approval any recommendations for changes in project operation needed to ensure the protection of anadromous fish resources, a schedule for implementing the recommendations, and the comments of the agencies on the recommendations. The Commission reserves the right to require changes to the measures.

Article 405. The licensee, in cooperation with the U.S. Fish and Wildlife Service, the Maine Department of Inland Fisheries and Wildlife, and the Maine Department of Environmental Protection, shall develop a plan to install streamflow gages in the Union River to monitor the minimum flow releases required by article 401. The plan shall include the location and design of gages, method of flow data collection, and provisions for providing the flow data to the agencies within 30 days of the agencies' request for the data. The plan shall be filed within 6 months from the date of issuance of this license, and shall include the comments of the agencies on the plan. The Commission reserves the right to require modifications to the plan.

Article 406. The licensee, after consulting with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the Maine Department of Marine Resources, and the Maine Department of Environmental Protection, shall develop a plan, consistent with any prescription made by the Secretary of the Interior, for upstream and downstream fish passage that shall include, but shall not be limited to, the following: (1) functional design drawings of upstream fish passage facilities; (2) functional design drawings of downstream fish passage facilities, including intake screens and bypass facilities;

(3) a quantification of the flows required for operation of the upstream and downstream fish passage facilities; (4) a schedule for constructing, operating, and maintaining the facilities; (5) a description of a program for monitoring the effectiveness of the upstream and downstream passage facilities, including a schedule for implementing the monitoring program and for filing with the consulted agencies and with the Commission, the program results and any recommendations for modifying project facilities or operation; and (6) provisions for maintaining the collection of Atlantic salmon broodstock that shall include, but shall not be limited to, the modification and operation of existing fish collection facilities. The licensee shall file the plan for Commission approval within 1 year after the date of issuance of this license, and shall include documentation of consultation and the comments of the agencies on the plan. The Commission reserves the right to require changes to the plan. Within 6 months after completion of construction, the licensee shall file as-built drawings of the fish passage facilities.

Article 407. The licensee, before starting any land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in this license, shall consult with the Maine State Historic Preservation Officer (SHPO), and shall file with the Commission a cultural resources management plan, prepared by a qualified cultural resource specialist. If the licensee discovers previously unidentified archeological or historic properties during the course of constructing or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the properties, shall consult with the SHPO, and the licensee shall file with the Commission a cultural resource management plan, prepared by a qualified cultural resource specialist.

A cultural resources management plan shall include the following: (1) a description of each discovered property, indicating whether it is listed on or eligible to be listed on the National Register of Historic Places; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan.

The licensee shall not begin land-clearing or land-disturbing activities, other than those specifically authorized in this license, or resume such activities in the vicinity of a property discovered during construction, until informed that the requirements of this article have been fulfilled.

Article 408. The licensee, after consulting with the National Park Service, the Maine Bureau of Parks and Recreation, and the City of Ellsworth, shall prepare and file with the Commission for approval within 1 year from the date of issuance of this license, a revised Report on Recreational Resources that conforms to the requirements of the Commission's Regulations, 18 CFR at 4.51(f)(5). The Report shall include, but shall not be limited to, the following: (1) a description of existing and proposed recreational facilities; (2) identification of the entities responsible for constructing, operating, and maintaining any existing or proposed facilities; (3) maps or drawings showing the type and location of existing and proposed facilities at the project; (4) a map of land reserved for future recreational development; (5) a construction schedule, and (6) documentation of consultation with the agencies.

Article 409. (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 that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; 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 modification 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 submit a letter to the Director, Office of Hydropower Licensing, 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 paragraph (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.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is issued under authority delegated to the Director and is final unless appealed under Rule 1902 to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order. The licensee's failure to appeal this order shall constitute acceptance of the license.

Fred E. Springer

Fred E. Springer
Acting Director, Office of
Hydropower Licensing

ENVIRONMENTAL ASSESSMENT
DIVISION OF ENVIRONMENTAL ANALYSIS, OFFICE OF HYDROPOWER LICENSING
FEDERAL ENERGY REGULATORY COMMISSION

Ellsworth Project
FERC No. 2727-003, Maine
November 9, 1987

## I. APPLICATION

Bangor Hydro-Electric Company (applicant) applied on December 19, 1984, for a new license for the Ellsworth Hydroelectric Project. The applicant supplemented the application on July 1, 1985, and March 5, 1986.

The Ellsworth Project is located on the Union River in the city of Ellsworth and the towns of Mariaville, Waltham, and Otis, in Hancock County, Maine (figure 1). The Union River flows into the Union River Bay, approximately 2 miles downstream from the project. There are no lands of the United States located within the project boundary.

## II. RESOURCE DEVELOPMENT

### A. Purpose

The existing project provides an estimated average annual generation of 31,055,000 kilowatthours (kWh) of electrical energy. All the power produced by the project is supplied to the applicant's transmission and distribution system and is sold directly to the applicant's customers.

### B. Need for Power

The applicant requests a new license to continue operating the 8.9-megawatt (MW) project. The project is located in the fastest growing portion of the applicant's service area, and substantial load growth is expected to continue.

The applicant's need for continuing operation of the project, over both the short and long terms, is both economic and operational. From an economic point of view, no source of replacement power is available that is cost-competitive with the existing project, a hydroelectric facility for which original cost has been amortized, which has no fuel costs, and which has modest operating and maintenance costs. From an operational point of view, the project provides the high reliability associated with hydroelectric facilities, has "black start" capacity that is used to bring other sources on-line in the event of a system outage, provides approximately 9 MW of spinning reserve, and when its output is not on dispatch, is available as a support source while repairs are being made. Additionally, it is the opinion of the staff that 79 years of operation by and usefulness to the applicant give strong support to the applicant's need for the project and a new license.

## III. PROPOSED PROJECT AND ALTERNATIVES

### A. Proposed Project

#### 1. Project Description

The existing project consists of a lower dam with a small reservoir and an upper dam with a large storage reservoir (figure 2). The lower dam, known as the Ellsworth dam, forms the upper limit of tidal influence of the Union River. The Ellsworth dam is a concrete structure, 65 feet high and 377 feet long, a 275-foot-long section of which comprises a spillway. Flashboards, 27 inches in height, are installed on the spillway crest; the top of the flashboards is at elevation 66.7 feet mean sea level (msl). The reservoir impounded by the Ellsworth dam, called Lake Leonard, has a surface area of 90 acres at its normal maximum elevation of 66.7 feet msl. The Ellsworth powerhouse, which is integral with the dam, contains four generating units with a total capacity of 8.9 MW. No transmission lines are included within the project.

The Graham dam is about 4 miles upstream from the Ellsworth dam. The dam is about 25 feet high, and consists of an earth dike, about 550 feet long, and a concrete spillway, about 80 feet long. Three Taintor gates and a log sluice gate are located on the spillway. The upper reservoir, Graham Lake, has a normal maximum surface area of 9,025 acres and a maximum length of about 10 miles. There is no powerhouse associated with the dam and the lake.

The project is operated in peaking mode; no change in project operation is proposed, other than to maintain a seasonal minimum flow downstream from the project dams. The applicant currently has no plans for further development of the Ellsworth Project for power generation.

#### 2. Proposed Mitigative Measures

The applicant proposes to install downstream fish passage facilities at the Ellsworth dam and to assist the city of Ellsworth in developing a riverside park.

### B. Alternatives to the Proposed Project

The alternative to the proposed action is denial of a new license and cessation of project operation.

In the event of denial of a new license, the applicant estimates that the cost of replacement capacity and energy would be approximately $43,000,000 (in 1987 dollars) for the first 30 years of the new license period. This estimate includes the capital costs of existing and new combustion turbines and existing oil-fired steam plants. Also included in the estimate are fuel costs (principally for imported oil) and operating and maintenance costs.

Other alternative sources of replacement power are purchasing Canadian hydropower and obtaining power from available cogeneration or from other small-power producers at avoided-cost rates.

The applicant has expressed concern about the future costs and reliability of the available replacement power purchases from Canadian hydro or from sources that depend upon imported oil.

Except for Canadian hydro, alternative replacement power sources would consume nonrenewable energy resources, principally oil, and would produce additional atmospheric pollution.

Accepting the applicant's estimate of the 30-year cost of $43 million 1987 dollars for replacement power, the staff estimates that in 1987 dollars, the unit cost of replacement power for the year 1986 would have been $0.0415 per kWh. In 1986, the project produced 34,493,700 net kWh of electrical energy at a unit cost of $0.0101 per kWh.

## IV. CONSULTATION AND COMPLIANCE

### A. Agency Consultation

The Commission's regulations require prospective applicants to consult with appropriate resource agencies before filing an application for license. This constitutes an initial stage in compliance with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Prefiling consultation must be complete and must be documented in accordance with the Commission's regulations.

After the Commission accepts an application, concerned entities may submit formal comments during a public notice period. In addition, organizations and individuals may petition to intervene and to become a party to any subsequent proceedings. The Commission makes the comments provided by concerned entities part of the record and the staff considers the comments during the review of the proposed project. After the Commission issued a public notice of the application on December 16, 1985, the following entities commented on the application.

| Commenting entity | Date of letter |
|---|---|
| Maine Office of Energy Resources | January 9, 1986 |
| National Marine Fisheries Service | February 3, 1986 |
| Department of the Army, New England Division Corps of Engineers | February 10, 1986 |
| Maine Department of Marine Resources | February 13, 1986 |
| Environmental Protection Agency | March 12, 1986 |
| Department of the Interior | March 13, 1986 |

Permission to intervene was granted to the Maine Department of Environmental Protection (DEP). The applicant responded to the letters of comment on August 28, 1986.

B. Water Quality Certification

The applicant requested water quality certification for the Ellsworth Hydroelectric Project on November 13, 1984. Pursuant to Commission Order No. 464, DEP was notified that the certification requirements of section 401 (a)(1) of the Clean Water Act 1/ were waived for the project and on April 2, 1987, DEP was invited to submit comments and recommendations on water quality. DEP issued a water quality certification for the Ellsworth Project on April 22, 1987. This environmental assessment for the Ellsworth Project directly addresses the concerns of DEP and makes recommendations to protect water quality consistent with DEP's concerns.

DEP recommended inclusion of license provisions regarding recreation and fisheries resources. These recommendations are outside the scope of Commission Order No. 464 because they do not provide for the protection of water quality. The environmental assessment prepared for this project adequately addresses the resource issues raised by DEP.

V. ENVIRONMENTAL ANALYSIS

A. Proposed Project

The staff's analysis shows that adverse effects of the proposed project on visual and socioeconomic resources would be insignificant.

1. General Description of the Locale

The Union River Basin is characterized by numerous flat or gently rolling plains, a few high bedrock ridges and monadnocks, and a variety of lakes, ponds, and streams. Elevations in the basin range from sea level to a maximum of approximately 1,300 feet msl (Bangor Hydro-Electric Company, 1984, application, exhibit E).

Temperatures in the Union River Basin range from a mean minimum temperature in January of 14 degrees Fahrenheit (°F) to a mean maximum temperature in July of 70 °F. Prevailing westerly winds and cyclonic storms from the west and southwest bring most of the basin's precipitation. The average annual precipitation is about 43 inches. Precipitation is fairly uniform throughout the year, although coastal storms may bring periods of intense precipitation. In the coastal area, where the Ellsworth Project is located, the average annual snowfall is about 70 inches (Bangor Hydro-Electric Company, 1984, application, exhibit E).

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1/ 33 United States Code §1341(a)(1)(1982).

2. Geology and Soils

Affected Environment: The bedrock of the southern section of the Union River Basin consists of a wide zone of schist and gneiss intruded by great masses of granite. The overburden throughout the basin consists of glacial till aqueo-glacial outwash, and marine sediments. While the glacial till covers most of the bedrock in the region, extensive areas of till have in turn been buried by subsequent glacial outwash and marine materials. These materials, consisting of sand and gravel, form numerous and extensive outwash plains, deltas, kaines, and eskers. Many of the flat, swampy areas in the basin are largely the result of graded material washed out by the retreating glacier (Bangor Hydro-Electric Company, 1984, application, exhibit E).

Soils in the Union River Basin consist mainly of marine clays in the low-lying areas, with glacial tills above. The tills are of a coarse sandy or stony nature, are well to excessively drained, and contain hardpan about 2 to 3 feet below the surface. In the southern portion of the basin, these coarse acid tills originated from granite (Baum, 1982).

Environmental Impacts and Recommendations: Soils in the project area are highly erodible, and shoreline erosion was a problem around Graham Lake in the past, especially when the reservoir surface elevation was higher than 104 feet msl. In response to the concerns of owners of seasonal residences around Graham Lake, the applicant developed an operating rule curve (figure 3) that limited the normal maximum surface elevation to 104.2 feet msl. The applicant started operating Graham Lake according to this rule curve in 1980. DEP states that available evidence from the past 7 years indicates that the current mode of project operation is not resulting in unreasonable shoreline erosion.

To verify that project operation is not accelerating shoreline erosion, the licensee should conduct a study to determine the effectiveness of the water elevation management plan in controlling shoreline erosion.

Unavoidable Adverse Impacts: There would be minor, long-term erosion from wave and ice action on the shores of Graham Lake and its islands.

3. Water Resources

Affected Environment: The Union River, about 65 miles long, is located on the central Maine coast. The drainage area is about 546 square miles, and is bordered by coastal rivers and by the Gulf of Maine to the south, the Penobscot River basin to the west and north, and the Narraguagus River basin to the east.

The Ellsworth Project creates two impoundments on the Union River, Lake Leonard and Graham Lake. The Ellsworth dam, located on the mainstem near its tidal outlet, forms Lake Leonard, which has a surface area of about 90 acres at normal pool elevation (66.7 feet msl), a width of approximately 0.3 mile, and a maximum length of about 1.25 miles.

Graham dam impounds the Union River about 4 miles upstream of Ellsworth dam and creates Graham Lake, which has 9,025 surface acres at normal maximum surface elevation (104.2 feet msl), a maximum width of 2.75 miles, and a maximum length of approximately 10 miles. The Union River at Ellsworth dam has an average annual flow of 550 cubic feet per second (cfs).

Before 1986, minimum flows from Ellsworth dam and Graham dam consisted of leakage, estimated at 33 cfs and 22 cfs, respectively. In 1986, the applicant began releasing a continuous minimum flow of 105 cfs from each dam. The applicant currently operates the project as a peaking facility, depending on available inflows, and uses all available river flows 99 percent of the time. During the summer, the project operates for 2 to 4 hours a day; during the winter, about 6 to 8 hours a day; and during high-flow conditions (primarily in the spring and fall), up to 24 hours a day. Timed releases from Graham Lake are used at Ellsworth dam for power production. These releases result in minor (approximately 1 foot) surface elevation changes in Lake Leonard and greater changes (approximately 10 feet) in Graham Lake, as a result of operation within an operating rule curve established for Graham Lake.

Upstream from the Ellsworth Project, there are five retired, unlicensed hydroelectric projects and one operating, licensed project. The licensed project is the Green Lake Project, FERC No. 7189, which is located at the Green Lake National Fish Hatchery, on Reeds Brook between Green Lake and Graham Lake. (See figure 1.) Branch Lake, which is an impoundment of Branch Lake Stream, a tributary of Lake Leonard, provides water to the Ellsworth Water Company for domestic use (Bangor Hydro-Electric Company, 1984, application, exhibit E). Branch Lake has a usable storage capacity of 14,100 acre-feet (Federal Power Commission, 1965).

The water quality in the Union River in the project vicinity is good to poor. The water of Graham Lake and the water just below Graham dam, at Ellsworth Falls (a series of rapids, approximately midway between Ellsworth dam and Graham dam), meet the state's required class B-2 water quality standards. Class B-2 water is acceptable for recreational purposes, including water-contact recreation, for industrial and potable water supplies after adequate treatment, and for fish and wildlife habitat. The dissolved oxygen (DO) content must exceed 5 parts per million or 60 percent saturation, whichever is higher. From the area of the Union River below Ellsworth Falls to tidewater, water quality meets the

state's required class C standards. Class C water is acceptable for recreational boating and fishing, for fish and wildlife habitat, and for other uses, except potable water supplies and water-contact recreation. The DO content of class C water must not be less than 5 parts per million. Water in the Union River below tidewater meets the state's required class SB-1 standards, for which water must be suitable for all clean water uses, including water-contact recreation, harvesting and propagation of shellfish, and fish and wildlife habitat.

Environmental Impacts and Recommendations:

Shoreline Erosion and Reservoir Turbidity

Water level changes in the impoundments could cause shoreline erosion and property loss, and because of related suspended sediment increases, could result in adverse changes to water quality. DEP states that wave action and high water levels have resulted in significant shoreline erosion problems along Graham Lake. The applicant modified the Graham Lake operating rule curve by 1 foot (from a normal maximum surface elevation of 105.2 feet msl to 104.2 feet msl) in an effort to minimize the problem. DEP states that this limit on the surface elevation appears adequate for managing shoreline erosion, and recommends that the applicant maintain the Graham Lake surface elevation within 104.2 feet msl and 92.4 feet msl, according to the applicant's proposed operation curve. To minimize shoreline erosion and turbidity in Lake Leonard, DEP recommends that the applicant maintain the level of Lake Leonard within 1 foot of the crest of the Ellsworth dam flashboards; that is, between 65.7 feet msl and 66.7 feet msl.

If impoundment elevation is not managed properly, the increase in suspended sediment levels would adversely impact water quality in nearshore areas. The proposed water surface elevation limits and the proposed rule curve would minimize shoreline erosion and changes in water quality. To protect water quality in Graham Lake and in the Union River, the licensee should operate Graham Lake according to the licensee's proposed operating rule curve, between elevations 104.2 feet msl and 93.4 feet msl, to the maximum extent possible. For the protection of water quality in Lake Leonard, the licensee should also maintain the level of the lake within 1 foot of the flashboard crest elevation, between 66.7 and 65.7 feet, to the maximum extent possible. To ensure that the proposed operating rule curve would adequately protect the water quality of Graham Lake, the licensee should establish a monitoring program to verify that the proposed impoundment elevation limits provide adequate protection for shorelines and water quality.

Unavoidable Adverse Impacts: There would be some increase in suspended sediment from wave and ice action on shoreline areas.

4. Fishery Resources

Affected Environment: The Union River supports resident populations of warmwater and coldwater fish. Graham Lake has smallmouth bass (Micropterus dolomieui), chain pickerel (Esox niger), and white perch (Morone americana) populations, and occasional coldwater fish, including brown trout (Salmo trutta) and brook trout (Salvelinus fontinalis). The Union River between the Ellsworth and Graham dams has a variety of habitats, including riffles, runs, and pools, which primarily support smallmouth bass. Lake Leonard also has smallmouth bass, chain pickerel, and white perch. The river below the Ellsworth dam is tidal, and freshwater fish found there come from occasional movement from upstream populations of white perch, brown trout, and brook trout.

Before dams were constructed, the Union River supported runs of anadromous Atlantic salmon (Salmo salar), alewife (Alosa pseudoharengus), and American shad (A. sapidissima). The Union River is included in plans for restoration of Atlantic salmon to Maine (Beland, 1984). At present, the Atlantic Sea-Run Salmon Commission (ASRSC) manages the Union River to produce up to 250 adult salmon broodstock a year and to support a limited sport fishery below Ellsworth dam. ASRSC owns a fish-trapping facility at the base of Ellsworth dam. Adult salmon trapped at the facility are used as broodstock at the Green Lake and Craig Brook National Fish Hatcheries, which are operated by the U.S. Fish and Wildlife Service (FWS). The long-term goal of the ASRSC is to restore a self-sustaining run of salmon to the Union River, which has an estimated run potential of 1,000 adult salmon.

The Union River also currently supports a small alewife run. The run is a result of residual stocks from below Ellsworth dam, strays from tributary runs, and since 1933, fish trapped at Ellsworth and stocked in Graham and Leonard Lakes. The alewife population is currently harvested and managed by the city of Ellsworth, with the approval of the Maine Department of Marine Resources (DMR). The goal of DMR is full use of upstream habitat, which has the potential to produce an estimated 1 million pounds of fish a year.

Environmental Impacts and Recommendations:

Reservoir Fishery Resources

Operation of hydroelectric projects may cause changes in their associated impoundments that could adversely affect fish and wildlife resources in nearshore and shoreline areas. Depending on the time of year and the extent of the habitat affected, water-level fluctuations could have a significant adverse impact on fish resources through dessication, freezing, and increased turbidity in areas used by fish for cover, spawning, and rearing. DEP states that the surface area of Graham Lake varies by approximately 2,000 acres, when operated between the proposed elevations of 93.4 feet and 104.2 feet msl. The applicant states that there are no indications that present water level management is causing any problems

or limiting the smallmouth bass population. For the past 50 years, populations of sport fish in Graham and Leonard Lakes have been subject to water level management similar to that now proposed. During that time, resource agencies and the public have not raised concerns about the effects of water level fluctuations, and the available evidence suggests that the lakes support good sport fish populations. However, an opportunity exists for enhancement by minor alterations to the operating curve to further minimize impacts to fish resources, particularly during the spawning season. The licensee should monitor the effects of water level changes due to project operation on fish resources in Graham Lake, and if appropriate, adjust it for enhancement of the sport fishery.

Minimum Flow Releases

Minimum flow releases from the project dams are needed to maintain fish habitat, to facilitate anadromous fish migration, and to protect downstream water quality. The Department of the Interior (Interior) recommends that the applicant provide an instantaneous release from both dams of 105 cfs or the inflow to the project, whichever is less, based on the historical median August flow in the Union River at Ellsworth. DEP states that a minimum continuous flow release of 105 cfs at all times would minimize the chlorine residual toxicity from the city of Ellsworth's sewage effluent in the Union River below the Ellsworth dam. DEP and the National Marine Fisheries Service (NMFS) recommend that the applicant release from both dams an instantaneous flow of 105 cfs from July 1 through April 30 and 250 cfs from May 1 through June 30. DEP and NMFS also recommend that the applicant evaluate the adequacy of the minimum flow release of 250 cfs in maintaining anadromous fish resources and in the collection of salmon broodstock and after 5 years of implementation, if appropriate, revise the minimum flow releases. The applicant has proposed to release the minimum flows recommended by DEP and NMFS.

Historically, minimum flows from Ellsworth dam and Graham dam have consisted of uncontrolled leakage, estimated at 33 cfs and 22 cfs, respectively. Since July 30, 1986, the applicant has released a continuous minimum flow of 105 cfs from both dams. A minimum continuous flow of 105 cfs, the aquatic base flow (ABF), at all times below the Ellsworth and Graham dams would provide protection for fishery resources and maintain water quality.

During May and June, anadromous fish attempting to migrate up the Union River congregate below the Ellsworth dam. Both Atlantic salmon and alewives are present. Since salmon cannot be efficiently trapped until the alewife run is over, early-run salmon must remain below the dam. While salmon are holding below the dam, they would be vulnerable to fishing, especially at low flows, and may leave the river to seek alternative spawning habitat. At low flows, low oxygen concentrations would adversely affect holding fish during periods of low tide, high temperatures, particularly when a large run of alewives is present. A minimum continuous flow of 250 cfs exceeds twice the ABF and would provide

adequate cover and oxygen to protect anadromous fish. To protect fish resources in the Union River, the licensee should provide an instantaneous continuous release of 105 cfs from Ellsworth dam and from Graham dam from July 1 through April 30. To protect anadromous fish resources, the licensee should provide an instantaneous release of 250 cfs from both dams from May 1 through June 30. To ensure that such flows are appropriate, the licensee should monitor the effectiveness of these flows for the protection of fish resources, and if necessary, should provide recommendations to protect or to enhance those resources.

Fish Passage

The project dams currently block anadromous fish passage. An effort to restore anadromous fish is underway, supported by the trapping facility owned by ASRSC at the Ellsworth dam. The city of Ellsworth also employs the trap for commercial alewife harvest and its upstream stocking program.

NMFS states that the fish trapping facility at the Ellsworth dam is inadequate for anadromous fish passage, and that the facility should be modified to improve efficiency. Because large alewife runs collected at the trap may interfere with salmon collection, however, NMFS recommends that new upstream passage facilities be constructed at the Ellsworth Project to accommodate returning Atlantic salmon. Interior recommends that the applicant design, construct, operate, and maintain adequate upstream and downstream facilities for migratory fish. In a letter dated October 14, 1987, Interior, under section 18 of the Federal Power Act (Act), filed a "Reservation of Authority to Prescribe Fishways" at the Ellsworth Hydroelectric Project. 1/

DMR recommends that the existing fish trap facility be modified to improve trapping efficiency to obtain adult salmon and alewives for upriver stocking. DMR also recommends that in the event the city of Ellsworth does not continue to accept responsibility for stocking of alewives, the applicant should provide for upstream passage of alewives.

DEP recommends that the applicant modify the existing fish trap to accommodate projected annual runs of alewives and salmon and to provide for upstream stocking of alewives, should the city of Ellsworth discontinue its current stocking effort. DEP further recommends that the applicant provide upstream passage from the trapping facility for any adult salmon in excess of the 250 fish needed for hatchery broodstock.

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1/ Section 18 of the Act provides: "The Commission shall require the construction, maintenance, and operation by a licensee at its own expense of . . . such fishways as may be prescribed by the Secretary of Interior or the Secretary of Commerce as appropriate."

DEP recommends that the applicant provide downstream passage for salmon 30 months after at least 25 female and 12 male Atlantic salmon are stocked above Graham Lake. The applicant states that if the city of Ellsworth discontinues its stocking program, the applicant will modify the trapping facility to improve trap efficiency for upstream passage, provide for downstream alewife passage at the Ellsworth dam, and stock adult alewives in the project reservoirs.

The use of the existing fish trap below Ellsworth dam for alewife harvest and restoration stocking, while important for achieving ASRSC short-term management objectives, is inadequate for upstream anadromous fish passage. Modifying the trap could improve its efficiency in collecting adult salmon broodstock and alewives for upstream passage, but it would be at the expense of increased incompatibility with salmon collection as alewife run size increases. Also, as the long-term restoration goal of approximately 1,000 salmon is pursued, the usefulness of the trap in achieving this goal would decrease further. To protect and enhance anadromous fish resources in the Union River, the licensee, as prescribed by Interior and the Secretary of Commerce, should construct, operate, and maintain upstream and downstream fish passage facilities at the Ellsworth and Graham dams. For the protection of Atlantic salmon resources, the licensee should provide for the continued collection of salmon broodstock, and should monitor the effectiveness and efficiency of the facilities to ensure successful fish passage at the dams.

Unavoidable Adverse Impacts: During project operation, some injury and mortality to resident and anadromous fish could result from passage through the turbines.

5. Terrestrial Resources

Affected Environment: The plant associations of the project area are generally shown in figure 4. Lake Leonard is bordered on the east by a marsh. Typical wetland plant species are common cattail (Typha latifolia), arrowheads (Sagittaria spp.), sedges (Carex spp.), and softstem bulrush (Scirpus validus). The marsh is bordered by a forest composed of willows (Salix spp.), birches (Betula spp.), alders (Alnus spp.), and maples (Acer spp.). At higher elevations, the species composition of the forest is that of a mature white pine (Pinus strobus)-mixed hardwood forest. Typical hardwood species are red oak (Quercus rubra), white ash (Fraxinus americana), black ash (F. nigra), American beech (Fagus grandifolia), sugar maple (Acer saccharum), and paper birch (Betula papyrifera).

The banks on the west side of Lake Leonard are steeper and support a mixed pine-hardwood forest.

Marshes also occur along the eastern shore of Graham Lake. Typical wetland plant species are cattail, softstem bulrush, arrowhead, pickerelweed (Pontederia spp.), sedges, and meadowsweet spiraea

(Spiraea spp.). Timber was harvested recently on the east side of Graham Lake, and the area is now occupied by a transitional forest, composed of pioneer tree species, such as quaking aspen (Populus tremuloides), balsam poplar (Populus balsamifera), gray birch (Betula populifolia), and cherry (Prunus spp.).

Northwest of Graham Lake, barrens occur, surrounded by a mixed pine-hardwood forest. The barrens are areas where a thin layer of topsoil covers ledge and the vegetation consists of low-growing plants, such as grasses, blueberry (Vaccinium spp.), and common yarrow (Achillea millefolium). The barrens are fringed with aspens and poplars.

Boreal forest areas occur on the north end and on the east side of Graham Lake. Typical boreal forest tree species are tamarack larch (Larix laricina), northern white cedar (Thuja occidentalis), and black spruce (Picea mariana). Highbush blueberry (V. corymbosum) and sphagnum moss (Sphagnum spp.) are characteristic understory species.

The islands in Graham Lake comprise bog habitat. Black spruce and white pine are typical tree species found in this habitat. The understory contains shrubs, such as bog kalmia (Kalmia polifolia), and sedges. The islands are surrounded by emergent wetlands, composed of cattails, arrowhead, and pickerelweed.

Big game species occurring in the project area are black bear (Ursus americanus), moose (Alces alces), and white-tailed deer (Odocoileus virginianus). Other game species include American woodcock (Scolopax minor), ruffed grouse (Bonasa umbellus), Canada goose (Branta canadensis), green-winged teal (Anas crecca), blue-winged teal (A. discors), mallard (A. platyrhynchos), and American black duck (A. rubripes).

Environmental Impacts and Recommendations: Federal, state, and local agencies have not identified any adverse effect of project operation on botanical or wildlife resources, and the staff does not anticipate that relicense of the project would have any adverse effect. The measures that the staff recommends to protect anadromous and resident fish in the project area (section on fishery resources) would indirectly benefit wildlife species whose diets include fish. The release of the minimum flows recommended by the staff might benefit marsh habitat and associated wildlife downstream from Graham dam.

Unavoidable Adverse Impacts: None.

6. Threatened and Endangered Species

Affected Environment: Bald eagles (Haliaeetus leucocephalus), which are federally listed as endangered, have three nesting territories near the project, two of which are on Graham Lake. Eagles from these territories and transient eagles would be expected in

the project area. No other threatened or endangered species is known to occur in the project area.

Environmental Impacts and Recommendations: FWS states that it does not anticipate that continued project operation would affect bald eagles adversely (letter from Bruce Blanchard, Director, Office of Environmental Project Review, Department of the Interior, Washington, D.C., March 13, 1986). The staff agrees, because eagles nest on Graham Lake under existing conditions and issuance of a new license would not affect those conditions. The applicant proposes recreational development at Lake Leonard, but not at Graham Lake. (See the section on recreation and other land and water uses.) Therefore, there would be no loss of eagle habitat caused by land clearing for recreational facilities, and no disturbance of eagles because of noise and human activity. Further, the measures that the staff recommends to protect anadromous and resident fish in the project area (section on fishery resources) would indirectly benefit bald eagles, for whom fish are a major food source.

Unavoidable Adverse Impacts: None.

7. Cultural Resources

Affected Environment: The applicant has conducted a cultural resources survey of the project area and found no properties in the project area that are listed on or eligible for listing on the National Register of Historic Places (Bourque and Kopec, 1984). The Maine State Historic Preservation Officer (SHPO) has reviewed the results of the survey and agrees that continued project operation would not affect National Register listed or eligible properties (letter from Earle G. Shettleworth, Jr., State Historic Preservation Officer, Maine Historic Preservation Commission, Augusta, Maine, October 31, 1984). The results of the survey and of the SHPO's concurrence with the no-effect determination are based on the proposed method of operation described in the application for a new license and in the applicant's subsequent filings.

Environmental Impacts and Recommendations: The SHPO's comments on the proposed relicensing of the project contemplate that the project would be operated as described in the application without significant changes. Changes to the project are occasionally found to be necessary after a license has been issued, and may require an application to amend the license. Under these circumstances, whether or not an application for amendment of license is required, the survey results and the SHPO's comments would no longer reliably depict the cultural resources impacts that would result from continued project operation. Therefore, before beginning land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in the license and previously commented on by the SHPO, the licensee should consult with the SHPO about the need to conduct archeological or historical survey and to implement further avoidance or mitigative measures.

Also, land-clearing and land-disturbing activities could adversely affect archeological and historic properties not identified in the cultural resources survey. Therefore, if the licensee encounters such sites or properties during the development of project facilities, the licensee should stop land-clearing and land-disturbing activities in the vicinity of the sites or properties, should consult with the SHPO on the eligibility of the properties, and should carry out any necessary measures to avoid or to mitigate effects on the properties.

Sixty days before starting land-clearing or land-disturbing activities associated with any changes to the project, both proposed and necessitated, and 60 days before resuming land-clearing and land-disturbing activities in the vicinity of the sites or properties discovered, the licensee should file a plan and a schedule for conducting the appropriate studies, along with a copy of the SHPO's written comments on the plan and the schedule. The licensee should not start or resume land-clearing or land-disturbing activities, other than those specifically authorized in the license and commented on by the SHPO, or resume such activities in the vicinity of an archeological or historic property discovered during construction, until informed by the Commission that the requirements discussed above have been fulfilled.

Unavoidable Adverse Impacts: None.

8. Recreation and Other Land and Water Uses

Affected Environment: Land use around Lake Leonard is primarily undeveloped woodland interspersed with residences. Most of the residential development is on the east side of the Union River and Lake Leonard. Residential development is more pronounced downstream and upstream of the Ellsworth dam.

Land use around the much larger Graham Lake is primarily residential, with a large percentage being seasonal dwellings.

Outdoor recreational uses at Graham Lake include boating, fishing, swimming, and camping. The total annual recreational use is estimated at 5,000 visitors, with a peak day use of 100 visitors. Most of the recreational use at Graham Lake is from residents of private vacation camps located adjacent to the project. There is an existing public boat-launching ramp, developed by the applicant, on project land adjacent to Graham dam.

Environmental Impacts and Recommendations: Relicensing of the Ellsworth Project would not have any environmental impact on recreation and land and water uses.

Although no specific recreational needs have been identified, the applicant entered into a memorandum of understanding (MOU) with the city of Ellsworth in 1984 to assist in the development of a park adjacent to Lake Leonard and the Union River downstream from Ellsworth dam. Plans for the park include nature trails, picnic

areas, boat and canoe launch facilities, a boat dock, a swimming area, and parking areas. The MOU states that the applicant would grant easements to the city of Ellsworth for access across project lands to trails and boat-launching facilities the city plans to install on the east side of the river, and to a canoe-launching facility the city would install on the west side of the river, downstream from the powerhouse. The MOU also states that the applicant would provide the following recreational improvements: (1) a safety boom, upstream from Ellsworth dam; (2) a security gate at the boat-launching facility the city plans to build on Lake Leonard; (3) a security fence, 300 feet long, in the area of the east abutment of Ellsworth dam; and (4) a plaque explaining project operation.

Interior states that the park that the applicant and the city of Ellsworth would develop should be adequate for meeting present recreation needs. Interior recommends that the applicant complete the proposed facilities within 2 years from the date of issuance of a new license, should include within the project boundary all lands developed or proposed for recreational development, and should develop an operation and maintenance schedule or implement an agreement for operation and maintenance services. DEP recommends that the applicant develop a specific plan to provide recreational facilities in accordance with the MOU.

The Report on Recreational Resources does not include a schedule showing when the applicant proposes to complete construction of the safety boom, security gate and fence, and informational plaque. The MOU specifies that the applicant would construct the safety boom and security gate after the city of Ellsworth completes the planned trail and boat landing, and would construct the security fence after the city completes the trails. The staff concedes that it is sensible to tie the timetable to when other recreational development by the city necessitates the safety and security measures. The staff agrees with Interior, however, that the licensee should provide a schedule for installing the proposed facilities. If the licensee believes that the city may not develop the park in a timely fashion, and that consequently, a definite schedule cannot be formulated, the applicant should consider other recreational development that can be implemented independently of action by the city. Therefore, the licensee should file a revised Report on Recreational Resources, including a specific recreation plan, prepared in coordination with the city of Ellsworth, the National Park Service, and the Maine Bureau of Parks and Recreation. The plan should identify the entities responsible for constructing, operating, and maintaining any existing or proposed facilities and should include any agreements for operation and maintenance services.

Sheet 6 of exhibit G shows the existing Graham Lake boat-launching facility and some of the recreational facilities that the applicant and the city of Ellsworth would install along Lake Leonard. The drawing does not, however, distinguish between facilities the applicant proposes to install and the facilities the city plans to install. Also, the drawing does not show the safety boom, the

security gate, and the informational plaque, or the location of lands reserved for future recreational development, such as for the swimming area and boat dock. Therefore, the licensee should include in the revised Report on Recreational Resources maps or drawings clearly showing the design and location of all existing and proposed recreational facilities, and all lands reserved for future recreational development.

Unavoidable Adverse Impacts: None.

B. Alternative of No Action

Under the no-action alternative, electrical power that would be generated by the Ellsworth Project would have to be generated from other available sources or offset by conservation measures. The applicant also could not carry out its proposal to install fish passage facilities and a riverside park.

C. Recommended Alternative

The proposed project is preferred over the no-action alternative, because the purpose of the project can be achieved without significant environmental impacts.

## VI. FINDING OF NO SIGNIFICANT IMPACT

Continued operation of the project would result in some injury and mortality of resident and anadromous fish, caused by passage through the turbines. There would be minor, long-term erosion and turbidity from wave and ice action on the shores of Graham Lake.

This environmental assessment was prepared in accordance with the National Environmental Policy Act of 1969. On the basis of the staff's independent environmental analysis, issuance of a license for the Ellsworth Hydroelectric Project would not constitute a major federal action significantly affecting the quality of the human environment.

## VII. LITERATURE CITED

Bangor Hydro-Electric Company. 1984. Application for license for the Ellsworth Project, FERC No. 2727, Maine. Bangor, Maine.

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Beland, K.F. 1984. Management of Atlantic salmon in the state of Maine: a strategic plan. Maine Atlantic Sea-Run Salmon Commission. 71 pp.

Bourque, B.J., and D.R. Kopec. 1984. An evaluation of the dam pool impact on sites 58.1 and 58.10, Ellsworth, Maine. Maine State Museum. June 8, 1984. 40 pp.

Federal Power Commission. 1965. Planning status report: New England coastal areas. Washington, D.C. 12 pp.

## VIII. LIST OF PREPARERS

Dianne Rodman--EA Coordinator; Geology and Soils, Terrestrial Resources, and Threatened and Endangered Species (Ecologist; M.S., Biology).

Robert Kirby--Recreation (Environmental Protection Specialist; M.S., Geography, City and Regional Planning).

Frank Miller--Purpose, Need for Power, and Alternatives to the Proposed Project (Electrical Engineer; D.E., Electrical Engineering).

John Mitchell--EA Editor (Writer-editor; B.S., Social Sciences).

William Perry--Water and Fishery Resources (Fishery Biologist; Ph.D., Biology).

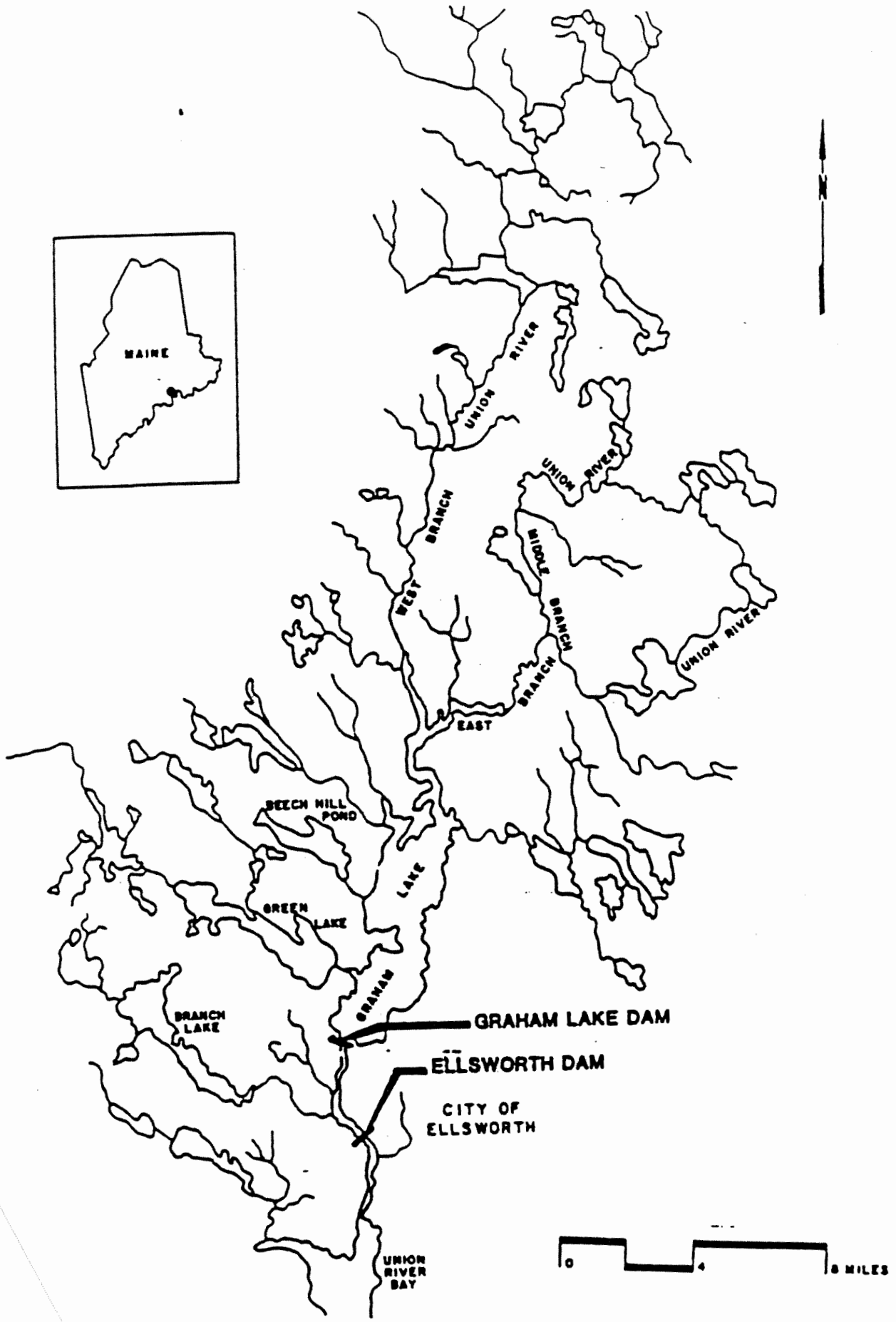


Figure 1. ocation of the Ellsworth Project, FERC No. 2727, ine (Source: the staff, modified from Bangor Hydro-ctric Company, 1984).

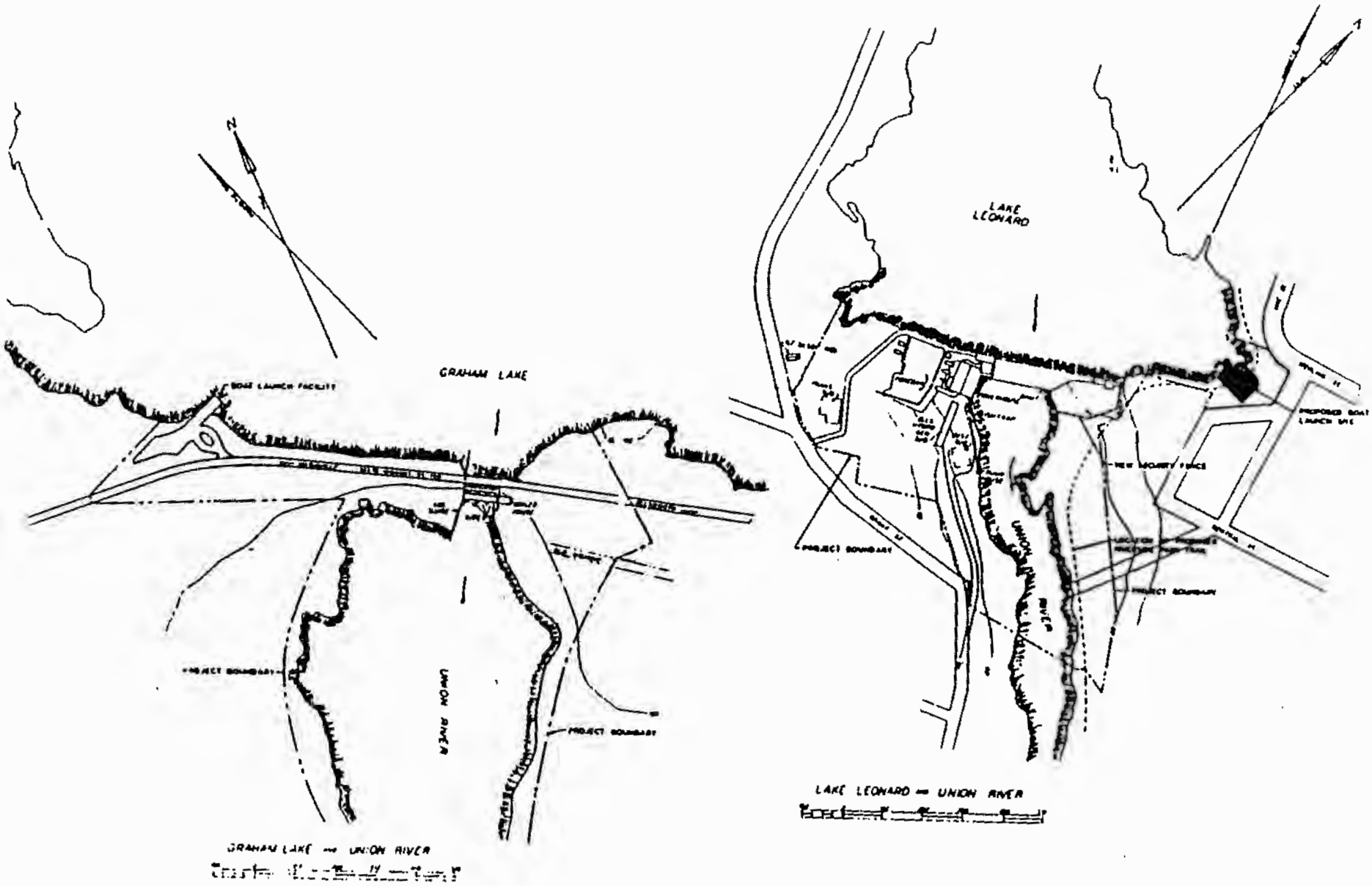


Figure 2. Features of the Ellsworth Project, FERC No. 2727, Maine (Source: the staff, modified from Bangor Hydro-Electric Company, 1984).

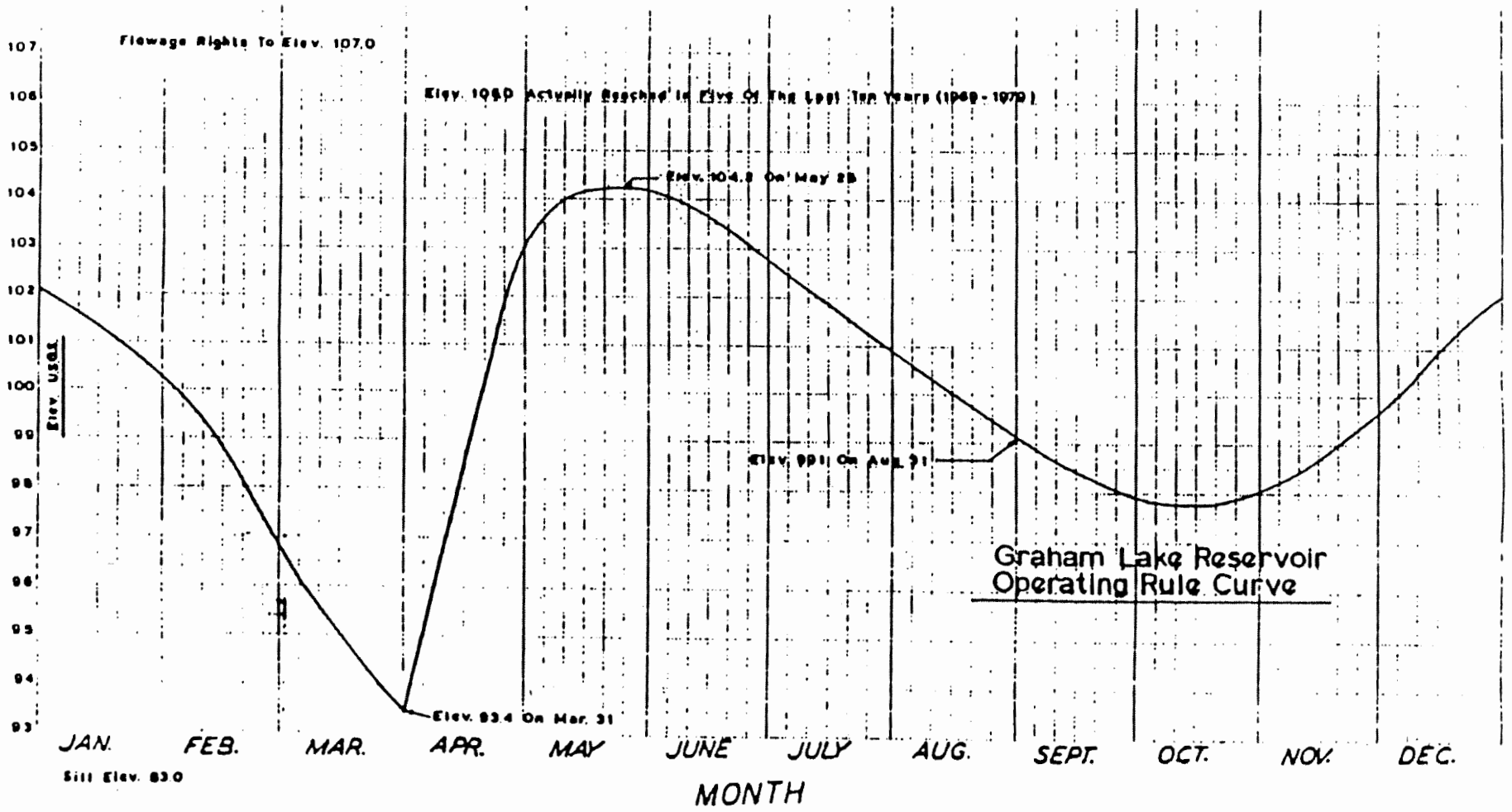


Figure 3. Proposed rule curve for operation of the Ellsworth Project, FERC No. 2727, Maine (Source: the staff, modified from Bangor Hydro-Electric Company, 1984).

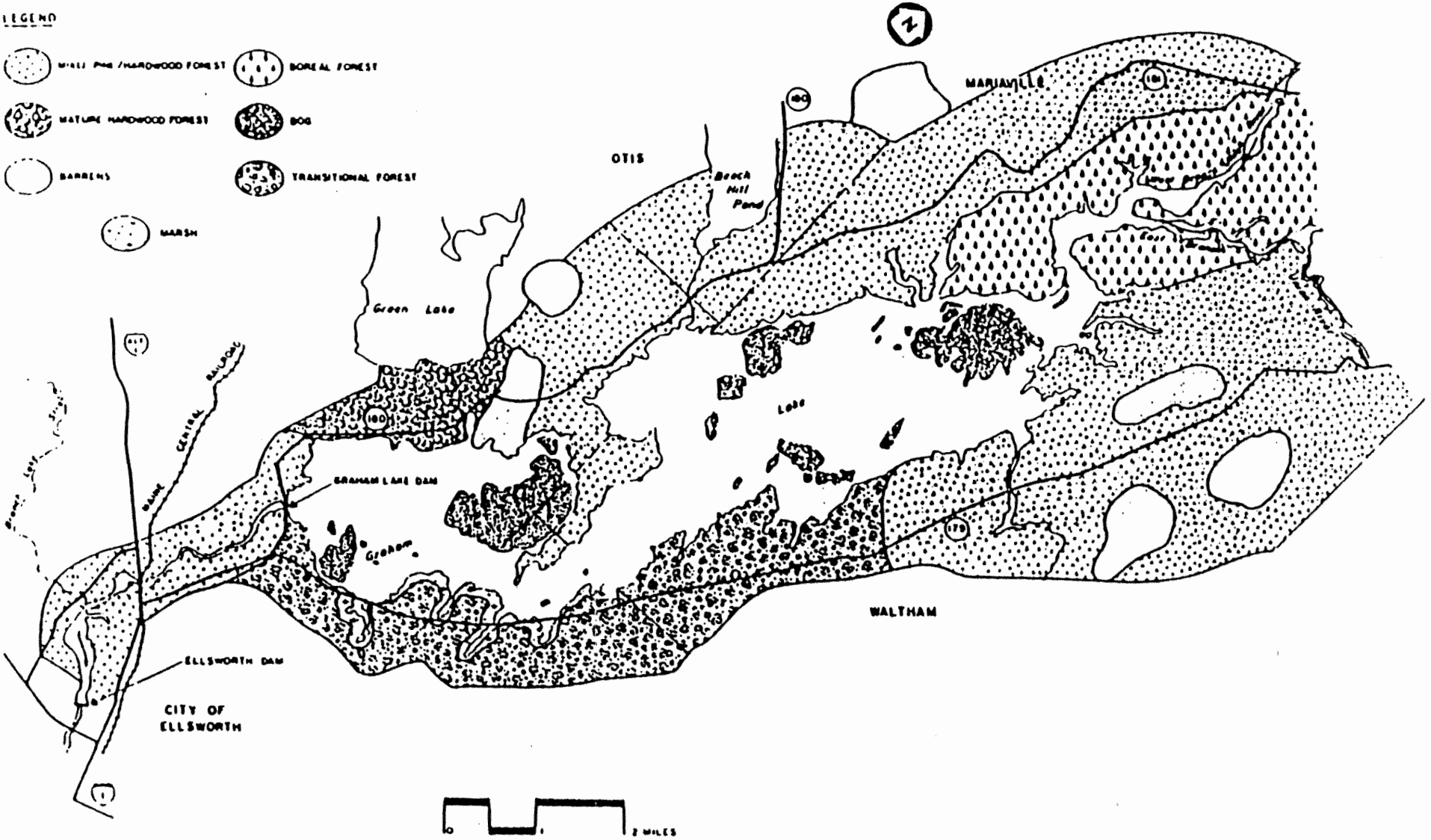


Figure 4. Vegetation types in the vicinity of the Ellsworth Project, FERC No. 2727, Maine (Source: the staff, modified from Bangor Hydro-Electric Company, 1984).

SAFETY AND DESIGN ASSESSMENT
ELLSWORTH HYDROELECTRIC PROJECT
FERC NO. 2727-003 - ME
(RELICENSING)

DAM SAFETY

The Ellsworth Hydroelectric Project is located on the Union River, in the City of Ellsworth, Hancock County, Maine.

The initial license was issued in 1977, with an effective date of January 1,1938 and expiration date of December 31, 1987. The Bangor Hydro-Electric Company (Bangor) filed the application for a new license for the continued operation of the project on December 19, 1984.

The Ellsworth Hydroelectric Plant and its two dams, the lower Ellsworth Dam and the upper Graham Dam, which are owned by the applicant, were inspected by the Commission's New York Regional Office (NYRO) on May 7, 1987. The Regional Director reported that both dams are classified as high hazard. The Ellsworth Dam is an Ambursen reinforced concrete dam, and would be overtopped by 19 feet of water during a Probable Maximum Flood (PMF) of 252,900 cfs. Field inspection and stability analysis made by the applicant indicates that the forebay wall would fail during the early stages of dam overtopping. The Graham Dam is an earthen structure, and would be overtopped by 8.5 feet of water during a PMF of 252,000 cfs. The applicant is assuming that the Graham Dam would also fail due to overtopping by the PMF.

The second consultant's safety inspection report filed on March 21, 1984, is currently under review by staff. Several questions regarding the safety of the project have been addressed. The consultant has determined that failure of Graham Lake Dam under PMF flows would not cause a hazard downstream. However, the appropriate inflow design flood for this development has not yet been determined. In addition, the consultant has identified the need for field explorations to define the embankment strength parameters. If the spillway of the Graham Lake Dam cannot accommodate the inflow design flood, or if revised stability analyses based on the actual embankment strength parameters indicate the embankment does not have adequate safety factors under all credible loading conditions, the licensee will be required to propose and construct appropriate remedial measures. With regard to Ellsworth Dam, the consultant determined that the forebay walls would be unstable if overtopped and recommended that the walls be post-tensioned. The post-tensioning proposal is considered acceptable and the final design and plans and specifications are forthcoming. With the resolution of these dam safety concerns and the implementation of the necessary remedial measures the project would continue to be safe and adequate.

The Regional Director also reported that the project's impoundment structures appear to be in fair condition.

The basic design of the project would remain unchanged.

WATER RESOURCE PLANNING

The project is operated as a peaking plant. The applicant does not plan to modify the existing project facilities or change the operation of the project.

There are no current contracts or constraints which affect the manner in which the project is operated. A minimum flow of 90 cfs is released from the project to dilute the discharge from the Ellsworth municipal waste water treatment plant. The leakage flow from the Ellsworth Dam is 33 cfs, and is 22 cfs from the Graham Dam.

The hydraulic capacity of 2,300 cfs corresponds to the flow equalled or exceeded 4% of the time on the flow duration curve for the Union River. No additional increase of capacity is planned.

No specific State or Federal agency comments or recommendations were made addressing flood control, navigation, water supply, or irrigation requirements in the basin.

The New England Coastal Area Planning Status Report includes no projects, either proposed or constructed on the Union River that this project would impact. The project would not conflict with any pending applications for exemption, license, or preliminary permit.

Based on the above, Staff concludes that the Ellsworth Project adequately utilizes the available flow and head at the site and would not conflict with any existing or planned water resource developments in the basin.

CONSUMPTION EFFICIENCY IMPROVEMENT PROGRAM - Section 10(a)(2)(C)

Bangor Hydro-Electric Company first formed its Energy Conservation Department in 1980; and in 1985 reorganized this Department as the Energy Management Department, with broadened responsiblities which included procedures and programs designed to reduce peak demands for capacity as well as end-use conservation of energy. The goal of the Energy Management Department is to maintain existing conservation programs while working to find ways to actively manage the electricity consumption patterns for the utility's customers. The objective of this effort is to make more efficient use of existing generating capacity, to reduce or eliminate the need to increase costly generating capacity, and improve the value of the product to the customer.

The applicant has on-going and planned programs which include a comprehensive list of those programs which have been found to be cost-effective by many utilities. Thirteen of the applicant's conservation and demand-reduction programs are described in applicant's response to staff request for information on Applicant's Electricity Consumption Efficiency Improvement Program. The response is entitled "Bangor Hydro-Electric Company Energy Management Report," and is dated April 1987.

Based on a review of the above cited Report and a review of Section 6 (at page 45) of the "Annual Report of the Maine Public Utilities Commission" (dated February 2, 1987), Staff concludes that the applicant has made an acceptable good-faith effort to conserve electric energy, reduce the demand for new generating capacity and to comply with the objectives of Section 10(a)(2)(C).

EXHIBITS

The following portion of Exhibit A and the following Exhibit F drawings should be included in the new license:

Exhibit A. Pages A-2, A-4 through A-6 and Appendix A-1 consisting of 15 pages from A-7 through A-21, describing the mechanical, electrical and transmission equipment filed December 19, 1984.

| Exhibit F Drawings | FERC No. 2727- | Description |
|---|---|---|
| 1 | 1 | Ellsworth Powerhouse and Dam Plan and Sections |
| 2 | 2 | Ellsworth Powerhouse and Dam Sections |
| 3 | 3 | Graham Lake Dam Plan and Sections |

Form L-3
(Revised October, 1975)

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, Federal Power 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.

UNITED STATES OF AMERICA 58 FERC 62, 014
FEDERAL ENERGY REGULATORY COMMISSION

Bangor Hydro-Electric Company Project No. 2727-024
Maine

ORDER AMENDING LICENSE
(ISSUED JANUARY 8, 1992)

On February 25, 1991, and amended on August 5, 1991, the licensee, Bangor Hydro-Electric Company, filed a request to revise the authorized project boundary of the Ellsworth Project, FERC No. 2727.

The licensee proposes to modify the authorized project boundary to include an additional 2 acres of land located downstream of the existing Graham Lake Dam. The change in the project boundary, which is shown on the revised exhibit G drawing filed on August 5, 1991, is necessary due to the required reconstruction of the Graham Lake Dam. The revised exhibit G drawing conforms to the Commission's rules and regulations.

Remedial repairs at the Graham Lake Dam are required to resolve instability problems in the western embankment and spillway section. The licensee proposes to extend the existing dam by constructing a concrete flood control structure along the downstream toe of the existing embankment and west of the existing gate structure. The proposed structure will act as an emergency spillway to back-up the existing unstable western embankment if the embankment is overtopped by flood waters in Graham Lake. The downstream extension would consist of a 300-foot-long overflow spillway, a 100 foot-long non-overflow spillway section, and a 450-foot-long embankment connecting the spillway to the west bank. The concrete flood control structure would be connected to the existing Graham Lake outlet gates by a wing wall extension and a permanent cofferdam cell, and to the existing embankment by an earthen berm and fill.

The licensee's construction of the proposed extension of Graham Lake Dam would require a 4.5-acre site (2.5 acres of land within the existing project boundary and 2 acres of adjacent private land) to accomodate the structure. The licensee's proposed project boundary revision would include the 2-acres of

private land. To accomplish the remedial repairs, the licensee also requires the temporary use of a construction laydown site, up to 11 acres in size. The licensee initially proposed to use a site adjacent to Graham Lake Dam, but is investigating other sites within a 2-mile radius of the dam. The temporary construction laydown site will not be incorporated into the project boundary.



Public notice of the filing was issued on March 22, 1991, with May 10, 1991, as the last day to file comments or motions to intervene. The U.S. Department of the Interior (Interior) and the Maine Historic Preservation Commission (SHPO) filed comments on May 17, 1991 and April 12, 1991, respectively. Kenneth J. LaFlamme and Corda W. LaFlamme (LaFlammes) filed a timely motion to intervene on May 9, 1991. No protests or other motions to intervene were filed in this proceeding.

Intervention

The LaFlammes intervened because of their concern that the Commission's action on the licensee's proposed project boundary amendment would directly affect their interests. The LaFlammes own the 2-acre area proposed for inclusion in the project boundary, and the adjacent land area proposed for a construction laydown site. Specifically, the LaFlammes indicate that if the amendment is necessary for public safety reasons and a loss of property to the project is inevitable, they wish the development to go forward with a loss of as little land as possible. They also state that the proposed structure should be designed and built to have the least effect on the surrounding environment. Further, the LaFlammes indicate that the taking of 14 acres of their land for construction laydown would have a severe adverse environmental impact, diminish the value of their remaining land, and is not essential but merely a convenience.1

The proposed remedial measures at Graham Lake Dam have been designed to limit the amount of additional land needed to the 2 acres proposed in this amendment. The licensee's proposed measures to restore the site following construction, and wetland mitigative measures being required herein, will minimize the environmental effects of constructing remedial measures. The proposed laydown site is no longer included in the amendment of project boundary.

1 The Laflamme's intervention states that the licensee needs 14 acres for construction related activities (i.e., a construction laydown site). The licensee, in its initial application filed on February 25, 1991, included an additional 14-acre adjacent area within its proposed revised project boundary. On August 5, 199l, the licensee amended its application to exclude the laydown site, and also revised the size of the laydown area to 11 acres. The laydown area is proposed to be located within 2 miles of the project site.



Summary of Findings

After considering the environmental information in the application for amendment of license, the staff's independent environmental assessment (EA)2, and other public comments, I find that issuance of this amendment is not a major federal action significantly affecting the quality of the human environment. The EA contains background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment.

The Director orders:

(A) The following exhibit G drawing is approved and made a part of the license.

| Exhibit | FERC No. | Title | Superseding |
|---|---|---|---|
| G-4 | 2727-23 | Project Boundary Map | 2727-21 |

(B) The superseded exhibit G drawing is eliminated from the license.

(C) The erosion and sedimentation control plan and measures for restoration of disturbed areas for the amendment of the Ellsworth Project, included in the licensee's filing dated September 26, 1991, are approved.

(D) The following article is added to and made a part of the project license:

Article 410. Within one year from the date of issuance of this order amending license, the licensee shall file with the Commission for approval, a wetlands mitigation plan to restore and replace wetland habitat disturbed and lost as a result of construction of the flood control structure.

The plan shall include, at a minimum:

(a) details of the final plan to restore and replace the wetlands affected by the project;

(b) a plan for monitoring the effectiveness of restoration and replacement measures, which

2 Environmental Assessment, Ellsworth Hydroelectric Project, Amendment of License, FERC Project No. 2727-024, Federal Energy Regulatory Commission, dated December 4, 1991. This document is available in the Commission's public files associated with this proceeding and is attached to this order.



include steps to be taken in the event the measures are not effective, such as, but not necessarily limited to, modifying the techniques used for restoration and replacement, or establishing or enhancing additional wetlands; and

(c) schedules for the proposed restoration and replacement of wetlands, for filing the results of the monitoring program, and for filing recommendations for alternative wetland mitigation.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and the Maine Department of Environmental Protection. The licensee shall include with the plan documentation of consultation with the agencies before preparing the plan, copies of agency comments or recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how all the agency comments were accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing plans with the Commission. If the

licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

(E) Within 90 days of the date of issuance of this order, the licensee shall file an original of the approved exhibit G drawing reproduced on silver or gelatin 35mm microfilm mounted on a Type D (3 1/4" x 7 3/8") aperture card. In addition, the licensee shall file two duplicate Diazo-type aperture cards. The original and one duplicate aperture card should be filed with the Secretary of the Commission. The remaining duplicate aperture card should be filed with Commission's New York Regional Office. The FERC drawing number (2727-23) shall be shown in the margin below the title block of the microfilmed drawing and also in the upper right corner of each aperture card. The top line(s) of the aperture cards shall show the FERC exhibit (e.g., F-1, G-1, L-1), Project Number, Drawing Title, and date of this order.



(F) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. 385.713.

J. Mark Robinson
Director, Division of Project
Compliance and Administration

ENVIRONMENTAL ASSESSMENT

APPLICATION FOR AMENDMENT OF LICENSE

Ellsworth Hydroelectric Project

FERC Project No. 2727-024

Maine

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Project Compliance and Administration
825 N. Capitol Street, NE
Washington, D.C. 20426

December 4, 1991

TABLE OF CONTENTS

# ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING
DIVISION OF PROJECT COMPLIANCE AND ADMINISTRATION

Project Name: Ellsworth Hydroelectric Project

FERC No. 2727-024

## A. APPLICATION

1. Application type: Amendment of License
2. Date filed: February 25, 1991; revised on August 5, 1991, and supplemented on September 26, 1991
3. Applicant: Bangor Hydro-Electric Company (licensee)
4. Water body: Union River
5. County and state: Hancock County, Maine

## B. PURPOSE AND NEED FOR ACTION

Field observations, investigative programs, and engineering analyses conducted at the Ellsworth Hydroelectric Project's Graham Lake Dam show that the western embankment and spillway have several instability problems. The spillway has inadequate capacity, could potentially liquefy during seismic loading, and has uncontrolled localized seepage at the downstream toe.

A report entitled "Inflow Flood Determination for Graham Dam" submitted to the Commission on November 30, 1989, indicated that a hypothetical breaching of the embankment structure at Graham Lake during the Probable Maximum Flood (PMF) event would pose a hazard to 110 structures in the downstream area.

Subsequent to the aforementioned investigations and determinations, the licensee developed remedial measures for the dam. The Commission, in a February 7, 1991 letter, directed the licensee to file an amendment of license to revise the project boundary to include the necessary land needed to undertake the remedial work on the dam. In response, the licensee submitted a February 25, 1991 filing showing a revision of the project boundary (i.e., revised exhibit G drawing) to add 16 acres to the project, 2 acres for a new dam site and 14 acres for a temporary construction laydown site.

At the request of the Commission in a letter dated July 12, 1991, the licensee on July 26, 1991 revised the project boundary to exclude the laydown area, since it did not conform to the



Commission's regulations 3 for lands to be included in the project boundary. The Commission also advised the licensee in the July 12, 1991 letter that it believed the 14-acre laydown area was excessive, and requested the licensee to file a report on the minimum area needed for construction laydown and to provide alternative laydown sites. The licensee responded that, until it could access the site to conduct soil/rock borings, it could not calculate the minimum size of the laydown area. The licensee believes, however, that a maximum of 11 acres would be needed. Further, the licensee was not able to locate any alternative laydown sites within the existing project boundary, and is investigating several parcels within a 2-mile radius of the dam site. However, no specific alternative sites have been identified.

## C. PROPOSED ACTION AND ALTERNATIVES

### 1. Description of the proposed action

The licensee proposes to extend the existing dam by constructing a concrete flood control structure along the downstream toe of the existing embankment and west of the existing gate structure. The proposed structure would function as an emergency spillway to back-up the existing unstable western embankment if overtopped by flood waters in Graham Lake. The

downstream extension would consist of an overflow spillway about 300 feet long, about a 100-foot-long non-overflow spillway section, and a 450-foot-long embankment connecting the spillway to the west bank. The concrete flood control structure would be connected to the existing Graham Lake outlet gates by a wing wall extension and a permanent cofferdam cell, and to the existing embankment by an earthen berm and fill.

Construction of the proposed structure would require about 4.5 acres plus a maximum of 11 acres adjacent to the site for a temporary construction laydown area. The 11-acre laydown site and 2 acres of the new dam site are privately owned by one individual. The remaining 2.5 acres of the dam site are on project lands.

Because of the opposition of the landowner to the use of its lands for the proposed development, the licensee has not been able to access the site to conduct soil and bedrock borings. The

3 The Commission regulations at 4.51(h)(2) of 18 C.F.R. states that "the boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources."



results of such explorations are needed to identify the depth to bedrock at the proposed construction site for determining the amount of spoil to remove and stockpile during construction. This information would dictate the exact size of the construction laydown area, which would vary from a minimum of about 8 acres to a maximum of 11 acres. Therefore, the worst-case scenario, that of an 11-acre site, will be evaluated.

Mitigation

In its September 26, 1991 filing, the licensee submitted a plan for erosion and sedimentation control and restoration of disturbed areas. The plan contains non-structural and structural measures to control erosion during the construction period, which is expected to take approximately one year. Measures to restore disturbed areas after construction are also described in the plan.

The licensee has minimized impacts on wetlands by designing the new structure to the minimum size allowable by federal safety standards and sound engineering practices. The wetlands impacted by the temporary cofferdam would be restored after completion of construction.

2. Alternatives to the proposed action

Licensee

Because of the landowner's opposition to the use of its land for the proposed construction laydown, the licensee has been investigating offsite parcels within a 2-mile radius of the proposed site. Although no specific alternative offsite parcels have been located, the licensee is expected to select a site similar to the proposed onsite parcel (i.e., an 8- to 10-acre, upland, nonforested site).

Agencies

In a letter dated May 13, 1991, the U.S. Department of the Interior (Interior) recommended that the licensee examine the alternative of replacing the existing dam in its present location, modifying the existing drawdown of Graham Lake, and permanently maintaining the lake at a lower level.

3. The no action alternative

The no action alternative is to retain the existing dam in its present unstable condition.

If proposed remedial measures are not implemented at Graham Lake Dam, the instability problems would persist and likely



increase. The dam could fail if subjected to high floods, which would pose a hazard to 110 structures located downstream. Failure of the dam would also dewater the 9,025-acre Graham Lake causing significant adverse environmental effects and loss of the project's electric power production. Because of safety and environmental problems posed by the instability of the dam, the no action alternative is not considered a reasonable alternative requiring further analysis.

D. CONSULTATION

After the Commission issued a public notice of the

application on March 22, 1991, the following entities commented on the application.

| Commenting entity | Date of letter |
|---|---|
| Maine Historic Preservation Commission | April 8, 1991 |
| U.S. Department of the Interior | May 13, 1991 |

Kenneth J. LaFlamme and Corda W. LaFlamme filed a motion to intervene dated May 6, 1991. The licensee responded to Interior's letter on June 18, 1991.

E. AFFECTED ENVIRONMENT

The licensee estimates that a maximum of 15.5 acres is needed for constructing the new flood control dam. The flood control dam would occupy about 4.5 acres, and the construction laydown area would require up to 11 acres. Construction and construction laydown are proposed in an area west of and adjacent to the existing Graham Lake Dam outlet works.

Bedrock in the project area consists of a wide zone of schist and gneiss intruded by great masses of granite. Soils consist mainly of clays in the low-lying areas and glacial tills in the upland areas.

The proposed construction site is characterized by about a 1-acre back water section of the Union River and about a 2-acre emergent wetland of sedges and grasses along the shoreline of the Union River, bordered by a narrow, shrub wetland of alder and willow. Emergent wetlands bordered by shrub wetlands are common along the eastern shorelines of Graham Lake and the downstream Leonard Lake. The construction site also includes about a 1.5-acre upland area of project lands characterized by an existing access road bordered by shrub and herbaceous vegetation. Most of the area being considered for construction laydown is an open



field vegetated by grasses, shrubs, and a few scattered trees. A wild blueberry field occurs along the eastern portion of the proposed construction laydown site.

Wildlife species of the area are generally those that occur in forest-edge and shrub-wetland type habitat. Typical species include the white-tailed deer, raccoon, red fox, and a variety of songbirds and amphibians.

The back water area is flooded during periods when water is released from Graham Dam for peaking operation, which occurs daily for 2 to 4 hours during the summer, 6 to 8 hours in winter, and up to 24 hours during high flows in the spring and fall. Because of the daily fluctuating water levels in the back water area, this area provides minimal habitat for aquatic biota, waterfowl, and shorebirds.

According to the Maine Historic Preservation Commission (SHPO) in an April 8, 1991 letter to the Commission, there are no known structures of historic or archeological significance within the project area. But because the project area has not been surveyed by a professional archaeologist, and the general topographic setting is likely to have attracted prehistoric settlement, the SHPO is recommending that an archeological survey be conducted.

Anadromous Fish

The Union River is included in plans for restoration of the Atlantic salmon under direction of the Atlantic Sea Run Salmon Commission (ASRSC). Until recently, the ASRSC managed the Union River with a goal to produce up to 250 adult salmon broodstock a year and to support a limited sport fishery below Ellsworth Dam. The ASRSC owns a fish-trapping facility at the base of Ellsworth Dam. Adult salmon trapped at the facility were used as broodstock at the Green Lake and Craig Brook National Fish Hatcheries. Because of the low rate of return of salmon at Ellsworth Dam and budget constraints, the ASRSC announced in September 1991 that it has discontinued active involvement in the Union River program.

The Maine Department of Marine Resources (DMR), the ASRSC, and the City of Ellsworth conduct an alewife trapping and trucking operation at the Ellsworth Project. Alewife are trapped below the Ellsworth Dam and trucked upstream to Graham Lake, the 9,025-acre impoundment formed by Graham Lake Dam. Graham Lake is located 4 miles upstream of Ellsworth Dam. Alewife produced in Graham Lake migrate downstream during May and June through the outlet gates at Graham Lake Dam, into Leonard Lake, the 125-acre lake formed by Ellsworth Dam, and through the outlet gates at Ellsworth Dam into the tidal portion of the Union River.



The DMR's goal is to maximize alewife production in Graham Lake to support a commercial harvest. During the 1980's, harvest

numbers below Ellsworth Dam ranged from a low of 4,700 in 1983 to a high of 1,026,200 in 1986. Numbers of trucked alewife ranged from a low of 4,560 in 1983 to a high of 22,200 in 1981.

Threatened and Endangered Species

Bald eagles, a federally listed endangered species, nest at two locations on Graham Lake, 3.5 and 6.5 miles from Graham Dam. During field investigations at Graham Lake and along the Union River from Graham Dam to the Union River estuary, eagles have been observed flying along the river, but not feeding. Eagles have been observed feeding in the estuary, about 4 miles downstream of the Graham Lake Dam. No observations of eagles feeding immediately below Graham Dam have been made.

F. ENVIRONMENTAL IMPACTS

The instream activities associated with installation and removal of cofferdams proposed for the construction of the new flood control structure would cause short-term turbidity in the Union River. Proposed construction would also cause the permanent removal of about 1.4 acres of wetlands, about 1 acre of intermittent back-water habitat, and 1.5 acres of predominately disturbed land.

Construction laydown of the area adjacent to the construction site would cause a minor short-term adverse effect on the limited vegetation and wildlife resources. Construction effects on alternative laydown sites are expected to be similar to those for the proposed site since similar sites (i.e., open fields with limited shrubs and trees) would likely be selected. The construction laydown site would be restored immediately following completion of construction. A minor short-term adverse visual effect on the area residents that use the adjacent state Route 180 for access would occur during construction.

G. ISSUES AND RECOMMENDATIONS

Alternatives to the proposed action

Interior, in a May 13, 1991 letter, comments that structural and operational alternatives to the proposed action should have been considered. Interior's suggested alternatives include replacing the existing dam in its present location; modifying the existing drawdown of Graham Lake; and permanently maintaining the lake at a lower level to increase the ability to capture runoff and prevent overtopping of the dam.

The licensee indicates that its final selection of remedial measures to upgrade the dam to safely pass the inflow design flood was based on a detailed comparison of various options. It maintains that its proposal was the best option for addressing the dam safety concerns. The licensee states that replacing the dam in its present location would have greater environmental effects and would cost over $3 million more than its proposal.

The licensee states that modifying the existing drawdown would provide additional reservoir capacity to accommodate smaller inflow events but not necessarily larger inflows that are likely to occur periodically at the project. Because the existing outlet gates allow limited discharge capacity, large inflow events would result in rapid filling of the lake, overtopping of the dam, and possible dam failure. The suggested changes to Graham Lake's operating mode would adversely impact the storage capacity of the lake, reducing the value of the project as a peaking source of energy to the licensee's system and customers.

The licensee's proposal to construct a flood control structure immediately downstream of the existing structure is environmentally, economically, and engineeringly superior to the alternative suggested by Interior. Replacing the existing dam at the present location has environmental impact at least as great as the licensee's proposal and would be significantly more costly. Modifying the existing drawdown of Graham Lake or permanently maintaining the lake at a lower level would not provide the necessary protection during high flows. Further, permanent maintenance of the lake at a lower level and the resultant reduction in project operation would be contrary to the finding in the project's license order of December 28, 1987 (41 FERC 62,304) that the project would be best adapted to comprehensive development of the waterway for beneficial public uses.

Fish Passage and Migration

Interior recommends that the Commission not take final action on the amendment until resolution of the fish passage plan required by article 406 of the license. Further, Interior suggests seasonal construction restrictions and other measures to limit erosion, sedimentation, and high levels of turbidity during peak periods of fish migration.

The licensee objects to Interior's recommendation to withhold action on the amendment pending resolution of the fish passage plan. Also, the licensee responds that construction work would not adversely affect downstream passage of alewives since alewives approach the Graham Lake Dam from upstream and construction activities would not affect waters upstream of the dam.

Implementation of remedial measures at the Graham Lake Dam would not preclude resolution of fish passage measures, if required. Any required fish passage facility would be installed at the existing outlet structure, which is separate from the proposed new facility. Further, by letter dated November 6, 1991, the Commission requested that the licensee revise its fish passage plan and schedule with consideration given to the subject amendment and recent fishery management developments in the basin with respect to Atlantic salmon. A response is due in May 1992. Although the fish passage plan has not been revised, implementation of proposed remedial measures with this amendment would not preclude the installation of fish passage facilities concurrent with construction of the new flood control structure or at a later date.

Construction of the proposed flood control structure would occur in the dry, generally precluding sedimentation and turbidity effects on Graham Lake and the downstream Union River. The construction site will be separated from the Union River by a series of temporary cofferdams to be installed along the western shore prior to construction. The cofferdams will consist of about 100 feet of braced sheetpile, 200 feet of sheetpile cells, and 400 feet of riprapped earthen embankment. The sheetpile cofferdams will extend downstream and parallel to the river to protect the construction site from the erosive flows downstream of the Graham Lake outlet gates. The sheetpile cofferdams will be constructed within the Union River; the riprapped embankment will be located partially in a backwater area of the Union River, and will connect the sheetpile cellular cofferdams to the above-water western shore at about the 90-foot mean sea level elevation. The embankment cofferdam will be riprapped to protect the cofferdam from up to a 10-year flood.

In addition to the cofferdams, a series of drainage control measures and sedimentation basins will be installed within the construction site to control seepage waters and rainfall. These facilities will be designed to handle the 10-year frequency, 24-hour duration storm. Sedimentation basins will be designed to provide an overall detention period of at least 24 hours, and will be equipped with an outlet pipe to discharge clarified water directly to the river.

While the proposed cofferdams would protect water quality during construction, installation and later removal of the

cofferdams, however, would increase turbidity levels in the Union River downstream of Graham Lake Dam. Adams and Fawcett (1989) found that migration of juvenile alewives occurs during periods of increased flow rates and relative decreases in water temperature and that increases in turbidity may act as a visual or chemical stimulus to initiate migratory activity. They also



found the majority of juveniles migrate prior to the end of July. While there is no information available relating turbidity levels with migratory behavior of juvenile alewives, it is not expected that short term turbidity spates that may result from cofferdam installation or removal would have a noticeable effect on outmigration of juvenile alewives in the short reach of the Union River below the construction site. The licensee's erosion and sedimentation control plan is adequate to minimize construction-related turbidity events and eliminate any possible effects toward outmigrating juvenile alewives.

Bald eagles

Interior comments that there is active bald eagle nesting on Graham Lake in the project area, and that bald eagles use the area below Graham Lake, particularly for feeding. Interior also states that project construction could affect eagles and that possible seasonal restrictions in construction activities may be needed to avoid adverse effects on eagles.

The licensee responds that the bald eagle nesting territory nearest to the project dam site is 3.5 miles away; a second nest is located 6.5 miles away. Further, the licensee states that a preliminary review by the Maine Department of Inland Fisheries (MDIF) did not identify the immediate Graham Lake Dam area as a feeding area for bald eagles. Eagles have been observed flying along the Union River below the dam, but not feeding. The only observed eagle feeding has been in the Union River estuary, several miles downstream of the dam.

The noise produced by equipment and other construction-related activities at the proposed development site adjacent to Graham Lake Dam would not have an adverse effect on bald eagles. The eagle nest, located 3.5 miles from the site, and eagle feeding area, located 4 miles downstream, are located at sufficient distances to protect the eagles from the effects of construction.

Wetlands

Interior states that the proposed development would cause the removal and disturbance of several acres of wetlands. Because of the wetland effects, Interior expressed concern that no precise calculation of loss had been made, and that mitigation had not been addressed. Further, Interior states that in order to satisfy the President's policy calling for "no net loss in wetlands", the U.S. Army Corps of Engineers and the Commission must strive to minimize impacts and provide full compensation for unavoidable losses.



The licensee responds that, although it has not been able to access the site, it has calculated from aerial photos that approximately 1.4 acres of wetlands would be permanently impacted, and another 1 acre would be temporarily impacted during construction. To minimize the amount of wetland removal, the licensee has reduced the size of the flood control structure and cofferdams to the extent allowable by federal safety standards and sound engineering practices. Further, the licensee proposes to restore the wetlands impacted by the cofferdam, but does not propose to develop final mitigation plans until after it obtains access to the area. The licensee does not propose additional mitigation of wetland impacts through compensation.

Wetlands provide habitat valuable to fish and wildlife resources. Impacts to wetlands should be avoided or minimized if possible, and unavoidable impacts mitigated. The licensee's attempts to minimize the removal of wetlands to the extent possible, and its proposal to restore impacted wetlands after completion of construction are acceptable. Although the licensee does not propose to compensate for the 1.4-acre loss of wetlands, the licensee should be required to compensate for the loss of this wetland area. The licensee should, therefore, develop a restoration and compensation plan to mitigate for impacts to wetlands from construction of the proposed flood control structure.

Archeological resources

The SHPO has recommended that the project area be surveyed by a professional archaeologist, since the area has not been surveyed and the topographic setting is likely to have attracted prehistoric settlement.

Article 407 of the license requires that the licensee, before starting any land-clearing or land-disturbing activities

within the project boundaries, other than those activities specifically authorized in the license, consult with the SHPO and file a cultural resources management plan, prepared by a qualified cultural resource specialist. In order to provide protection for any undiscovered archeological resources in the project area, the licensee should have the proposed construction site and laydown area surveyed by a professional archaeologist and should prepare a cultural resources management plan if significant archeological resources are found. Further, if any new historic or archeological properties are found during the course of construction, article 407 requires that the licensee stop all land-clearing and land-disturbing activities in the vicinity of the properties, consult with the SHPO, and file with the Commission a cultural resource management plan, prepared by a qualified cultural resource specialist.



## H. CONCLUSIONS

The licensee should be authorized to make the proposed remedial modifications to safeguard human life and property downstream of Graham Lake Dam. Approval of the proposed amendment, with the mitigative measures proposed by the licensee and staff, would not constitute a major federal action significantly affecting the quality of the human environment.

## I. LITERATURE CITED

Adams, D. and R. Fawcett. 1989. The timing of seaward migration by juvenile alewives (Alosa pseudoharengus) in coastal New Concord, NH.

Prepared by Patrick K. Murphy, Wildlife Biologist
Robert Grieve, Fishery Biologist

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Bangor Hydro-Electric Company ) Project No. 2727-057

ORDER AMENDING LICENSE

MAR 22 1999

On November 19,1998, Bangor Hydro-Electric Company (Bangor), licensee for the Ellsworth Project (FERC 2727) filed an application to amend its license. 1/ The Ellsworth Project is located on the Union River, in Hancock County, Maine.

BACKGROUND

Bangor filed the application to amend its license to correct the project description, revise exhibit A, and change the project boundary to exclude land underlying a substation not a part of the project.

Ordering paragraph (B)(2)(g) of the license states that the project has three 2.3/34.5-kV transformers. Page A-5 of exhibit A, approved as part of the license, states that the project includes three 3,333kVA, single phase 2.3kV to 34.5 kV transformers. The project actually has a single three-phase 2.3-kV to 34.5-kV transformer.

Bangor also requests that pages A-10 through A16 of exhibit A be deleted and that pages identified a A10R, A114, A12R and A13R of the application to amend, attachment H, be substitued for the deleted pages.

Also, Bangor proposes to modify the project boundary by removing part of the project land underlying a 34.5-kV substation on a hill to the southwest of the project's powerhouse.

REVIEW

The project description in ordering paragraph (B)(2)(g) will be revised to correct the description of the transformers. Page A-5 of exhibit A will be corrected to reflect the single, three phase transformer. Pages A-10 through A-16 will be deleted from exhibit A. Pages A-10R, A-11R, A-12R and A-13R of the amendment application, attachment H, describing the operating equipment for the project will be approved as part of the license.

---

1/ 41 FERC ¶62,304 Order Issuing New License issued December 28, 1987.

The licensee must file revised exhibit G drawings for approval showing the course and distance of the revised project boundary.

The Director orders:

(A) The license for the Howland Project, FERC Project No. 2721 is amended as described below effective the issuance date of this order.

(B) The project description given in ordering paragraph (B)(2) of the license is revised to read as follows:

> Project works consisting of (a) Graham Dam, an earthfill dam with concrete core walls, about 750 feet long and 30 feet high and having a gated concrete spillway; (b) Graham Lake, a reservoir extending approximately 15 miles above Graham Dam having a surface area of 12,200 acres at normal water surface elevation 104.2 feet U.S.G.S. datum; (c) Ellsworth Dam, a concrete buttress dam located about 4 miles downstream of Graham Dam, approximately 377 feet long and 60 feet highwith 26-inch-high flashboards on the spillway; (d) Lake Leonard, a forebay reservoir extending approximately 1 mile above Ellsworth Dam and having a surface area of 125 acres at normal water surface elevation 66.67 feet U.S.G.S. datum; (e) a reinforced concrete and concrete block masonry powerhouse containing one 2,500-kW generating unit, two 2,000-kW generating units, and one 2,400-kW generating unit; (f) the generator leads; (g) a three phase 10/11.2 MVA 2.3/34.5-kV step-up transformer; (h) the 34.5-kV transmission line connecting the step-up transformer to the 34.5-kV bus of the Ellsworth substation; and (i) appurtenant facilities.

(C) Pages A-10 through A16 of exhibit A are deleted and pages A-10R, A-11R, A-12R, and A-13R of the amendment application, attachment H, are approved as part of the license.

(D) Within 90 days of the date of this order the licensee shall file for Commission approval, revised exhibit G drawing(s) showing the revised project boundary, and describing the course and distance for the revision to project boundary.

(E) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.173.

J. Mark Robinson
Director
Division of Licensing and Compliance

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Bangor Hydro-Electric Company ) Project No. 2727-057

ERRATA NOTICE

ORDER AMENDING LICENSE
(Issued March 22, 1999)

The order amending license issued March 22,1999, in ordering paragraph (A) used the incorrect project name and number, Howland FERC Project No. 2721. This errata notice corrects ordering paragraph (A) to read:

"The license for the Ellsworth Project, FERC No. 2727 is amended as described below effective the issuance date of this order."

Joseph A. Morgan

J. Mark Robinson
Director
Division of Licensing and Compliance

9904130139-3

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Penobscot Hydro, LLC
PPL Maine, LLC

Project Nos. 2403-028, 2534-040
2666-016, 2710-022
2712-032, 2721-018
2727-067 & 10981-006

ORDER AMENDING LICENSES[1]

(Issued October 31, 2000)

Penobscot Hydro, LLC[2] has requested that its licenses for the Veazie Project, FERC No. 2403,[3] Milford Project, FERC No. 2534,[4] Midway Project, FERC No. 2666,[5] Orono Project, FERC No. 2710,[6] Stillwater Project, FERC No. 2712,[7] Howland Project FERC No.2721,[8] Ellsworth Project, FERC No. 2727,[9] and the Basin Mills Project, FERC No. 10981,[10] be amended to reflect its new name PPL Maine, LLC. The licensee

---

[1]To reflect new name of licensee.

[2]On April 1, 1999, the Commission issued an Order Approving Transfer of Licenses for seven hydroelectric projects from Bangor Hydro-Electric Company to Penobscot Hydro, LLC (87 FERC ¶ 62,001).

[3]83 FERC ¶ 61,040 (1998).

[4]83 FERC ¶ 61,037 (1998).

[5]6 FERC ¶ 61, 287 (1979).

[6]The Orono Project license expired on September 26, 1990. The relicense application for the Orono Project (part of the Basin Mills Project, FERC No. 10981 proposal) was issued on April 20, 1998 (83 FERC ¶ 61,039).

[7]83 FERC ¶ 61,038 (1998).

[8]12 FERC ¶ 62,207 (1980).

[9]41 FERC ¶ 62, 304 (1987).

[10]On April 20, 1998, the Commission issued an Order on Applications for New

(continued...)

001101-02903

states that there is no change in the legal entity that is the licensee, and this is a change in name only. Project Nos. 2403, 2534, 2710, and 2712 are located on the Penobscot River, in Penobscot County, Maine, between the towns of Veazie and Old Town. Project No. 2666 is located on the Penobscot and Stillwater Rivers in Penobscot County, Maine. Project No. 2721 is located on the Piscataquis River in Penobscot County, Maine. Project No. 2727 is located on the Union River in Hancock, Maine.

The name change does not affect the licensee's qualifications to be a licensee under the Federal Power Act. The request to approve a change in the name of the licensee will, therefore, be approved.

The Director orders:

(A) The licenses for the for the Veazie Project, FERC No. 2403, Milford Project, FERC No. 2534, Midway Project, FERC No. 2666, Orono Project, FERC No. 2710, Stillwater Project, FERC No. 2712, Howland Project, FERC No. 2721, and the Ellsworth Project, FERC No. 2727 are amended to change the licensee's name from Penobscot Hydro, LLC to PPL Maine, LLC.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

Peter J. McGovern
Division of Hydropower
Administration and Compliance

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[10](...continued)
and Original Licenses, which among other things, denied the license application of Bangor Hydro-Electric Company (Bangor) for the Basin Mills Project No. 10981 (83 FERC ¶ 61,039). Bangor filed for rehearing and also requested that Penobscot Hydro, LLC be substituted for Bangor in the rehearing proceeding. On June 9, 1998, the Commission issued an Order Granting Rehearing For Further Consideration (Unpublished). Subsequently, the licensee and other parties filed a joint request asking the Commission to delay issuing its order on rehearing until or after February 2, 2001. As the Commission has not acted on the substitution request for Basin Mills Project No. 10981, we cannot act on the amendment request as it relates to this project.

20020927-3042 Received by FERC OSEC 09/27/2002 in Docket#: P-2727-066

UNITED STATES OF AMERICA 100 FERC ¶ 62,209

FEDERAL ENERGY REGULATORY COMMISSION

PPL Maine, LLC Project No. 2727-066

# ORDER AMENDING LICENSE

(Issued September 27, 2002)

On August 7, 2000, PPL Maine, LLC (PPL Maine or licensee) and the U.S. Department of the Interior (Interior) jointly filed a Comprehensive Fishery Management Plan for the Union River Drainage (management plan). PPL Maine and Interior state that they are filing this plan pursuant to Article 406 of PPL Maine's license for the Ellsworth Project No. 2727, located on the Union River in Hancock County, Maine. The licensee and Interior request that the Commission rescind its 1994 approval of an earlier upstream fish passage plan filed pursuant to Article 406 and approve the management plan in its stead. They also request that the Commission delete the current Article 406 from the project license and substitute a new Article 406 requiring the licensee to comply with those provisions of the management plan that are applicable to it and reserving the Commission's authority to require future prescribed fishways.

Because the management plan represents the current approach for the management of fisheries, including fish passage, in the Union River, the licensee's responsibilities under the management plan now constitute a more appropriate response to fish passage needs at the project than do the requirements of Article 406. Accordingly, Article 406 will be modified to reflect the licensee's responsibilities specified in the management plan, as described below.

## BACKGROUND

The Ellsworth Project consists of an upper and a lower impoundment. Ellsworth Dam impounds Lake Leonard and, four miles upstream, Graham Dam impounds Graham Lake. There is a powerhouse at Ellsworth Dam.

In the early 1970's, a fish trap was constructed just below Ellsworth Dam. The trap was cooperatively funded by the U.S. Fish and Wildlife Service (FWS), the Maine Atlantic Sea run Salmon Commission, and Bangor Hydroelectric Company. The trap

was used to collect Atlantic salmon for brood stock and restoration stocking, and to collect alewives for harvest as lobster bait and transport of a spawning escapement to Graham Lake.[1]

On April 12, 1977, the Commission issued an initial license for the project to Bangor Hydro-Electric Company (Bangor).[2] In that license, the Commission required fish passage facilities at Graham Dam along with assurances that the fish trap at the Ellsworth Dam would remain operational. However, no fish passage facilities were constructed during the term of that license.

A new license for the project was issued on December 28, 1987.[3] Article 406 of the new license required Bangor to develop a plan and schedule for fish passage installation, consistent with any prescription made by the Secretary of the Interior pursuant to Section 18 of the Federal Power Act (FPA).[4] The plan was required to include functional design drawings, flow quantifications, construction and operation schedules, monitoring program descriptions, and provisions for maintaining the collection of Atlantic salmon broodstock, to include modifications to and operation of the existing fish collection facilities. However, by order issued July 29, 1988, the Director, Division of Project Compliance and Administration (Director) revised the article to permit modifications to the existing trap facility so that it could serve as an interim upstream passage facility for at least five years.[5]

On January 3, 1989, Bangor filed a plan and schedule under Article 406. The plan proposed extensive reliance on trap and truck operations, with fish passage facilities to

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[1]The trap is owned by the Maine Atlantic Salmon Commission (MASC), which has an access agreement with the licensee. The MASC leases harvest /operating rights to the City of Ellsworth.

[2] 58 FPC 212 (1977).

[3] 41 FERC ¶ 62,304 (1987).

[4]Under Section 18, the Commission must require the construction, operation, and maintenance of any fishways prescribed by the Secretaries of the Interior or Commerce. In an October 14, 1987 letter, Interior reserved its authority to prescribe fishways at the project. See 41 FERC at p. 63,751.

[5]44 FERC ¶ 62,080.

be constructed only as Atlantic salmon runs increased. In comments on the plan, Interior's Fish and Wildlife Service (FWS) stated that it could not support any plan which relied on the extended use of trap and truck operations instead of fishways at the two dams, and that its comments should be construed as an exercise of Interior's Section 18 prescription authority. In a November 6, 1991 letter, the Director required Bangor to modify its plan to reflect a recent fishery management decision to discontinue the Union River salmon program and Interior's insistence that fish passage facilities be constructed regardless of whether salmon runs reached the levels specified in the plan.

On May 4, 1992, Bangor filed a revised plan, which, however, again proposed to delay the construction of upstream fish passage facilities until certain specified salmon runs were achieved. Bangor also indicated that, in 1989, it had constructed downstream fish passage facilities at Ellsworth Dam. Noting that the revised plan still failed to conform to Interior's prescription, which the Commission was required to respect, the Director, in a February 16, 1994 order, modified the plan to require the filing of detailed design drawings for proposed fish passage facilities at Ellsworth and Graham Dams and a schedule for their installation, in conformance with Interior's prescription, and pursuant to Article 406. The Director approved the plan with these modifications.[6]

The Commission denied rehearing of the Director's order,[7] and Bangor submitted the required design drawings and construction schedules, which the Director approved.[8] However, Bangor also petitioned the U.S. Court of Appeals for the District of Columbia for review of the Director's order modifying and approving the fish passage plan and the Commission's order on rehearing. On Bangor's request, the Commission stayed, pending completion of the court proceedings, the requirement that Bangor proceed with the

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[6] 66 FERC ¶ 62,079 (1994). The Director also required Bangor to file drawings of the downstream passage facilities at Ellsworth Dam, since those facilities had yet to be approved by the Commission as part of the overall fish passage plan. 66 FERC at pp. 64,255-56.

[7] 70 FERC ¶ 61,078 (1995).

[8] 70 FERC ¶ 62,043 (1995).

installation of the fish passage facilities in accordance with the approved schedules.[9] On March 15, 1996, in Bangor Hydro-Electric Company v. FERC, the court of appeals found that Interior had not provided reasonable support for its fishway prescription and vacated the Commission's orders requiring compliance with the prescription.[10]

After the court decision, Bangor, FWS, state fishery agencies, and other interested entities (collectively the Union River Stakeholder Group (stakeholders))[11] began discussions to resolve the upstream fish passage issues at the project and to manage the fishery resources in the Union River drainage. After the license was transferred to PPL Maine, PPL Maine replaced Bangor as a participant.[12] Those discussions resulted in the management plan, as described below.

THE MANAGEMENT PLAN

It was the intention of the stakeholders, in developing the management plan, to develop a comprehensive, biologically-based plan to support future decisions on fishery management in the Union River, including a commitment to install permanent fish passage facilities at the Ellsworth Project. The stakeholders agreed that the management plan would identify agency goals for diadromous and resident fisheries populations, would describe the various tasks and responsibilities related to the restoration and management of those fisheries resources, and would serve as the basis for decisions on long-term fish passage measures at the project.

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[9] 70 FERC ¶ 61,216 (1995).

[10] 78 F.3d 659 (D.C. Cir. 1996).

[11] Stakeholders include PPL Maine, FWS, Maine Department of Marine Resources, Maine Department of Inland Fisheries and Wildlife, Maine Atlantic Salmon Commission, City of Ellsworth, Maine Council of the Atlantic Salmon Federation, Union Salmon Association, and (unspecified) interested members of the public.

[12] In April 1999, the Commission issued an order approving the transfer of the project license from Bangor to Penobscot Hydro, LLC (87 FERC ¶ 62,001), now PPL Maine, LLC (93 FERC.¶ 62,076).

The management plan consists of a description of the Union River drainage, its fishery resources, the status of its diadromous and resident fish populations, management goals and objectives for the drainage, and recommended measures and activities to be implemented by a Union River Fisheries Coordinating Committee (URFCC). The management plan identifies issues that must be addressed through studies and other activities, including potential conflicts between restored and resident fish populations, in order to accomplish identified management objectives. The management plan initially focuses on fish restoration for the period 2000-2005, with the understanding it will be reviewed and adjusted annually.

The management plan's overall goal is to manage all sport and commercial fish species in the Union River drainage for optimum habitat utilization, abundance, and public benefit. To accomplish this, the stakeholders divided the watershed into six subdivisions and developed objectives for each subdivision. For the initial 2000-2005 period, the management plan focuses on the development of self-sustaining runs of river herring (alewife and blueback herring) and Atlantic salmon above Ellsworth Dam. Returning adults will be collected and transported into suitable habitat along with stocking of juvenile, hatchery-reared salmon. The optimum river herring escapement at the project, the locations, quantity, quality, and accessibility of Atlantic salmon habitat, and the effectiveness of the existing interim upstream fish passage measures (that is, the trap and truck operation) at the project in accommodating current and projected fish runs, including American eels, will be determined.

Actual studies and activities are proposed to be carried out by the licensee, the FWS, and the Maine state fishery agencies under the supervision of the URFCC. The licensee will be responsible for convening the URFCC, running its meetings, and preparing its reports. In addition, the licensee will be responsible for operating the existing upstream fish passage facilities at the project and providing the resources to achieve an initial annual escapement of 100,000 alewife spawning escapement into Graham Lake. The licensee will also continue to operate existing downstream fish passage facilities.

The management plan is proposed to serve as the interim fish passage plan at the project until sufficient information is developed from the studies and activities outlined in the management plan to allow for resolution of the issue of permanent upstream fish passage measures at the project.

DISCUSSION

From the time of the issuance of the new license through the Bangor court decision, efforts to implement fish passage at the project pursuant to Article 406 have been marked by the disagreement between the licensee and Interior about the need for, and the timing of the installation of, upstream fish passage facilities of a permanent nature. The licensee's position has been, essentially, that runs of Atlantic salmon and alewives in the Union River have not yet developed to the point that trap and truck operations are insufficient, and that it should not have to undergo the significant expenditures that would be required to install permanent fishways before a need for such facilities is shown. Interior has insisted on limited reliance on trap and truck and on the earlier construction of fishways.

The management plan resolves that disagreement, in that it provides for the operation of existing fish passage facilities and measures until studies conducted under the management plan determine the need for permanent fish passage facilities. The management plan indeed goes beyond the specific issue of fishway types and construction timing by addressing overall fisheries management in the basin. Among other things, the management plan will provide an increase in the escapement of alewives to Graham Lake, an evaluation of the efficacy of achieving restoration goals using a stocking rate of 100,000 alewives, and an assessment of whether there are conflicts between the numbers of alewives stocked in Graham Lake and the lake's smallmouth bass fishery. In addition, the management plan addresses restoration of Atlantic salmon, blueback herring, American eel, and other migratory fishes, interim and permanent fish passage, and management strategies for resident fishes throughout the Union River basin. In light of the management plan's potential for resolving fish passage and management issues, as well as the long-standing dispute between the licensee and Interior, it would be in the public interest to require the licensee's adherence to the pertinent provisions of the management plan.

The licensee and Interior request rescission of the Director's approval of the 1992 plan filed under Article 406. Because the court in Bangor vacated the Director's order modifying and approving the plan, and the Commission order affirming it, no further action with regard to that plan is necessary. The licensee and Interior request that the management plan be approved in lieu of the 1992 plan. The management plan encompasses fishery management directives for areas outside the project and establishes responsibilities of entities other than the licensee. Because the Commission cannot

require actions by any other such entities, approval of the entire management plan goes beyond the scope of the Commission's authority.

Nevertheless, it is possible to accomplish essentially what the licensee and Interior seek. They request that present Article 406 be replaced by a new Article 406 that requires the licensee to comply with the provisions of the management plan that are applicable to it. Since Article 406, as now worded, requires the filing of functional design drawings, construction schedules, and monitoring plans for fish passage facilities whose construction the licensee and Interior now agree should be deferred, the present Article 406 requirements do not reflect the revised approach to managing the Union River fishery, as determined by the fishery agencies in the management plan. Therefore, replacement of the existing Article 406 by a new article as described by the licensee and Interior would reflect the changed fishery goals and would be an appropriate method of implementing the licensee-related provisions of the management plan.

The parties request that the new Article 406 require the licensee to comply with the directions of the URFCC pertaining to fish passage measures at the project, to the extent that such compliance would not be inconsistent with the requirements of the FPA and the rules, regulations, and orders of the Commission. Article 406 will require the licensee to comply with these directions, as requested, but any directions to construct or install new project fish passage facilities would necessitate an application to amend the license.[13] To avoid uncertainty about the scope of the licensee's responsibilities under the revised article, the article will, insofar as practical, specify those particular responsibilities of the licensee that are set out in the management plan. This will include a requirement to maintain and continue operating existing upstream and downstream fish passage facilities or measures at the project.

The parties request that the Commission reserve its authority to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such upstream fishways as the Secretary of the Interior might prescribe under Section 18 of the FPA. The right of Interior to prescribe fishways in the future was, in effect, observed in Article 406 through the article's requirement that the

[13]Since requiring such compliance cannot be construed as authorizing actions that would be inconsistent with the FPA, Commission regulations, or other Commission requirements, there is no need to specify this reservation in the revised article.

licensee's fish passage plan be consistent with any prescription made by Interior. Moreover, the understanding that the present fish passage measures at the project are only interim measures and that circumstances might eventually require the substitution of permanent upstream fishways is central to the management plan to which the licensee and Interior have agreed. Therefore, the revised Article 406 will reserve the Commission's authority to require fishways in the future.

The Director orders:

(A) Article 406 of the license for the Ellsworth Project is revised to read:

The licensee shall comply with those provisions of the Comprehensive Fishery Management Plan for the Union River Drainage (Plan), prepared by the Union River Stakeholder Group and filed with the Commission on August 7, 2000, that pertain to the restoration of anadromous and catadromous fishes and their effects on resident fishes within the lower reaches of the Union River up to, and including Graham Lake and its environs during the five-year period, 2000-2005. The provisions shall include, but not be limited to: (1) evaluating impacts of stocking 100,000 alewives in Graham Lake on smallmouth bass; (2) determining annual alewife escapement needed at the Ellsworth Dam to achieve stated restoration goals for the Union River; (3) collecting and updating information on anadromous Atlantic salmon habitat in the Union River drainage; and (4) evaluating upstream and downstream fish passage needs at the Ellsworth Project and determining the need for additional fish passage for American eel.

During the period, 2000-2005, the licensee shall be responsible for convening the Union River Fisheries Coordinating Committee (URFCC), as identified in the Plan, running its meetings and preparing its reports. The licensee shall comply with the directions of the URFCC as to fish passage measures at the project and shall file an application for amendment of this license when those directions require the construction or installation of additional fish passage facilities. The licensee shall be responsible for operating the existing upstream and downstream fish passage facilities at the project in accordance with the provisions of the Plan and providing the resources to achieve an initial annual spawning escapement of 100,000 alewife into Graham Lake.

Because the Plan is proposed to serve as the interim fish passage plan at the project until sufficient information is developed from the studies and activities outlined in the Plan to allow for resolution of the issue of permanent upstream fish passage measures at the project, the licensee shall also be responsible for providing to the Commission annual reports on the progress towards those goals and for resolution of the permanent fish passage issue at the project. The licensee shall file annual progress reports by March 1 of 2003, 2004, and 2005, with a final report due by March 1, 2006. Each report shall outline progress towards meeting

the goals of the management measures implemented the previous year and proposed activities for the following year. The final report shall contain management measures and activities proposed under the Plan for the following 5-year period.

The Commission reserves the right to require changes to the licensee's responsibilities under the Plan as appropriate after review of each of the annual progress reports or the final progress report, to include the operational schedule and handling protocol for fish trapping at the project.

Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways, as may be prescribed by the Secretary of the Interior under Section 18 of the Federal Power Act.

(B) The licensee shall file an original and eight copies of any filing required by this order with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DHAC, PJ-12.3
888 First Street, N.E.
Washington, D.C. 20426

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

George H. Taylor
Chief, Biological Resources Branch
Division of Hydropower Administration
and Compliance

128 FERC ¶ 62,212
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PPL Maine, LLC
Black Bear Hydro Partners, LLC

Project Nos. 2727-085
2666-032
2534-091
2710-053
2712-072

# ORDER APPROVING TRANSFER OF LICENSE

(Issued September 17, 2009)

1. By application filed July 24, 2009, PPL Maine, LLC (transferor) and Black Bear Hydro Partners, LLC (transferee) seek Commission approval to transfer the licenses for the Ellsworth Project No. 2727, the Medway Project No. 2666, the Milford Project No. 2534, the Orono Project No. 2710, and the Stillwater Project No. 2712, from transferor to transferee. The Ellsworth Project is located on the Union River near the city of Ellsworth. The Medway Project is located on the West Branch Penobscot River near the city of Medway. The Milford Project is located on the Penobscot River near the city of Old Town. The Orono and Stillwater Projects are located on the Stillwater Branch of the Penobscot River near the city of Orono. The Ellsworth Project is located in Hancock County, Maine and all other projects included in this application are located in Penobscot County, Maine.

2. Public notice of the application was issued on August 5, 2009, setting September 4, 2009, as the deadline for filing comments, protests, and motions to intervene. No comments, protests, or motions to intervene were filed.

3. Transferee has agreed to accept all of the terms and conditions of the licenses and to be bound by the licenses as if it were the original licensee.

4. Transferor has generally complied with the terms and conditions of the license and agrees to pay annual charges that have accrued to the date of the transfer. Transferee will be required to comply with the requirements of the license as though it were the original licensee. Transfer of the licenses for these projects is consistent with the Commission's regulations and is in the public interest.

The Director orders:

(A) Transfer of the licenses for the Ellsworth Project No. 2727, the Medway Project No. 2666, the Milford Project No. 2534, the Orono Project No. 2710, and the

Stillwater Project No. 2712 from PPL Maine, LLC to Black Bear Hydro Partners, LLC is approved.

(B) PPL Maine, LLC shall pay all annual charges that accrue up to the effective date of the transfer.

(C) Approval of the transfer is contingent upon: (1) transfer of title of the properties under license and delivery of all license instruments to Black Bear Hydro Partners, LLC, which shall be subject to the terms and conditions of the license as though it were the original licensee; and (2) Black Bear Hydro Partners, LLC acknowledging acceptance of this order and its terms and conditions by signing and returning the attached acceptance sheet. Within 60 days from the date of this order, the transferee shall submit certified copies of all instruments of conveyance and the signed acceptance sheet.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR §385.713.

M. Joseph Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this order, _____ this _____ day of _____, 20___, has caused its corporate name to be signed hereto by _____ _____, its President, and its corporate seal to be affixed hereto and attested by _____ its Secretary, pursuant to a resolution of its Board of Directors duly adopted on the _____ day of _____, 20____, a certified copy of the record of which is attached hereto.

By_____

Attest:

_____
Secretary
(Executed in quadruplicate)

Document Content(s)