

86 FERC ¶ 62,242

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Bangor Hydroelectric Company) Project No. 2666-007

ORDER ISSUING NEW LICENSE

(Issued March 29, 1999)

On March 28, 1997, Bangor Hydro-Electric Company (Bangor Hydro) filed an application, pursuant to Sections 4(e) and 15 of the Federal Power Act (FPA), 1/ for a new license authorizing the continued operation and maintenance of the 3.44-megawatt (MW) Medway Hydroelectric Project No. 2666 (Medway Project or project), located on the West Branch Penobscot River, in the town of Medway, Penobscot County, Maine. 2/ The project does not occupy any federal lands. On November 19, 1998, Bangor Hydro filed for an amendment to its existing license to correct descriptions of project works 3/ and to change the project boundary. 4/

The original license for the Medway Project was issued on March 29, 1979 and expires on March 30, 1999. 5/ For the reasons discussed below, I will issue a new license to Bangor Hydro for the Medway Project. 6/

- 1/ 16 U.S.C. §§ 797(e) and 808.
- 2/ The West Branch Penobscot River is a navigable waterway of the United States (See 48 FERC ¶ 62,213 (1989) and 53 FERC ¶ 61,086 (1990)). Therefore, Section 23(b)(1) of the F.P.A., 16 U.S.C. § 817(1) requires the project to be licensed.
- 3/ Bangor Hydro requested that Ordering paragraph (B)(2)(6)(b) of the original license be corrected to indicate that the project actually contains four 2.3/26-kV transformers instead of three. The exhibit A approved by this order correctly gives the number of transformers and their step-up capacity. The new project description does not call out the transformers therefore no further action is needed on the amendment request to revise the project description.
- 4/ Bangor Hydro requested the removal of certain lands not needed for project purposes. See paragraph VIII. E. of this order for further discussion.
- 5/ The original license has an effective date of April 1, 1962.
- 6/ On December 7, 1998, Bangor Hydro filed a joint application (continued...)

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I. BACKGROUND

On June 17, 1997, the Federal Energy Regulatory Commission (Commission) issued a public notice soliciting motions to intervene in the proceeding by August 25, 1997. ^{7/} The Maine State Planning Office, the United States Department of the Interior (Interior), and the Penobscot Indian Nation (PIN) filed timely motions to intervene dated July 1, 1997, August 22, 1997, and August 22, 1997, respectively. All were automatically granted pursuant to the Commission's regulations. ^{8/}

The Commission noticed the application for amendment to the license on December 29, 1998. Interior and the State of Maine filed motions to intervene by letters dated February 16, 1999. Interior expressed concern about the effects of removing lands from the project boundary that contain a boat launch and canoe portage and requested that the Commission retain jurisdiction to

^{6/} (...continued)
of transfer of license of seven of Bangor Hydro's projects, including Medway, to Penobscot Hydro, Inc., and amended its application on January 22, 1999, to identify the transferee as Penobscot Hydro, LLC. The Commission noticed the application for transfer on January 29, 1999 (64 Fed. Reg. 3655 (February 4, 1999)).

The request for transfer is being processed in a separate proceeding. Nonetheless, when a license is transferred, the new licensee steps into the shoes of the old licensee, and is subject to any and all requirements to which the old licensee was subject under the license and the Commission's orders thereunder. Section 8 of the FPA, 16 U.S.C. § 801, provides, in pertinent part:

[N]o voluntary transfer of any license, or of the rights thereunder granted, shall be made without the written approval of the Commission; and any successor or assign of the rights of such licensee . . . shall be subject to all of the conditions of the license under which such rights are held by such licensee and also subject to all the provisions and conditions of this Act to the same extent as though such successor or assign were the original licensee hereunder

^{7/} 62 Fed. Reg. 35490-35491 (July 1, 1997).

^{8/} 18 C.F.R. § 385.214 (1996).

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the extent necessary to ensure the maintenance and development of the recreational facilities located on these lands. ^{9/}

Commission staff issued a draft environmental assessment (DEA) for the project on October 28, 1998, ^{10/} in which they recommended that the project be licensed as proposed by Bangor Hydro with additional environmental conditions. Staff found that, with these conditions, licensing the project would not constitute a major federal action significantly affecting the quality of the human environment. Interior, PIN, and Maine Department of Environmental Protection (DEP) ^{11/} filed comments on the DEA. Staff considered these comments in preparing the final environmental assessment (FEA), which was issued on March 12, 1999, and is incorporated by reference and made part of this order.

All comments and recommendations filed by the interested parties were considered in determining whether, and under what conditions, to issue this license.

II. PROJECT DESCRIPTION

The Medway Project consists of a 343-foot-long concrete gravity dam surmounted by flashboards, a 64-foot-long concrete gravity forebay wall, a 120-acre impoundment, a powerhouse containing five generating units with a total installed capacity of 3.44 MW, an approximate 144-foot-long underground transmission line, and appurtenant facilities. A more detailed description of the project works is in Ordering paragraph B(1).

Bangor Hydro would continue to operate the project in a run-of-river mode.

^{9/} By order issued August 7, 1995 (72 FERC ¶ 62,092), the Commission approved the recreation facilities pursuant to Article 35 of the license. The boat launch is not located on lands proposed for removal from the project boundary; a portion of the canoe portage is located on lands proposed for removal from the project boundary.

^{10/} 63 Fed. Reg. 59297 (November 3, 1998).

^{11/} DEP's comments consisted of a restatement of its water quality certificate conditions, which are attached as an appendix to and made part of this order.

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III. APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10(a)(2)(C) and 15(a) of the FPA, ^{12/} staff evaluated Bangor Hydro's record as a licensee with respect to the following: (A) consumption improvement program; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public. I accept the staff's conclusion in each of these areas.

Here are staff's findings:

A. Consumption Improvement Program

Bangor Hydro's conservation programs ^{13/} demonstrate progress in implementing energy management measures for both residential and non-residential customers.

Bangor Hydro's conservation activities are regulated by the Maine Public Utilities Commission (MPUC) rules and by the Maine Energy Policy Act. MPUC allows utilities to implement conservation and load management programs without its express approval if they meet the criteria of its rules. MPUC prefers the Maine utilities initiate, design, and implement their own programs.

Bangor Hydro states that all the energy conservation programs implemented by it have complied with all applicable regulatory requirements.

We believe that Bangor Hydro's efforts have brought about significant improvements in electricity consumption efficiency and that Bangor Hydro has in place an adequate electricity consumption improvement program.

B. Compliance History and Ability to Comply with the New License

We have reviewed Bangor Hydro's compliance with the terms and conditions of the existing license. We find that Bangor Hydro's overall record of making timely filings and compliance with its license is satisfactory. We conclude that Bangor Hydro

^{12/} 16 U.S.C. §§ 803 and 808.

^{13/} See Exhibit H(a)-11 in Bangor Hydro's license application, March 1997 (Volume II).

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has the ability to comply with the conditions of a new license and of orders issued thereunder.

C. Safe Management, Operation, and Maintenance of the Project

We have reviewed Bangor Hydro's record of management, operation, and maintenance of the Medway Hydroelectric Project pursuant to project safety. The Medway Project is exempt from the Emergency Action Plan due to its classification as a low-hazard project pursuant to Commission regulations. We conclude that the dam and other project works are safe and that the licensee's record of managing, operating, and maintaining these facilities supports the decision to issue a license.

D. Ability to Provide Efficient and Reliable Service

Bangor Hydro has no plans to further increase capacity or generation at the project.

The project is automated. The automation system controls the five generating units and the vacant bay sluice gates as necessary to maintain headpond elevation. In 1995, a new station automation system was installed to upgrade control of the station generating equipment and improve station efficiency. Bangor hydro uses a computerized maintenance management system to enhance the performance of maintenance and minimize unscheduled outages resulting from equipment failure.

We reviewed the unscheduled outages at the Medway Project over the five-year period, 1991 to 1996. Many outages listed were regular maintenance activities which were ideally performed during river flows which were below the station's hydraulic capacity. The average annual energy production (1961 through 1996) for this project is 28,118,000 kWh.

We conclude that Bangor Hydro has operated the project in an efficient manner within the constraints of the existing license and can continue to provide efficient and reliable electric service in the future.

E. Need for Power

Bangor Hydro is a public utility serving about 100,000 residential, commercial, and industrial customers in an area of about 5,000 square miles in eastern Maine. Bangor Hydro has owned and operated the Medway Project since its purchase from Penobscot Power Company in 1931. In addition to the Medway Project, Bangor Hydro owns and operates six other hydroelectric facilities on the Penobscot, Stillwater, and Union Rivers. The project has helped meet customer's power requirements for nearly

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76 years. The project accounts for 3.44 MW of Bangor Hydro's total hydroelectric resources of 31 MW. Bangor Hydro does not have enough generation to supply its system load and contracts for generation with neighboring utilities.

Bangor Hydro is a member of the New England Power Pool (NEPOOL). NEPOOL forecasts an average annual increase in peak capacity demand of 1.1 percent during the summer months and 1.2 percent during the winter months for the 1996 to 2005 planning period. During the same period, NEPOOL forecasts an annual decrease in planned capacity of 0.7 percent during the summer months and 0.3 percent during the winter months. NEPOOL shows the current reserve margin as 16.6 percent and this is expected to decrease to 5.1 percent by 2005. Without additional capacity, NEPOOL capacity will fall below the North American Electric Reliability Council's 15 percent recommended reserve margin by 2000. The electricity generated from the project would benefit the region by providing a portion of the needed regional power.

If relicensed, the project would continue to meet part of Bangor Hydro's needs and a small part of the region's needs. In addition, the project would continue to displace fossil-fueled electric power generation the regional utilities now use, and thereby conserve nonrenewable fossil fuels and reduce the emission of noxious byproducts caused by the combustion of fossil fuels.

F. Transmission Services

Bangor Hydro proposes no modifications to the transmission system. Removal of project generation, or license denial, would not require Bangor Hydro to construct new transmission lines or other facilities. Distributing energy from the project to the Medway area does, however, conserve an estimated 99,029 kWh per year in line losses that would result from importing energy equivalent to the project output from other parts of Bangor Hydro's transmission system.

We conclude that Bangor Hydro's transmission service is sufficient for the project and that no changes are necessary at this time.

G. Cost Effectiveness of Plans

Bangor Hydro has no plans for additional facilities or project modifications other than environmental enhancements. We conclude that the project, as presently configured and as operated according to this order consistent with environmental considerations, fully develops the economical hydropower potential of the site in a cost-effective manner.

H. Actions Affecting the Public

Environmental enhancement measures included in the license will generally improve environmental quality, particularly for aquatic and wildlife resources, and will have a beneficial affect on public use of project facilities for recreational purposes.

IV. WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA), ^{14/} the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency has issued a water quality certification for the project or has waived certification by failing to act upon a request for certification within a reasonable time, not to exceed one year.

Bangor Hydro applied to the DEP for a water quality certificate for the Medway Project on March 14, 1997, and on February 23, 1998, simultaneously withdrew and refiled the pending application. The DEP granted certification on December 23, 1998.

The certification contains conditions requiring Bangor Hydro to: 1) maintain impoundment water level within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are absent; 2) continue run-of-river operations except during approved maintenance activities, high flow periods, and operational emergencies beyond the licensee's control; 3) monitor run-of-river operations; 4) install, operate, and monitor upstream and downstream American eel passage facilities; and 5) monitor mercury and polychlorinated biphenyl (PCB) contamination in fish and sediments from the project impoundment and downstream areas.

The DEP also stipulates in the WQC that all variances from the plans and proposals contained in the application and supporting documentation must be reviewed and approved by the DEP, that Bangor Hydro must secure and comply with all federal, state, and local licenses, permits and other forms of approval required for project operation, and that the certification shall be effective concurrent with the effective date of the new hydropower license.

The WQC conditions are included in this license as Appendix A and are made part of this license.

^{14/} 33 U.S.C. § 1341(a)(1).

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V. THREATENED AND ENDANGERED SPECIES

Section 7(a) of the Endangered Species Act of 1973 (ESA) ^{15/} requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Federally listed species that are known to occur in the project area include the threatened bald eagle and the endangered peregrine falcon.

In the DEA, staff concluded that issuing a new license with their recommended enhancement measures would not be likely to adversely impact the bald eagle and would not affect the peregrine falcon. ^{16/} FWS concurred and concluded no further consultation under Section 7 of the Endangered Species Act is required (letter from Michael Bartlett, Fish and Wildlife Service, Supervisor New England Field Office, Concord, New Hampshire, November 13, 1998).

VI. FISHWAY PRESCRIPTIONS

Section 18 of the FPA ^{17/} states that the Commission shall require the construction, operation, and maintenance by a licensee of such fishways as the Secretary of the Interior or the Secretary of Commerce, as appropriate, may prescribe.

Bangor Hydro proposes to build and operate upstream passage facilities and implement downstream passage measures for American eels. Bangor Hydro would also monitor the effectiveness of the passage facilities using video recorders. By letter of June 17, 1998, Interior generally agreed with the proposed eel passage measures, ^{18/} but declined to issue a fish passage prescription until post-licensing consultations are completed with the applicant over final design and monitoring of the proposed eel passage facilities. Interior also expressed the potential need to address anadromous salmon and other fish passage needs in the future, and requested the Commission to reserve Interior's prescription authority. Article 401 of this license reserves the

^{15/} 16 U.S.C. § 1536(a).

^{16/} See Section V.C.5 of the FEA.

^{17/} 16 U.S.C. § 811.

^{18/} PIN also generally agrees with the proposed measures, but feels that additional studies may be needed prior to developing final designs and that the proposed monitoring may not be adequate to document eel passage efficiencies.

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Commission's authority to require fishways that the Secretary of Interior may prescribe in the future.

Staff agreed that installing, operating, and monitoring the facilities as proposed would benefit the eel fisheries, which have been declining in the basin in recent years. However, because the passage facilities would be new, staff recommended that Bangor Hydro prepare the final design and monitoring plans in consultation with FWS, PIN, DEP, and Maine Department of Inland Fish and Wildlife (MDIFW). Article 404 provides the agencies an opportunity to review the design plans and schedules for the fishways and provide comments and recommendations. ^{19/} Similarly, Article 405 provides for the development of a final monitoring plan in consultation with the above agencies to ensure that the passage facilities would be operating according to the intended designs.

VII. RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

A. Section 10(j) Recommendations of the Fish and Wildlife Agencies

Under the provisions of Section 10(j)(1) of the FPA, ^{20/} the Commission is required to include license conditions, based upon recommendations of state and federal fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife resources affected by the project. If the Commission believes that any such recommendations may be inconsistent with the purpose and requirements of Part I of the FPA, or other applicable law, Section 10(j)(2) of the FPA requires the Commission and the agencies to attempt to resolve such inconsistencies, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. If the Commission still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

^{19/} In their December 11, 1998, comments on the DEA, the PIN indicated that further studies may be needed to adequately design the eel passage facilities. The need and design of studies required to develop the final plans can be addressed during consultation and will be considered by the Commission when approving the plans.

^{20/} 16 U.S.C. § 803(j)(1).

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By letter dated June 17, 1998, Interior made two recommendations pursuant to Section 10(j) of the FPA: 21/ (1) operate the Medway Project in a run-of-river mode, whereby outflows from the project equal inflows to the impoundment on an instantaneous basis, and water level fluctuations above the dam are kept to a minimum (plus or minus one foot from full pond); and (2) prepare a plan, in consultation with FWS, U.S. Geological Survey (USGS), DEP, MDIFW, and PIN, to monitor flows and impoundment water levels at the Medway Project.

By letter dated October 28, 1998, staff made the preliminary determination that Interior's recommendation to limit impoundment fluctuations to within plus or minus one foot of full pond was inconsistent with the purposes and requirements of Part I of the FPA and other applicable law because this standard could not be maintained during periods of excessively high seasonal flows or periods immediately after flashboard failure. By letter dated December 10, 1998, Interior agreed with our recommendation to permit exceptions to this limit when the causes of the fluctuations are beyond the applicant's control. Interior also recommended that the flashboards be replaced as soon as safely possible.

Subsequent to the completion of the section 10(j) consultation with Interior, the MDEP issued the project water quality certification that required maintaining the project impoundment within 6 inches of full pond when the flashboards are in place and 6 inches of the spillway crest elevation when flashboards are not in place. 22/ Staff recommended adopting the mandatory condition because the more restrictive condition would provide greater environmental benefits than Interior's recommendation. Article 402 requires run-of-river operation and reservoir fluctuation limits consistent with the states' water quality certificate. Article 403 requires Bangor Hydro to file a plan to monitor reservoir levels and flows to ensure compliance with the above operational limits. I conclude that all inconsistencies between Interior's recommendations and the FPA are resolved.

21/ Maine Department of Inland Fish and Wildlife did not submit Section 10(j) recommendations for the project.

22/ The water quality certificate also provides for reasonable exceptions to these limits (see Appendix A) which are also included in license Article 402.

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B. Section 10(a) Recommendations of the Fish and Wildlife Agencies

Section 10(a)(1) requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of waterpower development, for the adequate protection, mitigation, and enhancement of fish and wildlife, and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes. ^{23/}

Interior's recommendations regarding recreation monitoring are discussed in section VIII, C, below.

In its February 16, 1999, motion to intervene on the application for amendment of licenses, Interior requested that any license issued include an article that requires the licensee to serve, at the time of filing, the representatives identified in the motion a copy of any request the licensee may file for modification, amendment, or appeal of any recreational conditions, fish and wildlife related conditions, or any conditions affecting tribal rights and resources. In their answer to Interior's motion to intervene, Bangor Hydro objected to the request for a special Interior service requirement indicating it was inappropriate and contrary to Commission practice. Where a licensee proposes modifications to its project that entail a material change in the plan of project development or in the terms and conditions of the license, or could adversely affect the rights of property holders in a manner not contemplated by the license, the Commission will issue public notice and provide an opportunity for intervention. ^{24/} It is neither necessary nor appropriate to require a licensee to serve copies of filings requesting non-material changes in the plan of project development or in the terms or conditions of the license. ^{25/}

^{23/} 16 U.S.C. § 803(a)(1).

^{24/} See, e.g., Kings River Conservation District, 36 FERC ¶ 61,365 (1986).

^{25/} Any person can monitor all filings at the Commission by accessing the Records Information Management System (RIMS) through the Commission's internet web site.

VIII. OTHER ISSUES

A. Indian Trust Responsibilities

Interior and PIN believe that the Commission has not adequately fulfilled its trust responsibilities to the PIN, a federally recognized tribe, because the environmental analysis did not explicitly discuss and analyze the effects of relicensing on the PIN's fishing rights.

As acknowledged in previous cases, the Commission is "subject to the United States' fiduciary responsibility towards Indian tribes, which, in essence, consists of acting in the interests of the tribes." ^{26/} We, however, exercise this responsibility in the context of the FPA. ^{27/}

This trust responsibility is a legal matter that requires our consideration in administering various provisions of the FPA. It is not an environmental factor or effect that must be analyzed in an environmental assessment or impact statement. Because we acknowledge and discuss this trust responsibility in our published decision, we do not consider it necessary to also include a statement of this responsibility in our environmental documents. Rather, staff focused their environmental analysis on the particular environmental values and resources that PIN asked the Commission to consider in this licensing proceeding: resident fish populations, eel passage, and mercury contamination. This approach permits consideration of the effects of a proposed licensing action on those values and resources, while leaving for the Commission the ultimate decision of whether the environmental measures that the staff have analyzed and recommended are consistent with the Commission's trust responsibility.

NEPA requires us to examine the environmental effects of our licensing decisions. It does not require us to analyze and discuss the many legal and other considerations that may influence those decisions. ^{28/} Accordingly, I reject the agencies' and tribe's assertion that the EA is inadequate because it fails to include a discussion of our trust responsibility to the tribe.

^{26/} Minnesota Power & Light Co., 75 FERC 61,131 (1996).

^{27/} City of Tacoma, Washington, 71 FERC 61,381 at pp. 61,492-93 (1995).

^{28/} City of Tacoma, Washington 84 FERC 61,107 (1998)

The requirements to operate run-of-river and minimize reservoir fluctuations, to monitor flows and reservoir levels to ensure operational compliance, and to construct, operate and monitor eel passage facilities and measures at the Medway Project will protect aquatic and fishery resources important to PIN. Although staff did not recommend monitoring mercury levels, 29/ PIN's concerns regarding elevated mercury levels in fish will largely be addressed by the state's water quality certificate requirement to monitor mercury contamination in fish and sediments from within and below the project. 30/ Staff did not agree with the need for additional resident fish population and passage studies because the available data suggests that staff's recommended measures would adequately achieve and maintain the suitability of project waters as fish habitat. 31/ I concur. Accordingly, I find that this licensing decision is consistent with the Commission's trust responsibility.

B. Cultural Resources

Although there are no properties in the Medway Project area that are of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act, 32/ Article 406 is included in this license to protect any archeological or historic sites that may be discovered during project operation and maintenance.

29/ Staff did not recommend the monitoring because they believe the elevated mercury levels to be a watershed phenomenon and not related to the run-of-river project operation.

30/ Supra. at 12.

31/ See FEA at 21-22 and Appendix A to FEA at A-7, A-8, A-12, and A-13. Article 15 of Form L-3 provides Interior or MDIFW or PIN through these agencies, to request further site-specific consideration of white sucker and resident fish populations, should such a need be demonstrated in the future. Moreover, Interior has reserved its authority to prescribe fishway facilities should they find it appropriate.

32/ By letter dated December 20, 1996, the Maine State Historic Preservation Officer concurred that there are no properties in the Medway Project area that are of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act.

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C. Recreation Plan

The revised recreation plan, approved by the Commission on August 7, 1995, ^{33/} is meeting existing recreational access needs. ^{34/} The revised recreation plan is made part of this license (Article 407).

Interior recommended that Bangor Hydro continue to monitor public use at the project through the Commission's Form 80 process and that the review of the adequacy of recreational access measures at the project include periodic consultation with FWS, National Park Service (NPS), PIN, and appropriate state agencies. Although Form 80 information is available to anyone upon request, Article 408 requires Bangor Hydro to file copies of the Form 80 with FWS, NPS, PIN, and Maine Department of Conservation to advise the agencies of changing recreation demands at the project.

D. Use and Occupancy of Project Lands and Waters

Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Article 409 allows Bangor Hydro to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape plantings. Such uses must be consistent with the purpose of protecting and enhancing the scenic, recreational, and environmental values of the project.

E. Project Boundary

The November 19, 1998, application for amendment to the license proposed a number of changes to the current project boundary. One of the proposed changes would move the boundary (shown as courses 7-8 and 8-2 on the exhibit G drawings) so that it is essentially contiguous with the powerhouse and left bank of the West Branch Penobscot River. A canoe portage trail exists between the public boat ramp and a point approximately 350 feet downstream of the powerhouse, which is within the area affected by the above course changes. Approximately 130 feet of this portage trail is shown outside of the present project boundary. Nevertheless, a majority of the portage trail is within the confines of the present project boundary and sufficient area exists to locate the portage trail within that area should it be necessary.

^{33/} 72 FERC 62,093 (August 7, 1995).

^{34/} See FEA, Section V. at 12.

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Interior in their filing requested that, with a new license or a transfer of license, the land and facilities necessary for recreation, including canoe portages, be subject to the Commission's jurisdiction. We agree, and believe that the project recreation facilities, including the canoe portage trail should remain in the project boundary. Therefore, Bangor must submit revised exhibit G drawings showing the canoe portage trail on the east end of the Milford Dam within the project boundary.

Also, at the right abutment of the spillway, the proposed boundary line does not include all of the spillway abutment structure. The licensee shall modify the project boundary so that all or any part of project facilities are included within the project boundary. The licensee shall resubmit revised exhibit G drawings, showing the modified project boundary, for approval.

F. Administrative Conditions

The Commission collects annual charges from licensees for the administration of the FPA. Article 201 provides for the collection of such funds. Article 202 requires the filing of aperture cards for project drawings. Article 203 requires the establishment and maintenance of an amortization reserve account. Article 501 requires Bangor Hydro to reimburse the owner of a storage reservoir or other headwater improvement project that directly benefits the licensee's project. The benefits will be assessed in accordance with Subpart B of the Commission's regulations. Once the design of the eel passage facilities is approved, Article 301 requires that final contract drawings and specifications be filed with the Commission.

IX. CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA ^{35/} requires the Commission to consider the extent to which a hydroelectric project is consistent with federal and state comprehensive plans for improving, developing, or conserving waterways affected by the project. ^{36/} Under Section 10(a)(2)(A), federal and state agencies filed 10 comprehensive plans for Maine that address various resources in Maine. Of these, Commission staff

^{35/} 16 U.S.C. § 803(a)(2)(A).

^{36/} Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (1997).

identified and reviewed 4 plans relevant to this project. 37/ No conflicts were found.

X. COMPREHENSIVE DEVELOPMENT

In determining whether a proposed hydroelectric power project will be best adapted to a comprehensive plan for developing a waterway for beneficial public uses, pursuant to Section 10(a)(1), the Commission considers a number of public interest factors, including the projected economic benefits of project power.

Under the Commission's current approach to evaluating the economics of hydropower projects, as articulated in Mead Corp., 38/ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power without incorporating forecasts concerning the effects of potential future inflation, escalation, or deflation. The purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. In making its decision, the Commission considers the project power benefits both with the applicant's proposed mitigation and enhancement measures and with the Commission's proposed modifications and additions to the applicant's proposal.

As proposed by Bangor Hydro, the project would produce an average of 28.11 gigawatt-hours (GWh) of energy annually at an annual cost of about \$883,000 or 31.4 mills per kilowatt-hour (mills/kWh). The current annual value of the project's power would be \$1,141,000 (40.6 mills/kWh). We base this value on the cost of alternative resources, which in this case is regional natural gas fuel cost and alternative capacity cost, including fixed operation and maintenance, using combined-cycle combustion turbine. To determine whether the proposed project is currently economically beneficial, we subtract the project's cost from the value of the project's power. Thus, based on current costs, the

37/ (1) Maine Atlantic Sea-Run Salmon Commission. 1984. Strategic plan for management of Atlantic salmon in the State of Maine. Augusta, Maine. July 1984. 52 pp. and appendices; (2) Maine Department of Conservation. 1982. Maine rivers study-final report. Augusta, Maine. May 1982. 181 pp; (3) Maine State Planning Office. 1987. State of Maine comprehensive rivers management plan. Augusta, Maine. May 1987; and (4) Maine State Planning Office. 1992. Maine comprehensive rivers management plan. Volume 4. Augusta, Maine. December 1992.

38/ 72 FERC ¶ 61,027 (1995).

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project as proposed by Bangor Hydro would cost about \$258,000 (9.2 mills/kWh) annually less than the current cost of alternative power. In this case, staff's recommendation is essentially the same as Bangor Hydro's proposal; the minor modifications 39/would not significantly affect the project's costs.

Sections 4(e) and 10(a)(1) of the FPA 40/ require the Commission, in acting on applications for license, to give equal consideration to developmental and environmental values. Any license issued shall be in the Commission's judgment best adapted to a comprehensive plan for improving or developing the waterways for beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

Based on the record in this proceeding, and for the reasons discussed herein, I conclude that the proposed project with our additional protection, mitigation, and enhancement measures will be best adapted to a comprehensive plan for developing the waterway for beneficial public uses. The 28.11 GWh of clean, domestic, and reliable energy that would be produced by the project would displace fossil-fueled electric generation, thereby conserving nonrenewable fossil fuels and avoiding the emission of additional noxious gases caused by the combustion of those fuels. The other environmental measures -- run-of-river operation, monitoring flows and reservoir elevations, constructing, operating and monitoring the effectiveness of eel passage facilities following consultation with the resource agencies and PIN, and providing the resource agencies and PIN copies of the Form 80 information -- would reduce adverse project effects and enhance the natural resources of the project area.

39/ Staff's recommend measures include: (1) continue run-of-river operation with a 6 inches from full pond elevation limit on reservoir fluctuation, except during high flows and operational emergencies; (2) development of a monitoring plan in consultation with the resource agencies to ensure compliance with the run-of-river operation; (3) preparation of final design and operating plans of the upstream and downstream eel passage facilities in consultation with the resource agencies and PIN; (4) preparation of a monitoring program in consultation with resource agencies and PIN to evaluate eel passage facility effectiveness; and (5) provision for providing a copy of the FERC Form 80 to FWS, NPS, PIN, and Maine Department of Conservation (DOC) to advise them of changing recreation demands at the project.

40/ 16 U.S.C. §§ 808(e).

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XI. LICENSE TERM AND ANNUAL CHARGES

Section 15 (e) of the FPA ^{41/} specifies that any license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years from the date on which the license is issued. Commission policy is to grant 30-year license terms for projects with little or no redevelopment, new construction, or new environmental mitigation and enhancement requirements; 40-year terms for projects with a moderate amount thereof; and 50-year terms for projects with extensive amounts thereof.

The environmental mitigation and enhancement costs of the new license for the Medway Project warrant a term of 30 years, effective April 1, 1999.

Section 10(e) of the FPA ^{42/} provides that the Commission shall assess licensees annual charges to reimburse the United States' costs of administering Part I of the FPA.

XII. SUMMARY OF FINDINGS

Background information, analysis of impacts upon the environment, and support for related license articles are contained in the FEA. 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 constructed, operated and maintained in accordance with the requirements of this license.

The Commission orders:

(A) This license is issued to Bangor Hydro-Electric Company (licensee) for a period of 30 years, effective April 1, 1999, to construct, operate, and maintain the Medway Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the FPA.

^{41/} 16 U.S.C. § 799.

^{42/} 16 U.S.C. § 803(e).

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(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:

EXHIBITS	FERC NO.	TITLE	SUPERSEDES /DELETED
G-1	2666-1005	Detail Map, Reservoir (Amendment)	2666-1
G-2	2666-1006	Detail Map, Reservoir	2666-10
G-3	2666-1007	Detail Map, Reservoir (Amendment)	2666-11

(2) Project works consisting of : 1) a 343-foot-long, 33.7-foot-high concrete gravity dam (including flashboards), with an impoundment elevation of 259.3 feet mean sea level (msl) with flashboards in place; (2) a 64-foot-long concrete gravity forebay wall; (3) a non-functioning upstream fishway; (4) a 120-acre impoundment at elevation 259.3 feet (normal impoundment level); (5) a 170-foot-long, 34-foot-wide, 71-foot-high brick powerhouse containing five generating units with a total installed capacity of 3.44 MW; (6) an approximate 144-foot-long, 3-kilovolt (kv) underground transmission line; and (7) appurtenant facilities.

The project works generally described above are more specifically described in Exhibit A of the application and shown by Exhibit F as well as the application to amend the license:

EXHIBITS	FERC NO.	TITLE	SUPERSEDES /DELETED
F-1	2666-1001	General Plan and Dam Sections	2666-5
F-2	2666-1002	Main Floor Plan	2666-6
F-3	2666-1003	Powerhouse Plan and Sections	2666-7
F-4	2666-1004	Dam and Powerhouse Downstream Elevation Drawing (Addendum filed 5/19/97)	

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

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(C) Exhibits A , F and G are approved and made part of the license.

(D) Within 90 days from the date of this order the licensee shall submit revised exhibit G drawings showing the limits of the project boundary on the east end of the Milford dam to include the canoe portage trail and on the right bank the revised project boundary to include all of the project structures in their entirety.

(E) 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 April 1, 1999:

For the purpose of reimbursing the United States for the cost of administering Part I of the FPA, 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 3,440 kilowatts.

Article 202. Within 45 days of the date of issuance of this order, the licensee shall file three original sets of aperture cards of the approved drawings. All aperture cards should be reproduced on silver or gelatin 35 mm microfilm. All microfilm should be mounted on a Type D (3 1/4" x 7 3/8") aperture card.

Prior to microfilming, the FERC Drawing Number (2666-1001 through 2666-1006) shall be shown in the margin below the title block of the approved drawings. After mounting, the FERC Drawing Number should be typed in the upper right corner of each aperture card. Additionally, the Project Number, FERC exhibit (i.e., F-1), Drawing Title, and date of this order should be typed in the upper left corner of each aperture card. See Figure 1.

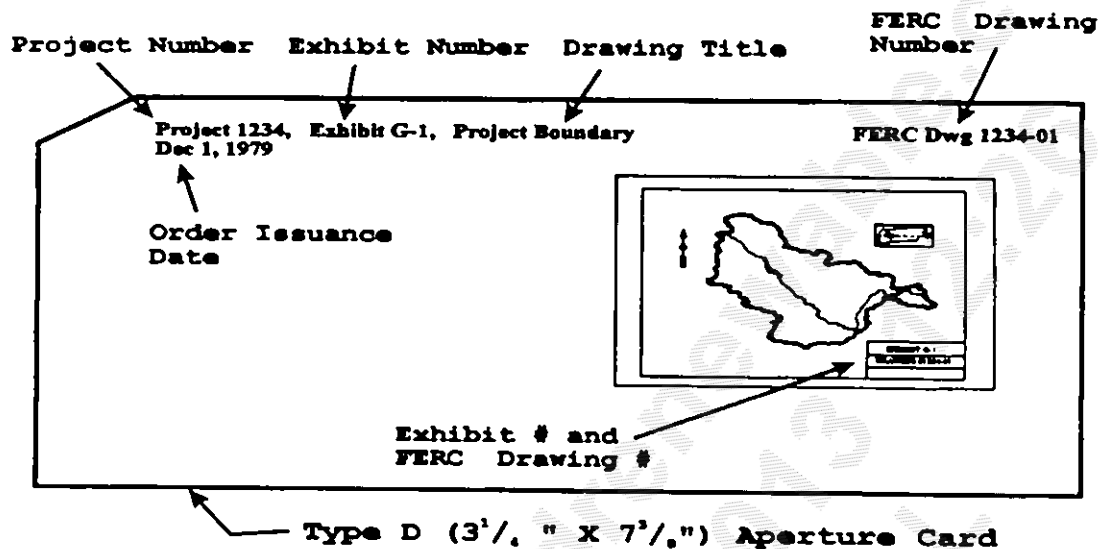


Figure 1. Sample Aperture Card Format

Two original sets of aperture cards should be filed with the Secretary of the Commission. The remaining set of aperture cards should be filed with the Commission's New York Regional Office.

Article 203. Pursuant to Section 10(d) of the FPA, 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. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of thirteen monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such

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ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on ten-year government bonds (reported as the Treasury Department's ten-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 301. The licensee shall, at least 60 days prior to the start of construction, submit one copy to the Commission's Regional Director and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the final contract drawings and specifications, quality control and inspection program, and temporary emergency action plan (if necessary), along with an accompanying supporting design report for pertinent features of the project, such as water retention structures, powerhouse, fishways, and water conveyance structures. The supporting design report should be consistent with the Commission's Engineering Guidelines. The Commission may require changes in the plans and specifications to assure a safe and adequate project. If the licensee plans substantial changes to location, size, type, or purpose of water retention structures, powerhouse, or water conveyance structures, the plans and specifications must be accompanied by revised Exhibit F and G drawings, as necessary.

Article 401. Authority is reserved by 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.

Article 402. The licensee shall operate the project in a run-of-river mode to protect aquatic life and water quality in the West Branch Penobscot River.

The licensee shall at all times act to minimize reservoir surface elevation fluctuation by maintaining project discharge so that, at any point in time, flows immediately downstream from the project dam approximate flows into the project reservoir. The licensee shall maintain an impoundment surface elevation within six inches (in) of 259.3 feet above mean sea level (msl) except during emergency, maintenance, and high or low flow events beyond the licensee's control, following flashboard failures. Following flashboard failures, the licensee shall maintain impoundment level within six in of the spillway crest, and shall replace the flashboards as soon as safely possible.

Run-of-river operations may also be modified for short periods upon mutual agreement between the licensee and the Maine Department of Environmental Protection (DEP).

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The licensee shall notify the Commission as soon as possible, but no later than 10 days, after each incident resulting in a change in run-of-river conditions as specified above.

Article 403. Within six months of the issuance date of this license, the licensee shall file with the Commission, for approval, a plan to monitor flow and reservoir water level at the project.

The monitoring plan shall include a schedule for: (1) program implementation; (2) consulting with appropriate federal and state agencies concerning monitoring results; and (3) filing monitoring results, agency comments, and licensee's responses to agency comments with the Commission.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, the U.S. Geological Survey, Maine Department of Environmental Protection, the Maine Department of Inland Fisheries and Wildlife and the Penobscot Indian Nation (PIN).

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and PIN, and specific descriptions of how agency and PIN comments are accommodated by the plan. The licensee shall allow at least 30 days for the agencies to comment and make recommendations before filing the plan 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. The gaging plan shall not be implemented until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including changes required by the Commission.

Article 404. At least 90 days before starting land-clearing or land-disturbing at the project site, the licensee shall file, for Commission approval, detailed design drawings of the licensee's proposed upstream and downstream American eel passage facilities together with proposed construction and operation schedules for the facilities.

The licensee shall prepare the aforementioned drawings and schedules after consulting with the U.S. Fish and Wildlife Service, Maine Department of Environmental Protection (DEP) and Penobscot Indian Nation (PIN). The licensee shall include with the drawings and schedule documentation of consultation, copies

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of comments and recommendations on the drawings and schedule after being prepared and provided to the agencies and PIN, and specific descriptions of how agency and PIN comments are accommodated by the licensee's facilities and plans. The licensee shall allow at least 30 days for agencies and PIN to comment and make recommendations before filing drawings and schedules 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 proposed facilities and schedules. Land-clearing and land-disturbing activities shall not begin until the licensee is notified by the Commission that the filing is approved. Upon Commission approval, the licensee shall implement the proposal, including changes required by the Commission.

Article 405. At least 90 days prior to starting land-clearing or land-disturbing at the project site, the licensee shall file with the Commission, for approval, a plan for post-construction studies to monitor effectiveness of the upstream and downstream American eel passage facilities.

The monitoring plan shall include schedules for: (1) implementing the plan; (2) consulting with appropriate federal and state agencies concerning monitoring results; and (3) filing the results, agency comments, and licensee's response to agency comments with the Commission.

The licensee shall prepare the plan after consulting with the U.S. Fish and Wildlife Service, Maine Department of Environmental Protection (DEP) and Penobscot Indian Nation (PIN). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and PIN, and specific descriptions of how agency and PIN comments are accommodated by the plan. The licensee shall allow at least 30 days for agencies and PIN to comment and make recommendations before filing the plan 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. Land-clearing and land-disturbing activities shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including changes required by the Commission.

If results of monitoring indicate that changes in project structures or operations, including alternative flow releases,

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are necessary to protect fish resources, the Commission may direct the licensee to modify project structures or operations.

Article 406. The licensee, before starting any land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in this license, including recreation developments at the project, shall consult with the State Historic Preservation Officer (SHPO).

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 and consult with the SHPO.

In either instance, the licensee shall file for Commission approval a cultural resource management plan (plan) prepared by a qualified cultural resource specialist after having consulted with the SHPO, or a letter from SHPO stating a CRMP is not needed. The plan shall include the following items:

- (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 by the Commission that the requirements of this article have been fulfilled.

Article 407. The revised recreation plan approved in Bangor Hydro-Electric Company, 72 FERC ¶ 62,093 (1995), which provides for a hand-carried boat launch on the north shore of the West Branch of the Penobscot River, a canoe portage and appurtenant

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facilities, and warning/informational signs, is made part of this license.

Article 408. The licensee shall file copies of the Form 80 recreation report with the U.S. Fish and Wildlife Service, National Park Service, Penobscot Indian Nation, and Maine Department of Conservation at the same time it files the form with the Commission to inform these agencies of changing recreation needs at the project.

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 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 use 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, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water 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; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. 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 use 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 or roads where 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 certification 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 (measured over project waters) 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 project waters at normal 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 60 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 the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (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; and (iii) the grantee shall not unduly restrict public access to project waters.

- (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 public lands and reservations of the United States included within the project boundary.

Article 501. If the Licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

(F) 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.

(G) This order is issued under authority delegated to the Director and 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. Section 385.713. The filing of a request for rehearing does not operate

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as a stay of the effective date of this order or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.



Carol L. Sampson
Director
Office of Hydropower Licensing

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Black Bear/08:08:2015
CONFIDENTIAL

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APPENDIX A

Water Quality Certification Conditions
for the Medway Hydroelectric Project
Issued December 23, 1998
by the State of Maine Department of Environmental Protection

THEREFORE, the Department GRANTS CERTIFICATION that there is a reasonable assurance that the continued operation of the MEDWAY HYDROELECTRIC PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. WATER LEVELS

- A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, and (4) agreement between the applicant and appropriate state and/or federal agencies water levels in the project impoundment shall be maintained within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.
- B. Operating emergencies beyond the applicants' control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.
- C. The applicant shall, in accordance with the schedule established in the new FERC licenses for the projects, submit plans for providing and monitoring the impoundment water levels required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

2. MINIMUM FLOWS

- A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicants' control, as defined below, (4) impoundment refilling after flashboard failure and replacement, and (5) agreement between the applicant and appropriate state and/or federal agencies, outflows from the project shall be approximately equal to inflows at all times.

- B. Operating emergencies beyond the applicants' control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and order from local, state, or federal law enforcement or public safety authorities.
- C. The applicant shall, in accordance with the schedule established in the new FERC licenses for the projects, submit plans for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

3. EEL PASSAGE FACILITIES

- A. The applicant shall, in accordance with the schedule established in the new FERC license for the project, install and operate upstream and downstream passage facilities to provide migratory passage for American eels.
- B. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit final design and operational plans for the upstream and downstream passage facilities for eels required in Part A of this condition. These plans shall be prepared in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation, and shall be reviewed by and must receive the approval of FERC and the DEP Bureau of Land and Water Quality prior to installation of the facilities.

4. EEL PASSAGE MONITORING

- A. The applicant shall, in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation, conduct monitoring to determine the effectiveness of the eel passage facilities required by Cond[t]ion 3 of this certification.
- B. The applicant shall, no later than 60 days prior to the commencement of operation of the required eel passage facilities, submit an eel passage effectiveness monitoring plan, prepared in consultation with appropriate state and federal fisheries agencies and the Penobscot Indian Nation. This plan shall be reviewed by and must receive the approval of FERC and the DEP Bureau of Land and Water Quality prior to its implementation.

- C. The applicant shall, upon such schedule as contained in the monitoring plan, submit the results of the eel passage effectiveness monitoring plan and any recommendations for changes in the design and/or operation of the passage facilities to the DEP, PIN and all consulting agencies. The Department reserves the right, after notice to the applicant and the opportunity to request a public hearing, to require reasonable changes in the design and/or operation of the eel passage facilities as may be deemed necessary to adequately pass migrating eels through the project area.

5. FISH TISSUE SAMPLING AND ANALYSIS

- A. The applicant shall, in cooperation with the DEP and the Penobscot Indian Nation, collect and analyze (1) tissue samples from white suckers and smallmouth bass and (2) sediment samples which shall be collected from the Medway Dam impoundment, from the downstream Mattaceunk Dam impoundment, and from the Penobscot River below the Mattaceunk Dam. These samples shall be analyzed for levels of mercury and total PCBs.
- B. The applicant shall, in accordance with the schedule established in the new FERC license for the project, submit a plan for collecting and analyzing fish tissue and sediment samples as required by Part A of this condition. This plan, including a schedule for sample collection, shall be prepared in consultation with the DEP Division of Environmental Assessment and the Penobscot Indian Nation, and shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.
- C. Based on the results of this and other available fish tissue analysis, the Department reserves the right, after notice to the applicant and the opportunity for a public hearing, to require such additional fish tissue collection and analysis as may be deemed necessary to determine whether the presence of the project dam is contributing to the issuance of any fish consumption advisory on the West Branch Penobscot River.

6. LIMITS OF APPROVAL

This approval is limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. All variances from the plans and proposals contained in said documents are subject to review and approval of the Board or Department prior to implementation.

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7. COMPLIANCE WITH ALL APPLICABLE LAWS

The applicant shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations conditions, agreements and orders required for the operation of the project.

8. EFFECTIVE DATE

This water quality certification shall be effective concurrent with the effective date of the new hydropower license issued for the Medway Hydroelectric Project by the Federal Energy Regulatory Commission.

**FINAL ENVIRONMENTAL ASSESSMENT
FOR HYDROPOWER LICENSE**

Medway Hydroelectric Project

FERC Project No. 2666-007

Maine

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Licensing and Compliance
888 First Street, NE
Washington, D.C. 20426

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SUMMARY

Bangor Hydro Electric Company (Bangor Hydro) proposes to continue operating the Medway Hydroelectric Project (project) located on the West Branch Penobscot River in the town of Medway, Penobscot County, Maine. The project has an installed generating capacity of 3.44 megawatts (MW).

This draft environmental assessment analyzes effects of continued project operation and recommends conditions for a new license. In addition to Bangor Hydro's proposal (continued run-of-river operation and providing eel passage facilities), we consider the following alternatives: (1) Bangor Hydro's proposal with additional environmental measures (including installation of a pneumatic crest control system and funding a monitoring program for mercury contamination in reservoir sediments and fish), and (2) no-action.

We recommend licensing the project with the following environmental measures: (1) run-of-river operation with a 6 inches from full pond elevation limits on reservoir fluctuation, except during high flows and operational emergencies; (2) development of a monitoring plan in consultation with the resource agencies to ensure compliance with the run-of-river operation; (3) preparation of final design and operating plans of the upstream and downstream eel passage facilities in consultation with the resource agencies and Penobscot Indian Nation (PIN); (4) preparation of a monitoring program in consultation with resource agencies and PIN to evaluate eel passage facility effectiveness; and (5) provision for providing a copy of the FERC Form 80 to Fish and Wildlife Service (FWS), National Park Service (NPS), PIN, and Maine Department of Conservation (DOC) to advise them of changing recreation demands at the project. We don't recommend installation of a pneumatic crest control gate because of the small benefit to resources and the high equipment cost. Nor do we recommend funding a mercury monitoring program because we believe the project is not the cause of the mercury problem and that run-of-river operation would not affect mercury levels in the reservoir sediments and fish. The Maine water quality certificate for the project, however, requires monitoring mercury contamination in fish and sediments from the project reservoir and downstream areas. These requirements will be made part of any license issued.

We conclude that issuing a new license for the project, with the environmental measures that we recommend, would not be a major federal action significantly affecting the quality of the human environment.

FINAL ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION OFFICE OF HYDROPOWER LICENSING

Medway Hydroelectric Project
FERC Project No. 2666-007--Maine

I. APPLICATION

On March 28, 1997, Bangor Hydroelectric Company (Bangor Hydro) filed an application for a new license with the Federal Energy Regulatory Commission (Commission) for the continued operation and maintenance of the existing 3.44-megawatt (MW) Medway Hydroelectric Project (project or Medway Project). 1/ The project is located on the West Branch Penobscot River (West Branch) in the town of Medway, Penobscot County, Maine (figure 1). The project doesn't occupy any federal lands.

The Commission staff issued a draft environmental assessment (DEA) for the project on October 28, 1998. The United States Department of Interior (Interior), Penobscot Indian Nation (PIN), and the State of Maine, Department of Environmental Protection (MDEP) commented on the DEA. All comments were considered carefully in preparing the final environmental assessment (FEA).

II. PURPOSE OF ACTION AND NEED FOR POWER

A. Purpose of Action

The Federal Power Act (FPA) provides the Commission with the exclusive authority to license nonfederal water power projects on navigable waterways and federal lands.

The Commission must decide (1) whether to issue a new license to Bangor Hydro, and, if so, (2) what, if any, conditions should be placed on that license to protect or enhance existing environmental resources and/or to mitigate for any adverse environmental impacts that would occur due to project operation and maintenance.

1/ A joint application, filed on December 7, 1998, for approval of transfer of licenses for several hydropower projects, including the Medway Project No: 2666, to Penobscot Hydro, Inc., is pending before the Commission. Any conditions placed on Bangor Hydro's license, if issued, also would be transferred to Penobscot Hydro, if the transfer is approved.

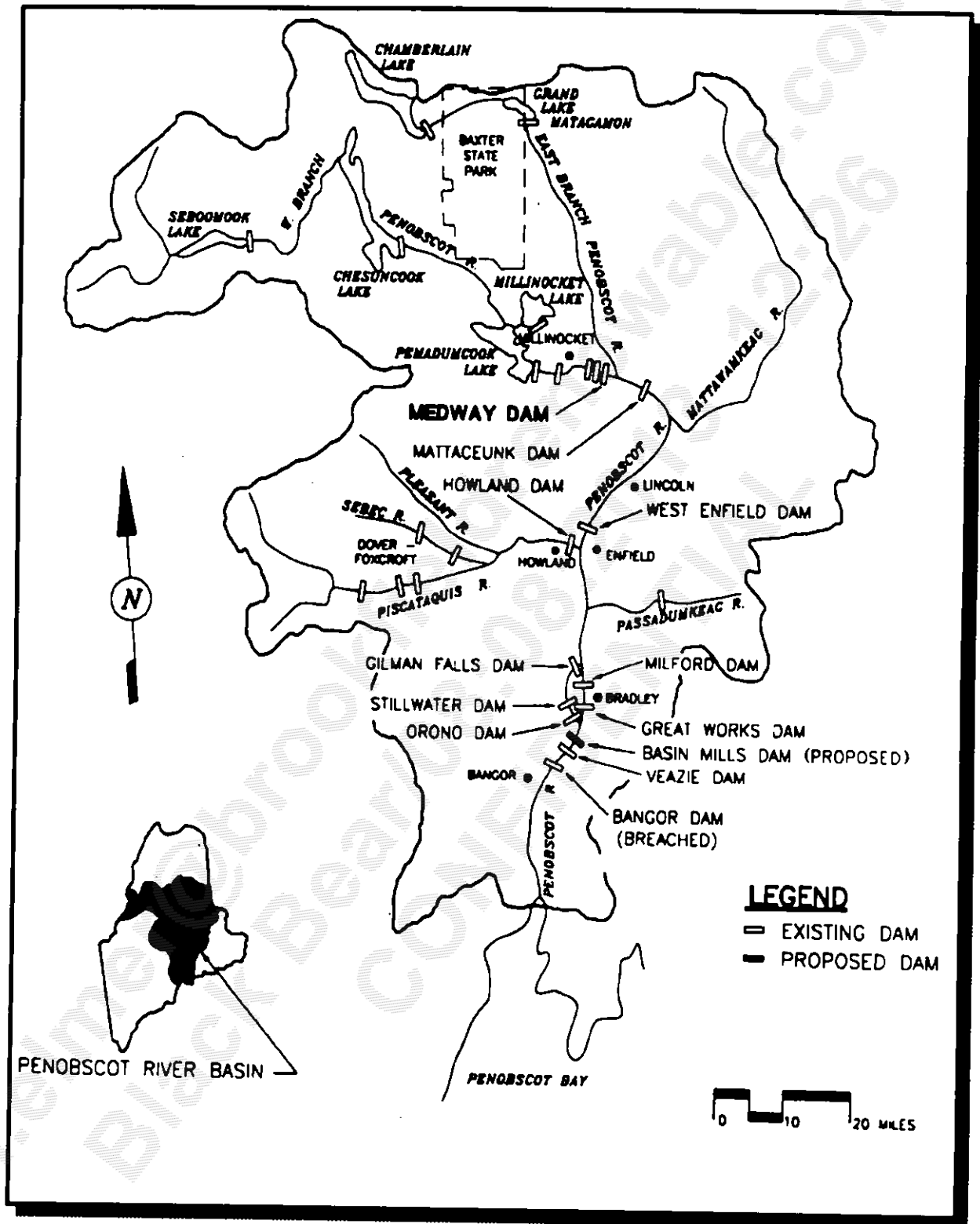


Figure 1. Location of the Medway Project and selected other FERC-licensed projects in the Penobscot River Basin (Source: Bangor Hydro as modified by staff).

In this final environmental assessment (FEA), we: (1) assess the effects of operating the project as proposed by Bangor Hydro, (2) analyze alternatives to Bangor Hydro's proposal, and (3) recommend whether or not to issue a new license to Bangor Hydro.

B. Need for Power

Bangor Hydro is a public utility serving about 100,000 residential, commercial, and industrial customers in an area of about 5,000 square miles in eastern Maine. Bangor Hydro has owned and operated the Medway Project since its purchase from Penobscot Power Company in 1931. In addition to the Medway Project, Bangor Hydro owns and operates six other hydroelectric facilities on the Penobscot, Stillwater, and Union Rivers. The project has helped meet customer's power requirements for nearly 76 years. The project accounts for 3.44 MW of Bangor Hydro's total hydroelectric resources of 31 MW. Bangor Hydro does not have enough generation to supply its system load and contracts for generation with neighboring utilities.

Bangor Hydro is a member of the New England Power Pool (NEPOOL). NEPOOL forecasts an average annual increase in peak capacity demand of 1.1 percent during the summer months and 1.2 percent during the winter months for the 1996 to 2005 planning period. During the same period, NEPOOL forecasts an annual decrease in planned capacity of 0.7 percent during the summer months and 0.3 percent during the winter months. NEPOOL shows the current reserve margin as 16.6 percent and this is expected to decrease to 5.1 percent by 2005. Without additional capacity, NEPOOL capacity will fall below the North American Electric Reliability Council's 15 percent recommended reserve margin by 2000. The electricity generated from the project would benefit the region by providing a portion of the needed regional power.

If relicensed, the project would continue to meet part of Bangor Hydro's needs and a small part of the region's needs. In addition, the project would continue to displace fossil-fueled electric power generation the regional utilities now use, and thereby conserve nonrenewable fossil fuels and reduce the emission of noxious byproducts caused by the combustion of fossil fuels.

III. PROPOSED ACTION AND ALTERNATIVES

A. Applicant's Proposal

1. Project Facilities and Operations

The Medway Project consists of: (1) a 343-foot-long, 20-foot-high concrete gravity dam surmounted by 4-foot-wide, 10-inch-high flashboards, with an impoundment elevation of 259.3

feet mean sea level (msl) with flashboards in place; (2) a 64-foot-long concrete gravity forebay wall; (3) a non-functioning upstream fishway; (4) a 120-acre impoundment at elevation 259.3 feet (normal impoundment level); (5) a 170-foot-long, 34-foot-wide, 71-foot-high brick powerhouse containing five generating units with a total installed capacity of 3.44 MW; (6) an approximate 144-foot-long, 3-kilovolt (kv) underground transmission line; and (7) appurtenant facilities (figure 2).

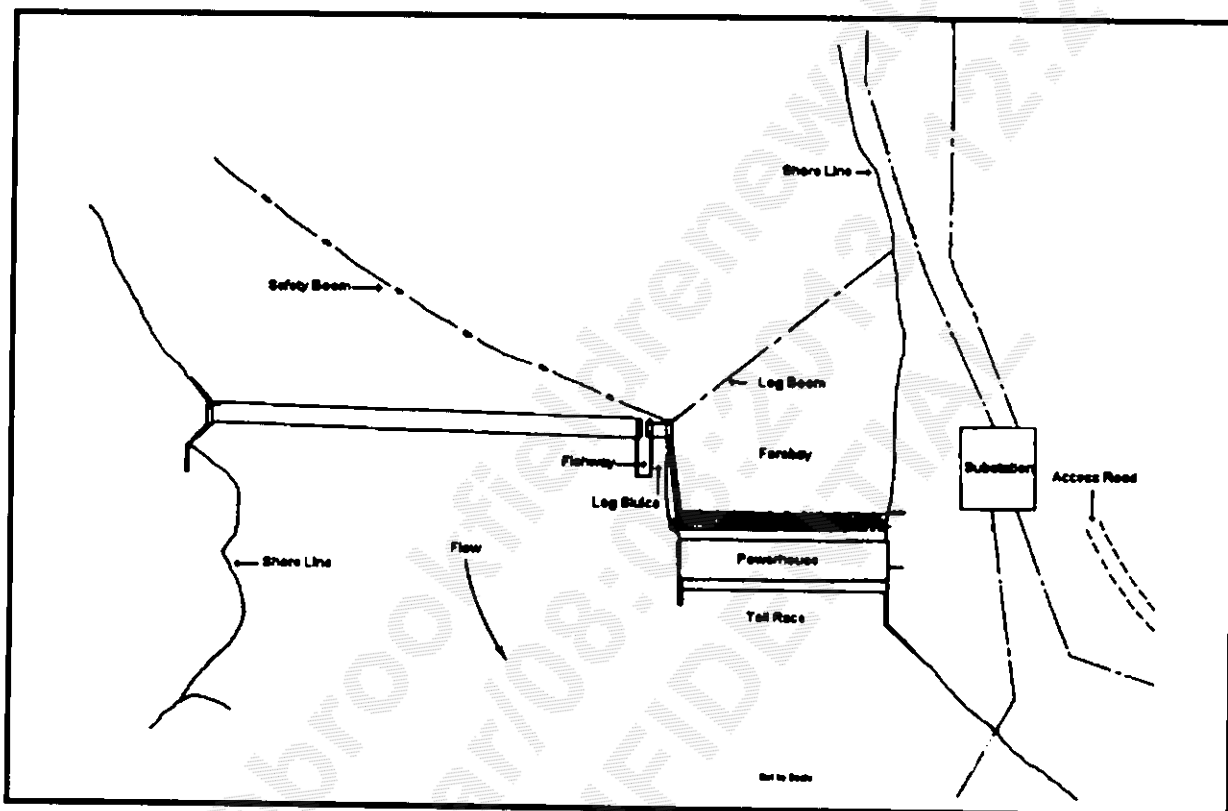


Figure 2. Medway Hydroelectric Project facilities (Source: Bangor Hydro, as modified by staff).

Bangor Hydro proposes to continue to operate the project in a run-of-river mode. The Medway powerhouse was fully automated in 1995 and is remotely monitored from Veazie, Maine.

2. Proposed Environmental Measures

Bangor Hydro proposes to operate the project as described above, with the following protection and enhancement measures.

- ▶ Construct an upstream trough fishway for eels and operate the facility annually from June through September, and also in May if flows permit.

- ▶ Retrofit the non-functioning upstream fishway with a downstream bypass system for eels and operate the downstream passage during the evening hours every day between August 15 and November 15.
- ▶ Monitor effectiveness of both eel passage systems using time-lapse video recorder.

In the fall of 1995, Bangor Hydro constructed a launch for hand-carried-boats on the north shore of the West Branch of the Penobscot River, about 200 feet upstream of the project boat barrier, and a canoe portage around the dam, and installed informational/warning signs. 2/ No additional recreation enhancements are proposed and none has been recommended by the resource management agencies.

B. Staff's Modification to Bangor Hydro's Proposed Project

We considered what, if any, additional protection, mitigation, and enhancement measures would be beneficial to those resources affected by the project and its operation. In addition to Bangor Hydro's proposed protection measures, we recommend: (a) developing a monitoring program in consultation with the resource agencies to ensure compliance with run-of-river operation, (b) developing final design of the eel passage facilities and the monitoring program in consultation with resource agencies and PIN to ensure the facilities are functioning as intended, and (c) providing a copy of the FERC Form 80 recreation report to the resource agencies to advise them of changing recreation demands at the project.

C. No-Action Alternative

Under the no-action alternative, the project would continue to operate under the terms and conditions of the existing license, and no new environmental protection, mitigation, or enhancement measures would be implemented. The no-action alternative is the benchmark from which we compare the proposed actions and action alternatives.

D. Alternatives Considered But Eliminated From Detailed Study

We considered the following alternatives (federal takeover, non-power license, and project retirement with and without dam removal) to Bangor Hydro's proposal but eliminated them from detailed study because they are not reasonable in the circumstances of this case. The Department of the Interior,

2/ On August 7, 1995, the Commission issued an order approving the recreation facilities pursuant to article 35 of the existing license.

(Interior) and the PIN felt that we prematurely dismissed project retirement with dam removal in Scoping Document 1 by considering only detrimental but not beneficial impacts of dam removal. We agreed in Scoping Document 2 to evaluate this alternative in greater detail in the EA. We still believe, however, that this alternative is not reasonable in the circumstances of this case, and we provide a more comprehensive analysis of our reasons below, including beneficial and adverse effects associated with this alternative.

1. Federal Takeover

We do not consider federal takeover and operation of the project to be a reasonable alternative. Federal takeover and operation of the project would require Congressional approval. While this fact alone does not eliminate this alternative from further analysis, there is no evidence to indicate that federal takeover should be recommended to Congress. No party has suggested that federal takeover would be appropriate, and no federal agency has expressed an interest in operating the project.

2. Nonpower License

Issuing a nonpower license would not provide a long-term resolution of the issues--principally improvements to aquatic and fishery resources. A nonpower license is a temporary license that the Commission would terminate whenever it determines that another governmental agency would assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no government agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and we have no basis for concluding that the project should no longer be used to produce power. Issuing a nonpower license, therefore, is not a realistic alternative in these circumstances.

3. Project Retirement (With and Without Dam Removal)

Project retirement could be accomplished with or without dam removal. The primary concern raised by PIN and Interior, who requested that we examine dam removal, is the restoration of natural free-flowing riverine conditions. Project retirement without dam removal would involve denial of the relicense application and surrender or termination of the existing license with appropriate conditions. However, the dam and reservoir would remain and the equipment used to generate power would be disabled or removed. Because the project dam and works would remain, project retirement without dam removal would not accomplish the agencies' objective. No one has suggested that project retirement without dam removal should be considered.

Project retirement with dam removal would similarly involve denial of the relicense application and surrender or termination of the existing license with appropriate conditions regarding the procedures for removal of the project dam and associated works and for site rehabilitation. Such an action would result in a number of effects, some beneficial and some adverse.

- Dam removal would convert a 120-acre, 1.8-mile-long impoundment to a free-flowing river. Such flow would not represent a return to a historical natural hydrograph, however, because flows are primarily controlled by releases from upper basin Ripogenus (FERC No. 2572) and Penobscot Mills (FERC No. 2458) Hydroelectric Projects.
- Dam removal would result in unimpeded fish passage between Mattaceunk dam and East Millinocket dam for resident and anadromous fish species.
- Conversion of the project reservoir from a lentic to a lotic system would likely result in concomitant changes in aquatic biological communities. Species more characteristic of higher velocity riverine habitats would likely increase in abundance, while those characteristic of slower systems would decrease. Similarly, existing wetlands (including non-persistent/persistent emergent and submerged macrophytes) developed along the edges of the reservoir and backwater sloughs would likely be lost or altered from a reduced water table. In time and with appropriate rehabilitative efforts, riverine and riparian habitats would reestablish, likely in greater quantity than they presently exist due to the increase in floodplain area now inundated.
- Changes in water quality would follow dam removal. Although state water quality standards are met under existing operation, small improvements in some parameters, such as dissolved oxygen and temperature, may result from increased aeration and reduced retention times in a free-flowing system compared to the reservoir.
- Recreational opportunities would change from those based on a reservoir to those based on a free-flowing river. For example, local river angling opportunities would increase and unimpeded boat passage would result from the removal of the dam. The boat launch constructed by Bangor Hydro in fall of 1995 would no longer be functional and would need to be modified and maintained by another entity if such a facility was desired (A boat launch is available at the downstream Mattaceunk Project [FERC No. 2520] that could provide access to the project river reach). The canoe portage around the project dam also recently established by Bangor would no longer be needed.

The project impoundment represents about 0.2 percent of the reservoir area in the West Branch (59,340 acres of reservoir are associated with the Ripogenus and Penobscot Mills Hydroelectric Projects [FERC 1996]). About 1.8 miles of free-flowing river would be added to the basin. There are other more desirable and higher quality free-flowing reaches nearby. For example, 21 miles of renowned whitewater boating and productive salmon fishery are found on the West Branch between Ripogenus dam and Ambajejus Lake above the project; many miles of productive tributaries also contribute to this reach. In addition, over 59 miles of lake and smooth water river boating are found on the Upper West Branch Penobscot (Maine Department of Conservation and National Park Service 1982). River boating is also popular on the nearby East Branch Penobscot from Medway to Grand Lake Matagamon, a distance of 42 miles, with back country excursions providing for trips of up to 71 miles in length (Maine Department of Conservation and National Park Service 1982).

- Dam removal would result in short-term erosion and sedimentation that could adversely affect fish and wildlife. Some sediments that may be laden with mercury would be resuspended, flushed downstream, and likely redeposited in and below the next reservoir.
- Project generated employment and some or all of the project-generated tax revenues would be lost.
- The approximately 29 gigawatt-hours of average annual electricity produced by the project would be lost, which has an average annual value of about \$1.0 million. The Medway Project is used to meet the energy needs of the local area, the lost power would have to be replaced, likely from other power producers using fossil-fuel fired generation facilities and at greater ratepayer costs.
- We estimate it would cost about 1 to 1.5 million dollars to remove the dam.

Although there would be an increase in the amount of free-flowing river within the West Branch, clearly a highly regulated river, and there would be associated benefits with such a free-flowing system, we believe the benefits of removing this dam and its small, compact reservoir would be limited and localized and would not offset the high economic cost. This stretch of the river is unlikely to provide the same attraction and use as the renowned whitewater boating and landlocked salmon fishery found in the upper reaches of the West Branch. Moreover, appropriate measures have either been implemented (canoe portage and boat launch) or are being proposed by the applicant (eel passage, continued run-of-river operation) or are being recommended by

staff, and the resource agencies (reservation of authority to address future fish passage problems, periodic review of recreational needs, and monitoring of mercury levels in fish and sediments) to adequately address current and future resource needs, particularly considering the very limited issues associated with this project (see Section V of this EA).

Furthermore, no one has advocated dam removal. Both Interior and PIN state in their comments on the DEA, that this alternative required a more comprehensive analysis. Neither agency, however, offered additional evidence contrary to the conclusions stated above that would support dam removal. Considering both the positive and negative effects of dam removal, we believe project retirement (with or without dam removal) is not a reasonable alternative for reasons identified above.

IV. CONSULTATION AND COMPLIANCE

A. Agency Consultation

The Commission's regulations require applicants to consult with the appropriate resource agencies before applying for a license. This consultation is the first step in complying with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Pre-filing consultation must be complete and documented according to the Commission's regulations.

When the Commission issues a notice that the application is ready for environmental analysis, formal comments may be submitted by concerned entities according to section 4.34(b) of the Commission's FPA regulations. Comments from concerned entities are made part of the record and are considered during review of the proposed project.

The Notice of Application Ready for Environmental Analysis was issued on April 21, 1998. Interior and PIN responded by letters dated June 17 and June 19, 1998, respectively.

B. Interventions

In addition to filing comments, organizations and individuals may petition to intervene and become a party to the licensing proceedings. On August 22, 1997, both the PIN and Interior requested and were granted intervenor status.

C. Scoping

Scoping Document 1 (SD1), which asked for written comments on the issues to be addressed in the EA, was issued on June 23,

1997, and noticed in the *Federal Register* on June 27, 1997, and published twice in the *Penobscot Times* in June 1997. We received comments on SD1 from Bangor Hydro (letter from Kathleen Billings, Director, Bangor Hydro, Bangor, Maine, August 18, 1997), PIN (letter from John Banks, Director, Department of Natural Resources, PIN, Old Town, Maine, August 21, 1997), and Interior (letter from Kerry O'Hara, Attorney, Interior, Washington, D.C., August 22, 1997). On October 20, 1997, Bangor Hydro filed responses to PIN and Interior comments on SD1. Scoping Document 2, addressing these comments, was issued on November 24, 1997.

D. Comments on the Draft Environmental Assessment

PIN, Interior, and MDEP commented on the DEA by letters dated December 11, 1998, December 14, 1998, and December 24, 1998, respectively. Appendix A contains the comments and our responses to them. This FEA includes changes made as a result of our consideration of these comments

E. Section 18 Fishway Prescription

Section 18 of the FPA (16 U.S.C § 811) directs the Commission to require licensees to construct, maintain and operate fishways prescribed by the secretaries of Commerce and Interior.

There are currently no functioning fish passage facilities at the Medway Project, but the applicant proposes to install a fishway for upstream and downstream passage of American eels. By letter of June 17, 1998, Interior declined to issue a fish passage prescription until post-licensing consultations are completed with the applicant over design and monitoring of eel passage facilities, and requested the Commission to reserve prescription authority until then. Also, although there are no existing fishery management plans to restore migratory fish, including Atlantic salmon runs in the West Branch, such plans could materialize in the future. We feel it appropriate to recommend that the Commission include a license article reserving authority for fishway prescription by Interior at a later date.

F. Water Quality Certification

Under section 401(a) of the Clean Water Act, ^{3/} the Commission may not issue a license for a hydroelectric project unless the state certifying agency has either issued water quality certification for the project or has waived certification by failing to act on a request within a reasonable period of

^{3/} 33 U.S.C. § 1341(a)(1).

time, not to exceed one year. 4/

Bangor Hydro applied to the Maine Department of Environmental Protection (DEP) for a water quality certificate for the Medway Project on March 14, 1997, and on February 23, 1998, simultaneously withdrew and refiled the pending application. The DEP granted certification on December 23, 1998, specifying eight terms and conditions for a new license for the project.

Substantive certification requirements are: 1) maintaining impoundment water level within 6 inches (in) of full pond elevation when flashboards are in place, and within 6 in of spillway crest elevation when flashboards are absent; 2) run-of-river operations except during approved maintenance activities, high flow periods, and operational emergencies beyond the licensee's control; 3) monitoring run-of-river operations; 4) installing, operating and monitoring upstream and downstream American eel passage facilities; and 5) monitoring mercury and polychlorinated biphenyl (PCB) contamination in fish and sediments from the project impoundment and downstream areas.

V. ENVIRONMENTAL ANALYSIS

Here we describe the general environmental setting of the project area, then discuss the project's effects on the existing resources. Only resources that would be affected, or about which comments or recommendations have been made by interested parties, are analyzed in detail in this DEA. Because Bangor Hydro proposes no changes to the project (except for constructing and operating eel passage facilities) or any major land-disturbing activities and because no one has identified through scoping any concerns relating to geology and soils, 5/ recreation and land use, visual resources, and cultural resources, 6/ we have

-
- 4/ Section 401(a)(1) requires an applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters to obtain from the state in which the discharge originates certification that any such discharge would comply with applicable water quality standards.
 - 5/ The cumulative effects of hydropower projects on sediment retention are addressed in the context of aquatic habitat in Section V.C.1.
 - 6/ Bangor Hydro conducted an archeological and historic sites survey. The survey determined that no known archeological or historic sites would be affected by the continued operation of the project. The Maine State Historic Preservation Office concurs and states that there are no

determined that these resources would not be affected by continued operation; therefore, these resource areas are not analyzed in detail in this FEA. However, to comply with the National Historic Preservation Act, if the Medway Project is licensed, an article would be included in the license, to protect any archeological or historic sites that may be discovered during project operation and maintenance.

By letters dated June 17, 1998, and June 19, 1998, Interior and PIN, respectively, agree that the existing project facilities are adequate to meet current recreational access needs, but recommend that Bangor Hydro continue to monitor recreational use through the Commission's Form 80 process ^{1/} and to periodically consult with the FWS, NPS, PIN, and appropriate state resource agencies regarding the adequacy of the recreational access measures. Although Form 80 information is available to anyone upon request, it is normally only filed with the Commission. We recommend that Bangor Hydro also file the Form 80 information with the FWS, NPS, PIN, and Maine Department of Conservation (DOC) when filing the form with the Commission to advise the agencies of changing recreation demands at the project.

A. General Setting

The Penobscot River drainage basin is about 125 miles long and up to 115 miles wide and has a total drainage area of about 8,750 square miles; the contributing drainage of the West Branch above the Medway Project is about 2,113 square miles. The basin, which is 95 percent forested, is located in central Maine and empties into the Penobscot Bay about 20 miles south of Bangor.

West Branch water resources have been used throughout the 19th and 20th centuries to transport lumber and paper mill materials and products and in industrial processes, including

properties in the Medway Project area of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966 (letter from Earle G. Shettleworth, Jr., State Historic Preservation Officer, Maine Historic Preservation Commission, Augusta, Maine, December 20, 1996).

^{1/} Unless specifically exempted, every licensee is required to collect and report to the Commission every 6 years information on recreational facilities and their use at each project (18 CFR §8.11). Data collected include number and type of recreation facilities, facility capacity, number of annual visits to all recreation areas, and project costs and revenues associated with all recreation areas. Bangor Hydro filed their last Form 80 evaluation on April 1, 1997; the next one is due April 1, 2003.

hydroelectric generation. Flows from several large impoundments in the Penobscot Mills and Ripogenus Projects, located above the Medway Project, are regulated to meet the water and energy requirements of these industries. Paper mills continue to play a significant role in the local economy.

Nine Commission licensed projects are located on the main stem of the Penobscot River below the Medway Project (figure 1). Thirteen other Commission licensed projects are located in the basin. The Medway Project is the first in a series of dams on the West Branch, that begin about 0.6 mile above the confluence of the East and West Branches of the Penobscot River, which join to form the Penobscot River. Numerous other state authorized dams are also located within the basin (see FERC 1996 for list).

B. Cumulative Effects

According to the Council on Environmental Quality's regulations for implementing NEPA (50 CFR §1508.7), an action may cause cumulative impacts on the environment if its impacts overlap in time and/or space with the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

Based on comments received during scoping, we've identified eels, sediment retention and disruption of natural flushing, and river temperature patterns, as potentially being cumulatively affected (positively or negatively) by relicensing of the Medway Project. We define the geographic and temporal scope of our cumulative analysis and the reasons for choosing the resources below.

1. Geographic Scope

We define the geographic scope of analysis for cumulatively affected resources by the physical limits or boundaries of: (1) the proposed action's effect on the resource, and (2) contributing effects from other hydropower and non-hydropower activities within the Penobscot River.

The geographic scope of our cumulative impact analysis will include the Penobscot River Basin. We chose this geographic area for eels because the succession of dams in the basin, including the Medway Project dam, and the commercial and sport exploitation of the eel fishery in the basin may cumulatively affect eel populations. The geographic scope of our cumulative impact analysis on sediment retention and disruption of natural flushing, and river temperature patterns, will also include the Penobscot River Basin because the succession of dams in the

basin, including the Medway Project, may cumulatively (1) retain sediments beyond natural levels and cause accumulation of organic material and contaminants, and (2) increase summer temperatures through increased water residence times.

2. Temporal Scope

The temporal scope of our cumulative analysis will include past, present, and future actions and their effects on the above resources. We will look 30 years into the future, concentrating on the effects resulting from foreseeable actions. The historical discussion will, by necessity, be limited to the amount of available information.

C. Proposed Action and Action Alternatives

Here we discuss effects of project alternatives on environmental resources. For each resource, we first describe the affected environment--which is the existing condition and baseline against which we measure effects of the proposed project and any alternative actions--and then environmental effects of the project, including proposed enhancement measures.

1. Aquatic Resources

Affected Environment

Water Quantity

The project impoundment is narrow with generally steep banks, particularly on the north side. Water enters the project upstream through the East Millinocket tailrace, a high-velocity habitat extending several hundred feet below that dam into the Medway reservoir. The upstream half of the reservoir below the tailrace is generally shallow with several low-velocity backwater areas. The lower half of the impoundment approaching the project dam becomes progressively deeper, with increasingly slower current velocities.

The project area supports an abundant, complex aquatic and riparian flora reflecting different habitats existing there. Except for Medway and the town of East Millinocket, the project is surrounded by undeveloped forestland.

The run-of-river project (figure 2) consists of a combined 170-foot (ft) powerhouse and 343-ft spillway dam; average spillway height is 20 ft, excluding flashboards. The spillway is topped with fixed, disposable, 4-ft-wide, 10-inch-high (in) high vertical flashboards supported on stringers. The impoundment behind the dam extends upstream approximately 1.8 miles (mi), and under normal flow conditions has a 120-acre (ac) surface area. Routine reservoir surface elevation is 259.3 ft above mean sea

level (msl), which is maintained when flow is at or below turbine capacity. Hydraulic capacity of the project is 3,450 cubic feet per second (cfs), which prevails more than 58 percent of the time.

Flows entering the project in excess of turbine capacity are spilled over the flashboards and through various sluice gates. The flashboards fail and collapse when impoundment level reaches and exceeds 261.3 msl; this occurs about once a year during high spring flows. Flashboards cannot be replaced until river flow falls below turbine capacity, at which time the impoundment is lowered to its permanent crest of 254.5 msl to permit safe flashboard replacement.

The Penobscot River Basin's total drainage area is 8,750 square miles (sq mi), 2,113.5 sq mi (about 24 percent of the total) of which feed the West Branch and contribute to the Medway Project. The entire Penobscot and West Branch drainages are highly impounded, and flows highly regulated and more stable than would be the case in a more natural, less impounded situation. The West Branch above the project has 15 dams and many large storage reservoirs; the West Branch and Penobscot below the project carries 9 dams. The upstream dam nearest the Medway Project is the run-of-river East Millinocket Project (part of the Penobscot Mills Hydroelectric Project, FERC No. 2458), only 1.9 mi away; an area only 2.5 sq mi between the two projects drains directly into the Medway Project.

Flow records from 1972 through 1985 at Dolby Station at the East Millinocket Project exhibit a 35,974 cfs maximum and a 3,979 cfs mean. Considering the proximity of the projects and the minimal drainage area between them, we believe these data are representative of flows at the Medway Project.

Bangor Hydro employs an automated system to monitor reservoir surface elevation and generation flow, and to operate gates to maintain reservoir elevation.

The Penobscot Mills Project releases a 2,000-cfs minimum flow, and that flow regularly enters the Medway Project through the East Millinocket Project. The 2,000-cfs flow is also the 7Q10 (7-day average low flow; one in 10 year occurrence), reflecting the regulated West Branch flow regimen. By comparison, an estimated unregulated 7Q10 for the West Branch is only 126 cfs.

Water Quality

Water entering the Medway Project is used exclusively for power generation or passed over the dam. Water enters the project primarily from the East Millinocket Project, with much smaller contributions from runoff and the East Millinocket waste

treatment plant, which provides treatment for municipal sewage and paper processing wastes from the East Millinocket Mill. The plant lies on the north shore of the upstream end of the reservoir. There is no other municipal or industrial use of project water.

Primary wastewater treatment facilities were constructed more than 20 years ago. Prior to then untreated effluents were discharged directly into the reservoir, resulting in serious water quality degradation, particularly during summer. Secondary treatment was introduced during 1976. The collective treatment technologies have produced significant and continuing improvements in project water quality.

As a result of pollution abatement, during 1985 the project's water quality rating was upgraded to Class C in the Maine surface water quality classification system. Among other criteria, Class C waters must be suitable for municipal use (after suitable treatment), fish habitat and fishing, recreation in and on the water, navigation and hydroelectric generation. Class C standards cover coliform bacteria levels and dissolved oxygen (DO) content of subject waters. DO at all times must exceed 60 percent saturation or 5 parts per million (ppm) concentration, whichever is greater. Class C waters must be of sufficient quality to support all fish species indigenous to receiving waters, and to maintain structure and function of the resident biological community. Project waters above and below the dam meet these standards.

Since 1992 the PIN has monitored DO below the project but above confluence of the East and West Branches. Saturation values ranged from 82 to 117 percent, and DO concentrations from 7.2 to 10.4 ppm. In response to consultation recommendations by Maine Department of Environmental Protection (DEP) and PIN, Bangor Hydro conducted DO and coliform bacterial surveys in the project reservoir during summer 1995; all results met minimum standards for Class C waters. DO samples taken during the survey did not fall below 5.9 ppm concentration or 70 percent saturation.

Computer water quality modeling conducted by DEP as a portion of a recent waste allocation study indicates Class C conditions would persist in the project area in the future under worst case flow and waste loading conditions.

During application pre-filing consultation PIN, FWS and DEP recommended that the applicant survey the invertebrate community (primarily insects) downstream from the Medway tailrace to determine whether community structure met state Class C standards for flowing waters. The applicant conducted a detailed analysis of community structure and composition and associated abiotic variables following tentative DEP protocols summarized in "Method

Table 1. Mercury content, Medway reservoir sediment samples, September, 1995.

Site-sample	Mercury wet weight (ppm)
1-A	0.14
1-B	0.17
2-A	0.47
2-B	0.09

for Biological Sampling and Analysis of Maine's Waters." Results indicate the area immediately below the dam exceeds Class C community standards; DEP feels the area meets Class B criteria, a status reflecting high environmental quality.

Also during the application pre-filing consultation, PIN and FWS also identified mercury as a toxic element that could be of concern in Medway reservoir sediments. Mercury contamination does not arise from the project. Mercury compounds are present, however, in elevated levels in waters and sediments in many upstream areas. Contaminated sediments passing through the project could collect in impoundment coves and backwaters and be retained there.

To explore this issue, during September 1995, the applicant sampled sediments for mercury content analysis from two reservoir areas in which contaminated sediments were likely to accumulate. The collection sites, assumed representative of contamination in the impoundment, were selected in cooperation with PIN. Comparison of results of these analyses to those of a mercury survey for upstream impoundments conducted during relicensing of the Penobscot Mills Project, and to other historical watershed data, indicate mercury content of Medway Reservoir sediments is not elevated relative to similar surrounding areas.

Mercury content in impoundment sediments ranged from 0.09 to 0.47 ppm, with a 0.22 ppm average (table 1). Mercury content in sediments surveyed during 1988 for the Penobscot Mills Project ranged from greater than 0.03 to 0.3 ppm, with a 0.2 ppm median. During that survey, mercury content in sediments from the East Millinocket Reservoir measured 0.29 ppm. Mercury concentrations from historical data for the broader watershed area ranged from 0.01 to 0.2 ppm.

Fisheries Resources

Comprehensive sampling to characterize the fish fauna of the

Medway impoundment was neither requested by resource agencies during consultation nor conducted by the applicant, and detailed data about composition of the reservoir ichthyofauna is not available from resource agencies or other sources. However, qualitative composition of the resident fish fauna of the East Millinocket impoundment, immediately upstream from this project, was surveyed during relicensing of the Penobscot Mills Project. The two impoundments are physically similar habitats, and we feel the East Millinocket survey offers a reasonable estimate of composition of the Medway reservoir fish fauna. Species found at the East Millinocket Project are listed in table 2.

Although Bangor Hydro didn't specifically survey the project reservoir fish fauna, smallmouth bass and American eels were collected there for the tissue mercury analysis discussed below. These and other species captured coincidentally during that effort are indicated in table 2 by asterisks. Species not reported for the East Millinocket reservoir did not appear during the limited sampling.

Fishing in the reservoir is limited, probably because absence of boat access, but during 1988 PIN conducted angling sampling there of smallmouth bass. Forty-four specimens were taken within 4 hours (hrs), a rate suggesting the impoundment supports a smallmouth bass population comparable to other under-developed sections of the Penobscot River.

Limited documentation also exists of white suckers occupying the reservoir; PIN and DEP captured specimens using various techniques at different times in the recent past.

Anadromous salmonids and clupeids do not appear to occupy the project area, and there are no current state or federal plans to restore anadromous species in the West Branch.

Catadromous American eels are present throughout the West Branch drainage, including the project area. Eels are targets of active weir and pot fisheries upstream from the Medway Project, and of commercial harvesting mainly of emigrating adults downstream from it.

In summary, although fish sampling in the project impoundment has been limited, it is likely the project supports most species found in similar habitats in surrounding waters, and smallmouth bass are present in suitable abundance to support a recreational fishery.

Environmental Impacts and Recommendations

Project Operation and Compliance Monitoring

Bangor Hydro proposes no change to run-of-river operation,

Table 2. Expected Medway reservoir ichthyofauna. An asterisk indicates species encountered during 1995 collections for mercury analysis specimens.

COMMON NAME	SCIENTIFIC NAME
landlocked Atlantic salmon	<i>Salmo salar</i>
rainbow smelt	<i>Osmerus mordax</i>
smallmouth bass	<i>Micropterus dolomieu</i> *
chain pickerel	<i>Esox niger</i>
white perch	<i>Morone americana</i>
yellow perch	<i>Perca flavescens</i> *
redbreast sunfish	<i>Lepomis auritus</i> *
pumpkinseed	<i>L. gibbosus</i> *
brown bullhead	<i>Ictalurus nebulosus</i>
American eel	<i>Anguilla rostrata</i> *
white sucker	<i>Catostomus commersoni</i>
longnose sucker	<i>C. catostomus</i>
fallfish	<i>Semotilus corporalis</i>
creek chub	<i>S. atromaculatus</i>
blacknose dace	<i>Rhinichthys atratulus</i>
common shiner	<i>Luxilus cornutus</i> *
golden shiner	<i>Notemigonus crysoleucas</i>
slimy sculpin	<i>Cottus cognatus</i>
banded killifish	<i>Fundulus diaphanus</i>
burbot	<i>Lota lota</i>
ninespine stickleback	<i>P. pungitius</i>

but does not define limits on water fluctuations. Interior concurs with no changes in project operation and recommends that water level fluctuations above the dam are kept to a minimum (plus or minus one foot from full pond elevation) at all times. PIN recommended that, to the extent practical with existing sluice gates and turbines, Bangor Hydro be required to make every effort to restrict impoundment fluctuations, during the period May 15 to June 30, to within one foot of normal full pond

elevation for protection of smallmouth bass nesting activities.

We recognize the potential environmental benefits of consistent flows in this situation. Run-of-river operation would continue to benefit aquatic life and water quality throughout the West Branch Penobscot River. Therefore, we initially recommended that Bangor Hydro continue run-of-river operation with a target impoundment surface elevation of 259.3 feet msl, with an allowable fluctuation of not more than plus or minus one foot from the target elevation.

That recommendation would allow all inflows into the impoundment to approximate outflows from the impoundment, and consequently, the stable, high-quality aquatic environmental conditions presently existing in and adjacent to the project would continue, and smallmouth bass spawning beds as well as habitat needs of other resident fish would be protected and maintained.

We also recognized in the DEA, however, that there would be periods during which Bangor Hydro would not be able to maintain impoundment target elevation levels, such as high seasonal flows or during operation emergencies, including periods following flashboard failure. We therefore did not categorically recommend adopting the Interior's flow recommendation, but instead proposed that the limits specified by Interior be imposed except during excessively high flows and operational emergencies.

On December 10, 1998, Interior issued a letter of no objection to our proposed slight modification of the their run-of-river recommendation.

In the December 23, 1998, Water Quality Certificate for the project DEP requires run-of-river operation with reservoir level held within 6 inches of full pond elevation except during maintenance and high flow periods, and following flashboard failure. This is more restrictive and would provide a little more environmental protection than Interior's recommendation.

During the application pre-filing consultation, the DEP suggested that the applicant evaluate replacing the disposable flashboards on the spillway with a pneumatic crest control device to limit duration and extent of reservoir level fluctuations. The DEP pointed out that impoundment level can vary as much as 7 ft due to flashboard failures, and flashboards cannot be replaced until flow returns to lower levels. On average, the flashboards fail once a year during the spring high flow periods. Among other things, pneumatic crest control would allow restoring reservoir level after high flow periods more quickly than is possible by replacing lost flashboards. Limiting duration of reservoir level fluctuations could be a stabilizing influence for riparian habitats, and could also provide more consistent nesting

conditions for resident fish species.

While the DEP requested an evaluation of pneumatic crest control system, neither the DEP nor anyone else recommended installing such a system. Because installing the pneumatic crest control system would affect project economics we make our determination in the Comprehensive Development analysis (Section VII).

Interior also recommends that, within three months after license issuance, Bangor prepare a plan to monitor instream flows and impoundment water levels to ensure compliance with the run-of-river operation. The monitoring plan should be developed in consultation with the FWS, U.S. Geological Survey (USGS), DEP, and Maine Department of Inland Fisheries and Wildlife (MDIFW).

The Medway Project is equipped with an automated system that monitors impoundment level, unit output, unit efficiency, and discharge gate position, among other functions. This system results in less fluctuation of reservoir levels than that which would occur with a manned system. A monitoring program adapted to this system could be accomplished easily, and we recommend that Bangor Hydro do so in consultation with the above agencies.

Water Quality

Water quality in the Medway Project is determined primarily by conditions upstream from the project, and to a lesser extent by treatment level applied to the East Millinocket effluent, neither of which is controlled by the applicant. By not contributing contaminants to project waters, and by operating the project under run-of-river conditions, the applicant does much to maintain local water quality. Continued run-of-river operation with limits on reservoir fluctuation would ensure continuation of existing high quality conditions in project waters, which at present meet or exceed standards for Class C water quality. Again, we recommend run-of river operation.

Based on Interior's and PIN's scoping comments, we identified sediment retention, natural flushing disruption and river temperature patterns as conditions that could be cumulatively affected by relicensing this project. Other than continued run-of-river operation, no agency has recommended any measures to address these issues.

Dams can disrupt downstream sediment movement and increase water temperature through reduced velocities and increased retention times. These effects can be exacerbated by the presence of multiple dams on a river system, and can in turn adversely impact habitat conditions for fish and other aquatic biota. We believe that impacts of relicensing the project as proposed upon these variables, relative to existing conditions,

would be minimal to non-existent and probably immeasurable. Temperature patterns in and below the project are controlled primarily by conditions of flows entering the project, and should not change appreciably because of continuing operations. Reservoir sediment distributions and flushing patterns also should not change with continuing run-of-river operations, hence there should be no downstream or drainage basin impacts for these conditions. We conclude that licensing the project as proposed would have no cumulative impacts upon river temperature, flow, and sediment distribution.

Resident Fish Passage

Although resource agencies didn't request studies of the reservoir fish fauna or the possible need for resident fish passage, during scoping PIN questioned project impacts on resident species and recommended post-licensing fisheries studies to evaluate possible passage needs. ^{8/} Their concern stemmed from a recent apparent inability of different sampling programs to capture white suckers in suitable abundance in the project impoundment. In response we issued an Additional Information Request (AIR) to Bangor Hydro on November 21, 1997, requesting a summary of available information on distribution, abundance, and migratory and reproductive behavior of species resident in the project area, with emphasis on white suckers.

Results of the AIR and associated information indicate the white sucker population density in Medway Reservoir may be comparable to that of surrounding areas. The apparent paucity of suckers in the recent sampling efforts is probably not representative of the impoundment at large, and white suckers are ubiquitous and abundant in the West Branch drainage. Although MDIFW has not identified any specific resident fishery management plans for the West Branch, the DEP water quality certificate for the project concluded that the applicant's proposal appears to be adequate to achieve and maintain the suitability of project waters as habitat for fish. Neither Interior or MDIFW recommend resident fish passage facilities. There is little or no evidence supporting installation of resident fish passage.

Data provided by PIN before and during DEA review about resident reservoir fish populations remain too sketchy to support their position that the resident populations may be under stress because of project operations. Based on this information, and considering the MDIFW position on resident species management, we conclude that continuing studies of white suckers or other impoundment fish are not warranted, and passage facilities for

^{8/} In their December 14, 1998, comments on the DEA, Interior agreed with PIN that further analysis of the issue of resident fish passage is required.

resident species are unnecessary.

If additional information arises during the course of a new license linking project operations to stress or passage needs for resident fish species, PIN or resource agencies can request, through our standard license reopener article, that the Commission reexamine the issue and implement appropriate remedial measures. Moreover, Interior can prescribe resident fish passage measures at a future date through the reservation of authority that we are recommending.

Eel Passage

Having consulted with PIN and state and federal resource agencies, Bangor Hydro proposes to provide as a project enhancement upstream and downstream eel passage facilities. Interior requests that the Commission require final plans for fish passage facilities for eels at the Medway Project, and thus has requested reserved authority to prescribe fishways. Interior also requested protocols for monitoring the effectiveness of all such measures be developed following consultation between Bangor Hydro, FWS, state agencies, and PIN. PIN concurs with the proposed passage measures. PIN also believes that video monitoring represents a relatively direct and inexpensive way of verifying usage (including timing of passage and sizes passed) by eels and other species, but may not provide sufficient information on eel passage efficiencies.

The proposed upstream eel passage would consist of a roughly 18.5-inch by 8.3-inch cross-section metal trough carrying a constant 25 gallon per minute flow during the June-September migratory period. Downstream passage would include a 12-in siphon pipe configured to attract eels and underwater lights to steer the photophobic eels into the passageway. The downstream system would use up to 15-cfs flow and operate during August-November. Efficiencies of both systems would be monitored using video recorders.

Since any obstruction hindering eel migration would have an overall negative impact upon reproductive potential of a drainage basin eel population, applying eel passage technologies to the Medway dam would have a positive cumulative impact upon the eels in the Penobscot River Basin. The overall effect would likely be slight, considering the highly impounded nature of this basin, but nevertheless positive to eel population dynamics in that it would decrease mortality during the migratory phase of the animals' life cycle. The passage facilities proposed facilitate inland movement by juvenile eels, and seaward passage for reproductive adults.

Because the eel passage facilities and the monitoring system has associated costs to the project, we defer our recommendation

on these measures to the Comprehensive Development analysis (see Section VII). Moreover, the state water quality certificate for the project requires planning, installation, and monitoring of upstream and downstream eel passage facilities.

Mercury Contamination

PIN recommends that Bangor Hydro be required to fund a periodic (e.g., every 5 years) study of mercury contamination in sediment and selected aquatic life from the project area. PIN also recommends that any license issued require Bangor Hydro to provide for periodic (every 5 years) consultation among PIN and other appropriate entities, to review and integrate previous and current data, review potential measures for sediment remediation, and allow for the implementation of any such remedial measures determined at the time to be feasible and applicable to contaminant problems at the Medway Project impoundment. In their December 24, 1998, comments on the DEA, Interior recommended post-licensing monitoring of mercury and signage or other appropriate warnings to inform anglers and other recreational users of the hazards of consuming fish from the impoundment.

PIN's recommendation stems from their belief that the project contributes to the problem of mercury contamination levels in fish, which could affect subsistence-level consumption by PIN, by causing the settling of fine sediments in this reach of the river, and likely increasing the retention of mercury.

In response to PIN concerns about mercury contamination of project reservoir fish, Bangor Hydro, following appropriate protocols, surveyed mercury levels in American eels and smallmouth bass from the impoundment. Initial planning called for tissues from smallmouth bass, white suckers or brown bullhead, and crayfish. Attempts to collect suckers, bullhead and crayfish were unsuccessful however, and American eel, which were available, were analyzed instead. Assays for smallmouth bass were conducted on composite voluntary muscle fillet samples; those for eels were conducted on composite whole body samples (table 3).

Table 3. Mercury content, composite smallmouth bass and American eel samples, Medway reservoir.

Collection location	Species	Hg, wet weight (ppm)
Site A	smallmouth bass	0.53
Site B	"	0.50
Site A	American eel	0.51
Site B	"	0.35

Mercury concentrations in the Medway smallmouth bass composite samples approximate the 50th percentile (0.50 ppm) for comparable data available from five New England states, including Maine, and were below the median (0.57 ppm) for 52 comparable samples representing only Maine. Average mercury concentration for the two Medway samples, 0.515 ppm, fell below average concentrations for the comparison data for Maine alone and New England at large, 0.61 ppm in each case. The Medway values also fall between composite fish mercury concentrations measured in the West Branch by PIN during 1989 for the East Millinocket area, 0.61 ppm, and for North Lincoln 20 mi downstream, 0.26 ppm.

Mercury concentrations in the eel samples fell slightly above and below the State of Maine's guideline concentration for human consumption, 0.43 ppm. Comparison data for the eel samples were difficult to identify, but the Medway values fell midway in the range of concentrations for six comparable assays from Vermont.

We believe these data demonstrate that mercury content for the fish species tested approximate ambient conditions for the West Branch above and below the project in particular, and possibly for New England at large.

In June 19, 1998, comments on the application, PIN points out that many details about measuring and interpreting mercury concentrations from fish tissues are subject to argument, and that values from different types of tissues and composite samples can be easily misinterpreted. We agree, but feel that the values provided by Bangor Hydro for eels and smallmouth bass from the Medway reservoir are adequate for comparing reservoir mercury conditions to local and regional ambient conditions.

Since mercury content in both fish and sediments from the project appear to be related to drainage basin conditions rather

than project operations, we also conclude that licensing this project under conditions proposed would have no cumulative impact upon mercury distribution in the West Branch and Penobscot drainages.

In summary, the project is not a source of mercury contamination. Mercury content in project sediments fell within the range of surrounding areas, and arises from outside sources. Large, regular fluctuations in reservoir levels, commonly associated with storage or peaking operations, do not occur here, except during high flows and when flashboards fail. Such fluctuations have been implicated but not proven to cause increased mercury levels in fish (Welsh 1994; FERC 1996). Prevailing reservoir sediment distributions are not likely to change under continued run-of-river operation, and in any case mercury contamination in aquatic situations in Maine seems to be monitored by state agencies. We do not feel Bangor Hydro is responsible for Penobscot drainage mercury contamination.

As was true for reservoir sediments, mercury concentrations in reservoir fish fell within ranges of values representing local and basin-wide conditions. Since the Medway Project does not contribute to mercury contamination in the West Branch, and since mercury content in the project fish fauna appears to be a function of drainage basin conditions rather than project operations, we do not recommend that Bangor Hydro be required to either monitor mercury contamination in project fish or support monitoring and signage efforts.

Although we do not believe monitoring and further consultation with PIN and other agencies is required, the state water quality certificate for the project requires mercury contamination analysis of white suckers, smallmouth bass, and bottom sediments from the project reservoir and downstream areas. The certificate also requires equivalent analyses for PCB contamination. If new information that links project operations to mercury contamination problems arises, PIN or the resources agencies can request the Commission through our standard license reopener article to reexamine this issue and implement appropriate remediation measures.

Unavoidable Adverse Impacts: None.

2. Threatened and Endangered Species

The FWS states that the threatened bald eagle (*Haliaeetus leucocephalus*) and the endangered peregrine falcon ^{2/} (*Falco peregrinus*) are the only federally-listed species that are known

^{2/} The FWS proposed delisting the peregrine falcon on August 26, 1998 (63 FR 165, 45446-45463).

to occur in the project area (letter from Michael Bartlett, Fish and Wildlife Service, Supervisor New England Field Office, Concord, New Hampshire, July 17, 1998).

Affected Environment

Bald eagle: Bald eagles currently nest both upstream and downstream of the Medway Project (letter from Michael Bartlett, Fish and Wildlife Service, Supervisor New England Field Office, Concord, New Hampshire, July 17, 1998), and feed in riverine habitats along the West Branch throughout the year as long as there is open water (William Neidermyer, Fish and Wildlife Service, Acting Supervisor New England Field Office, Concord, New Hampshire, June 13, 1995). Bald eagles were observed several times throughout the impoundment area during reconnaissance level surveys conducted in the summer of 1995 (Bangor 1997).

Peregrine falcon: The peregrine is believed to use the project area during migration periods (letter from Michael Bartlett, Fish and Wildlife Service, Supervisor New England Field Office, Concord, New Hampshire, August 17, 1995).

Environmental Impacts and Recommendations

Bald eagle: Nesting is not known to occur along the impoundment. Continued run-of-river operation, with the plus or minus six inch elevation change limits, would continue to provide a stable aquatic and riparian environment; therefore, no environmental changes would occur that have any potential for impacting bald eagle foraging or potential nesting habitat. Construction of the eel passage facilities would be of short duration and confined to the area of the powerhouse and dam; consequently, any potential disturbance of foraging eagles in the area during construction activities would be only slightly greater than that which might occur around these structures during normal operation. The addition of the eel passage facilities could benefit bald eagles by improving their forage base. Eels, however, apparently don't represent a significant part of a bald eagle's diet in interior Maine; brown bullhead, white sucker, and chain pickerel are more common components of the diet (Todd et al. 1982, Welsh 1994).

Significantly elevated concentrations of mercury and other contaminants may be factors responsible for limiting reproductive levels in Maine's bald eagles (Welch 1994). Mercury concentration levels can bioaccumulate and biomagnify in higher trophic species, such as the bald eagle, who feeds on contaminated fish (Eisler 1987, Welsh 1994). As discussed in Section C.1, operating in a run-of-river mode, with limited water level fluctuation, would not alter existing sediment patterns in this river reach; large, regular fluctuations in reservoir levels, which have been implicated but not proven to cause

increased mercury levels in fish and eagles (Welsh 1994), would not occur except during high flows and when flashboards fail. Consequently, adverse impacts on the food supply for eagles or the bioaccumulation of mercury and any associated effects on productivity of nearby nesting eagles is unlikely, and probably immeasurable given the small size of the reservoir and the abundance of available foraging habitat (with their own contaminant burdens) closer to known nest sites. We, therefore, conclude that issuing a new license with our recommended enhancement measures would not be likely to adversely impact the bald eagle.

Peregrine falcon: Because of the limited and transient use of the project area by peregrine falcons and because there would be no change in project operation that would affect foraging in the project by peregrine falcons, we conclude that issuing a new license for the project would not affect the peregrine falcon.

The FWS concurred with our determination of "no adverse effects" to bald eagles and with our determination of "no effect" on transient peregrine falcons (letter from Michael Bartlett, Fish and Wildlife Service, Supervisor New England Field Office, Concord, New Hampshire, November 13, 1998). They also concluded that no further consultation under Section 7 of the Endangered Species Act is required.

Unavoidable Adverse Impacts: None

VI. DEVELOPMENTAL ANALYSIS

In this section, we analyze the project's use of the available water resources to generate hydropower, estimate the economic benefits of the project, and estimate the cost of various environmental enhancement measures. Bangor Hydro is proposing to construct an upstream and downstream fishway for eels and a video monitoring and lighting system. Besides looking at these measures, our analysis also looks at the cost of a pneumatic crest control gate system; additional measures recommended by staff (such as preparation of plans to monitor run-of-river operation and eel passage effectiveness) wouldn't significantly affect project cost or operation. ^{10/}

^{10/} Although we do not recommend additional mercury sampling, the state water quality certificate requires that Bangor Hydro, in consultation with DEP and PIN, collect and analyze fish tissue and sediment samples in and below the project reservoir for mercury and PCB's. Because we don't know the extent of the effort that would be required, we can not estimate a cost at this time. We believe, however, that a reasonable effort would not be so burdensome that it would

A. Power and Economic Benefits of the Medway Project

The main purpose of the project is to provide power for Bangor Hydro's customers. Based on the 36-year period from 1961 through 1996, the project generates an average of 28,118 MWh annually. We use this average annual generation and Bangor Hydro's 3.44 MW dependable capacity rating for the Medway Project as the basis for our analysis of project economic benefits.

We base the value of project power benefits on the current cost of replacement, assuming the power would most likely be replaced by a gas-fueled combined cycle combustion turbine. Whether Bangor Hydro would actually provide the power itself, or buy from the market, combustion turbine technology is the most likely technology to be used for new capacity. Its cost, therefore, is a reasonable proxy of project value for the purposes of our economic studies, which are: (1) to provide a basis for measuring the economic benefits of continued project operation, and (2) to provide a basis for estimating the cost of replacing power for any environmental enhancement alternatives that would reduce project generation and/or capacity.

By using current costs, we make no assumptions concerning future escalation or de-escalation of the various cost components included in the cost of project power or alternative power. Although we do not explicitly account for the effects inflation may have on the future cost of electricity, the fact that hydropower generation is relatively insensitive to inflation compared to fossil-fueled generators is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license.

The current cost economic analysis is not entirely a first-year analysis in that certain costs, such as major capital investments, would not be expended in a single year. The maximum period we use to annualize such costs is 30 years. Also, some future expenses, such as tax depreciation expenses, are known and measurable.

We base our analysis of the Medway Project's net benefits on the following data:

make the project uneconomical and influence the Commission's licensing decision.

Capital costs

Net investment	\$3,886,353 ^{11/}
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Annual costs

Operations and Maintenance	\$ 348,225 ^{11/}
Discount rate	10 percent
Cost of money	10 percent
Period of analysis	30 years
Term of financing	30 years

Power value

Alternative energy value	27 mills/kWh ^{12/}
Capacity value	\$109/kW-year ^{12/}

Based on the above, the total annual cost of the existing project (without any enhancements) is about \$863,000 or 30.7 mills per kilowatt-hour (mills/kWh). The current annual value of the project's power is about \$1,141,000 or 40.6 mills/kWh. To determine whether the existing project is currently economically beneficial, we subtract the project's cost from the value of the project's power. Thus, based on current costs, the project as currently operating would cost about \$278,000 (9.9 mills/kWh) annually less than the current cost of alternative power.

B. Cost of Environmental Enhancement Measures

Any measures proposed or recommended by Bangor Hydro, agencies, and staff would affect project economics as a result of the cost of these measures or their effect on power generation. These costs include capital (construction) costs, operation and maintenance (O&M) costs, and reduced power generation.

In this EA, we consider the following measures, proposed by Bangor Hydro, that could reduce the economic benefits of the project (no additional measures are proposed by staff that would appreciably affect project economics):

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- 11/ As of December 31, 1997 (rounded, Source: Applicant's letter dated September 21, 1998).
- 12/ Source: staff estimate; the energy and capacity values are based on regional natural gas fuel cost and alternative capacity cost, including fixed operation and maintenance, using combined-cycle combustion turbines.

<u>ENHANCEMENT MEASURE</u>	<u>CAPITAL COST</u> (\$)	<u>LEVELIZED</u> <u>ANNUAL COST</u> (\$/Yr.)
Fishways:		
Upstream eel passage	\$46,500	\$6,200
Downstream eel passage	\$25,500	\$2,400
O & M for fishways (\$/year)	-	\$9,400 <u>13/</u>
Video monitoring/ Lighting equipment		
	\$ 7,000	\$900

The DEP, commenting on the draft license application, requested Bangor to investigate the economic feasibility of installing a pneumatic crest control at the dam (rubber dam) to replace the existing flashboards. Bangor concluded that the Medway Project is not a suitable candidate for a rubber dam as the flashboards fail an average of only once annually, and the flashboard replacement cost is not enough to justify the significant cost of the rubber dam. Bangor estimates the rubber dam capital cost at one million dollars, which is equivalent to a levelized annual cost of about \$132,500 (staff estimate); and the average cost for flashboard replacement at \$3,600 per year. 14/ Staff concurs with Bangor's conclusion that the rubber dam is not cost-effective for the project.

Based on current economic conditions, the proposed project's annual cost (with enhancements) would be about \$883,000 or 31.4 mills/kWh (table 4). Thus, based on current costs, the proposed project would cost about \$258,000 (9.2 mills/kWh) annually less than the current cost of alternative power (\$1,141,000 or 40.6 mills/kWh). No additional measures are being proposed by staff that would affect project costs -- the staff recommended alternative is essentially the same as Bangor Hydro's proposed alternative.

Table 4 is a summary of costs, benefits and net benefits for each alternative. The project, with the enhancement measures proposed by Bangor Hydro, would have annual net benefits of 9.2 mills/kWh. This is our recommended alternative.

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- 13/ The annual operating and maintenance costs for the fishways (upstream and downstream) is \$20,000 for the first two years and \$7,000 thereafter (Source: Application).
 - 14/ Telephone conversation with Scott Hall, Project Manager, Bangor Hydro (September 30, 1998).

Table 4. Summary of the developmental costs, benefits and net benefits for all alternatives (Source: staff).

ALTERNATIVE	COST	BENEFITS	NET BENEFITS
	\$/YEAR (mills/kWh)		
Baseline (No Action)	\$863,000 (30.7)	\$1,141,000 (40.6)	\$278,000 (9.9)
Proposed Project (also staff alternative)	\$883,000 (31.4)	\$1,141,000 (40.6)	\$ 258,000 (9.2)

VII. COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the FPA require the Commission to give equal consideration to all uses of the waterway on which a project is located. When we review a proposed project, we equally consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Accordingly, any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.

Based on our independent review of agency and public comments filed on this project and our review of the environmental and economic effects of the proposed project and its alternatives, we selected the proposed project, with staff's modified measures, as the preferred option. We recommend this option because: (1) issuing a new hydropower license would allow Bangor Hydro to operate the project as an economically beneficial and dependable source of electrical energy for its customers; (2) the 3.44-MW project would eliminate the need for an equivalent amount of fossil-fuel derived energy and capacity, which helps conserve these nonrenewable resources and limits atmospheric pollution; (3) public benefits of the selected alternative would exceed those of Bangor Hydro's proposal and the no-action alternative, and (4) the recommended measures would protect aquatic and recreation resources.

We recommend the following environmental measures be included in any license issued by the Commission for the Medway Project: (1) run-of-river operation, with a target impoundment surface elevation of 259.3 feet msl, with an allowable fluctuation of not more than plus or minus six inches from the target elevation except during emergencies and high flow events; (2) develop a monitoring plan in consultation with the resource agencies to ensure compliance with the run-of-river operation;

(3) reserve authority to Interior to prescribe fishway at some future date; (4) prepare final design and operating plans of the upstream and downstream eel passage facilities in consultation with the resource agencies and PIN; (5) prepare a monitoring program in consultation with resource agencies and PIN to evaluate eel passage facility effectiveness; and (6) provide a copy of the FERC Form 80 to FWS, NPS, PIN, and DOC to advise them of changing recreation demands at the project.

After evaluating the environmental and economic effects of the project, we conclude that licensing the Medway Project with our additional recommended environmental protection measures would best adapt the project to a comprehensive plan for the West Branch of the Penobscot River drainage.

In deciding what use of the waterway has the greatest benefits, we must sometimes resolve conflicts among competing uses. The following discusses by resource issue, what we recommend and why.

Project Operation

We recommend continued run-of-river operation. Run-of-river would be defined as the maintenance of the impoundment water level elevation within 6 inches of elevation 259.3 feet msl (full pool elevation when flashboards are not place) or six inches of 254.5 feet msl (spillway crest elevation when flashboards are not in place), as required by the state water quality certificate. This action would not affect the power value of the project but would benefit the existing environment by limiting fluctuations that could adversely affect shoreline habitats of resident fish and waterfowl, and by reducing the hydraulic retention time of the impoundment that would maintain good water quality there. We agree with Interior that a monitoring plan would be necessary to determine compliance with the run-of-river operation. Because of the automated system at Medway, this would be relatively inexpensive and easy to accomplish.

Eel Passage

Eel passage facilities would benefit eel fisheries at the project and throughout the West Branch by reducing mortality during migration. Installing, operating, and monitoring the facilities as proposed would cost about \$18,900 annually (levelized over a 30-year license period). We recommend adopting the system as proposed, along with a plan to monitor the effectiveness of the system. Since passageway and monitoring installations would be new, however, we also recommend Bangor Hydro prepare final design and operating plans in consultation with appropriate federal and state resource agencies for Commission approval. Our recommendation substantially agrees with the state water quality certificate terms and conditions relating

to eel passage.

Pneumatic Crest Control

The DEP requested that Bangor Hydro examine the feasibility of installing a pneumatic crest control (rubber dam) at the dam, but did not subsequently recommend its installation. Flashboard failure occurs on average once a year and typically during the late winter and early spring. Constructing the rubber dam would have significant project costs--about one million dollars (or about \$132,500 levelized over a 30 year period). Bangor Hydro concluded that due to the infrequency and limited duration of flashboard failure and the small cost of replacing the flashboards, it could not justify the significant cost of the rubber dam. We concur. No one has recommended installing the pneumatic crest gate, and in fact both Interior and PIN recommend current operation using existing equipment. Considering this, as well as the relative small size of the project reservoir and the already stable flow conditions in the highly regulated West Branch, we feel positive shoreline and aquatic impacts of such a control device over that provided by flashboards would be minimal. We do not recommend installing the pneumatic crest gate; instead we recommend that Bangor Hydro be required to continue its practice of replacing flashboards as soon as safely possible.

VIII. RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES

Under the provisions of Section 10(j) of the FPA, each hydroelectric license issued by the Commission shall include conditions based on the recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of fish and wildlife resources affected by the project.

Section 10(j) of the FPA states that whenever the Commission believes that a fish and wildlife agency recommendation is inconsistent with the purposes and requirements of the FPA or other applicable law, the Commission and agency shall attempt to resolve the inconsistency, giving due weight to the recommendation, expertise, and statutory responsibilities of the agency.

Interior submitted two Section 10(j) recommendations on October 28, 1998, for the Medway Project. Our evaluation of the recommendations is summarized in table 5 and discussed in detail in the Aquatic Resources section.

We initially did not fully adopt Interior's recommended run-of-river operation because there would be times when the reservoir fluctuation limits may be exceeded because of

Table 5. Analysis of fish and wildlife agency recommendations for the Medway Project.

Recommendation	Agency	Within scope of Section 10(j)	Annual Cost (\$1998)	Conclusions
Run-of-river operation; minimal reservoir level fluctuation (plus or minus 1 foot from full pond).	Interior	Yes	Low	Adopted-Interior agreed to greater changes in reservoir levels due to emergencies
Monitor instream flow and reservoir level	Interior	Yes	Low	Adopted

conditions beyond Bangor Hydro's control, such as during high flows and flashboard failure. We therefore made a preliminary determination in the DEA that the recommendation conflicted in part with the comprehensive planning and public interest standards of Section 4(e) and 10(a) of the FPA.

By letter dated October 28, 1998, we informed Interior of the inconsistency of the run-of-river recommendation, and of our proposed slight modification to the recommendation to allow for operational emergencies.

By letter dated December 10, 1998, Interior stated it had no objection to our proposed modification of their run-of-river recommendation. However, our adoption of the more restrictive limits on reservoir fluctuations specified in the water quality certificate (plus or minus 6 inches) would provide greater environmental benefits. Therefore, we believe that our recommendations, under Section 10(j) of the FPA, contained in this final EA are consistent with those filed by Interior.

IX. CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Accordingly, federal and state agencies filed 10 comprehensive plans for Maine that address various resources in the state. Of

Accordingly, federal and state agencies filed 10 comprehensive plans for Maine that address various resources in the state. Of these, we identified and reviewed four of the plans relevant to this project. ^{15/} We conclude that the proposed project would not conflict with these plans.

X. FINDING OF NO SIGNIFICANT IMPACT

We've prepared this environmental assessment for the Medway Hydroelectric Project pursuant to the National Environmental Policy Act of 1969. Implementing the protection measures described in this EA would ensure that environmental effects of the project would remain insignificant. There would be no unavoidable adverse impacts.

Based on this analysis, issuing a new license for the project would not be a major federal action significantly affecting the quality of the human environment. With our recommended measures, aquatic resources (including eels and other resident fish), riparian resources, bald eagles, and any cultural resources that would be found during project operation, would be protected.

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Appendix A
Response to Comment Letters

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CONFIDENTIAL

COMMENTS

RESPONSES



United States Department of the Interior

OFFICE OF THE SOLICITOR
Washington, D.C. 20240

DELIVERED BY HAND

REF: FERC #2666-007
Medway Hydroelectric Project
Bangor Hydro-Electric Company

DEC 14 1998

Mr David P. Boergers, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Dear Mr. Boergers:

The United States Department of the Interior (Department) has reviewed and provides these comments on the Federal Energy Regulatory Commission's (Commission) October 28, 1998 Notice of Availability of Draft Environmental Assessment (DEA or Notice) regarding the proposed licensing of the 3.4 MW Medway Hydroelectric Project, located on the West Branch of the Penobscot River, in Penobscot County, Maine.

GENERAL COMMENTS

In the DEA the Commission addresses a number of the issues the Department raised during scoping related to the licensing of the Medway project.¹ However, as we explain below, the DEA deals with many important issues superficially and fails to analyze others altogether.

A. Environmental baseline

INT-1

As the Department has stated previously, we disagree with the Commission's use of continued operation of the project under the original license conditions as the no-action alternative and the baseline for environmental analysis.² By taking the ongoing impacts of the project as "given," the Commission excludes from analysis whole categories of impacts directly attributable to any decision the Commission

¹ Letters dated August 22, 1997 and December 22, 1997 (comments on Scoping Documents 1 and 2, respectively), Motion to Intervene, dated August 22, 1997; letter, dated June 17, 1998 on Commission's April 21, 1998 Notice of Application Ready for Environmental Analysis.

² Letters dated August 22, 1997 and December 22, 1997 (comments on Scoping Documents 1 and 2) and documents referenced therein.

INT-1 The definition of environmental baseline and the no-action alternative is a Commission's policy that has been explained most recently in City of Tacoma, Washington, 84 FERC 61,107 (1998). In summary, where project works already exist and are part of the existing environment, we do not regard it as reasonable to analyze the effects of relicensing using a pre-project environmental baseline. We have further found it reasonable in relicensing proceedings to define no action as continued project operation, without change, and to also examine the alternative of license denial and decommissioning, with the level of detail dictated by the circumstances of the particular case (Public Service Co. of New Hampshire, 68 FERC at p. 61,867). We believe the EA gives appropriate consideration to both possible approaches to the no-action alternative, examines past environmental effects of the Medway Project (to the extent possible) as part of a cumulative effects analysis, adequately addresses effects of continued operation, and is sufficient to determine what measures may be appropriate to protect, mitigate, and enhance environmental resources.

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might make to relicense; namely, those impacts that existed under the old license and will continue throughout the term of any new license issued. For example, the DEA states that studies of resident fish passage are unnecessary, apparently basing its conclusion upon the unstated assumption that relicensing would not have an impact on resident fish, although the continued existence of the project for the term of the license obviously would present a barrier to resident fish passing up or downstream (DEA, 5-6). The DEA states that relicensing the project would have no impact on mercury distribution in the West Branch and Penobscot drainages, although the Commission concedes the continued existence of the dam causes retention and accumulation of mercury (DEA, p. 8). These few examples merely illustrate the problem, as discussed below, the Commission's erroneous approach affects the whole of its environmental analysis.

First, the Commission's use of a status-quo baseline prevents the Commission from fulfilling the mandate of the Federal Power Act (FPA). Section 4(e) requires the Commission, in determining whether to issue a new license to an existing project, to give equal consideration to protection, mitigation of damage to, and enhancement of fish and wildlife and to power and development purposes; the Commission cannot adequately fulfill its equal consideration obligation if it fails to identify the ongoing impacts of the project. Sections 10(a) and 10(j) require the Commission to include conditions in the license that will adequately and equitably protect, mitigate damage to, and enhance fisheries and other natural resources; again, the Commission cannot carry out this duty unless it measures the full impact of the project on fish and wildlife.

Second, the Commission's erroneous baseline approach prevents the Commission from fulfilling its obligation under the National Environmental Policy Act (NEPA) to identify and consider every significant aspect of the environmental impact of its proposed action in licensing the Midway Project. As the Commission recognizes, under a new license the Midway Project would continue to constitute a barrier to resident and migratory fish, continue to affect water quality and sediment composition, and continue to affect recreational opportunities in the river. However, the Commission has used its baseline approach to simply "drive away" these impacts that will occur if the project is relicensed.

Finally, the Commission excludes from detailed analysis the alternative of dam decommissioning and removal, an omission directly related to the Commission's failure to analyze all impacts of issuing a new license to the Midway Project. The Department discusses decommissioning and removal at greater length below; here it is enough to note that given the FPA's and NEPA's requirements that the Commission analyze all impacts of a licensing proceeding, it is incumbent upon the Commission to give serious consideration to the alternative that could eliminate those impacts: decommissioning and removal.

INT-1
(cont.)

INT-2 The Commission is "subject to the United States' fiduciary responsibility towards Indian tribes, which, in essence, consists of acting in the interests of the tribes" (Minnesota Power & Light Co., 75 FERC 61,131 (1996)). However, we exercise this responsibility in the context of the FPA (City of Tacoma, Washington, 71 FERC 61,381 at pp. 61,492-93 (1995)).

This trust responsibility is a legal matter that requires our consideration in administering various provisions of the FPA. It is not an environmental factor or effect that must be analyzed in an environmental assessment or impact statement. Because we will acknowledge and discuss this trust responsibility in our published decision, we do not consider it necessary to also include a statement of this responsibility in our environmental document. We focused our environmental analysis on the particular environmental values and resources that PIN has asked the Commission to consider in this licensing proceeding: eel passage, resident fish populations, and mercury contamination which are addressed in section V.C.1 of the EA. This approach permits consideration of the effects of a proposed licensing action on those values and resources, while leaving for

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INT-1
(cont.)

It is the position of the Department and others that the Commission must evaluate the impacts of issuing a new license for the Medway Project by comparing and evaluating what the conditions in the affected environment would be without the project. Only by understanding what environmental conditions would obtain absent the project can the Commission and the affected public adequately weigh the environmental costs against the power benefits of relicensing Medway, and thereby make a fully informed determination as to whether issuing a new license is in the public interest.

B. Trust responsibility

INT-2

The Commission continues to neglect its trust responsibility for protecting the interests and rights of the Passobeot Indian Nation (PIN), a federally recognized tribe, whose Reservation consists of islands and associated riparian rights in the Passobeot River, beginning at Indian Island and extending upriver.³ The Department has repeatedly noted that the proposed relicensing of the Medway Project will impact resources of concern to the PIN, including migratory and resident fish, and that it will impact the PIN's exercise of its aboriginal and statutorily confirmed fishing rights. In addition, the PIN has participated extensively in the proceedings to date and offered detailed comments and recommendations relating to the resource issues in this relicensing.

Despite this, the Commission does not seriously address its trust responsibility to the PIN in the DEA and includes no analysis of the overall impact of the proposed relicensing on the PIN's fishing rights. In addition, as noted below, where the Commission does analyze specific impacts on resources of concern to the PIN, it analyzes them without any reference to PIN's fishing rights or interest in the resource at issue. The Commission must exercise its trust responsibility and rectify this deficiency in its final environmental analysis.

SPECIFIC COMMENTS

A. Need for power

INT-3

The Commission's DEA on the licensing of the Medway project fails to consider the recent approval of a major new natural gas pipeline project in Maine.⁴ In addition to providing an alternative source of energy for Bangor Hydro-Electric Company's (precat

³ 30 M.R.S.A. 6203(8); 25 U.S.C. § 1722(f); *Crowley Indian Community v. FERC*, 895 F.2d 581, 586 (9th Cir. 1990).

⁴ *Maine & Northeast Pipeline, L.L.C.; Maritimes Phase II Project*, Docket No. CP96-809-000 et al., Certificate of Public Convenience and Necessity, July 31, 1996 (84 FERC 61,130).

the Commission the ultimate decision of whether the environmental measures that the staff has analyzed and recommended are consistent with the Commission's trust responsibility. NEPA requires us to examine the environmental effects of our licensing decisions. It does not require us to analyze and discuss the many legal and other considerations that may influence those decisions (City of Tacoma, Washington 84 FERC 61,107 (1998)).

INT-3 Medway is a constructed project that uses a renewable resource and therefore would displace higher cost generating facilities, such as gas.

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INT-3
(cont.)

licensee for the Medway project) major industrial customers, gas from the new pipeline is to be used in a 500-kW generating facility (Maine Independence Station), currently under construction in Veazie, Maine (located approximately 75 miles downstream from Medway). The DEA fails to consider the imminent use of natural gas in Maine to reduce the demand for hydroelectricity that is being generated at Medway and other projects in the Penobscot River basin.

INT-4

The DEA also should acknowledge the fact that Bangor Hydro-Electric Company (BHE) has recently sold its generating assets, including the Medway project, to an out-of-state company in compliance with Maine's energy deregulation law.³ Given that the purpose of deregulation is to stimulate competition and to provide electrical consumers with a greater choice of generating sources, there is no guarantee that the Medway project will continue to be used as it has in the past to meet the local needs of its customers. (DEA, p. 3, 8) Accordingly, the Commission's analysis of the need for power and of the consequences of project decommissioning (see below) should be revised to reflect the pending changes resulting from deregulation in Maine.

B. No-action alternative

The Commission has used as its no-action alternative the continued operation of the Medway project under the terms and conditions of the original license without any new environmental measures (DEA, p. 5). The Department objected to the Commission's use of conditions under the original license as its baseline for environmental analysis in the General Comments above; here we note that the original license is no more satisfactory as the no-action alternative.

INT-5

The Council on Environmental Quality (CEQ) guidance on NEPA states that the nature of the no-action alternative depends on the proposal being evaluated.⁴ The CEQ distinguishes an action that involves an ongoing program or activity (e.g. land management plans), for which "no action" is no change in management direction, from an action that constitutes a proposed project, for which "no action" is not proceeding with the proposal.

Licensing proceedings under the FPA fall into the second category, that of a proposed project where "no action" is not proceeding with the proposal. The Commission has no obligation to accept a licensee applicant's proposal for a new license for an existing project, and clearly has the authority to deny a license.

³ L.D. 1804, An Act to Restructure the State's Electric Industry (signed into law on May 29, 1997).

⁴ CEQ, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," Question 3, 46 Fed. Reg. 18026, 18027 (1981).

INT-4 We acknowledge the proposed sale of the Medway Project in the final EA (see section II.A). The application for transfer was filed after the DEA was issued. At this point, however, the Commission cannot predict how the Medway Project, or any other project, would be used under the deregulation scenario.

INT-5 Again, the definition of the no-action alternative is a Commission policy that is not appropriately debated in the EA. See also response to INT-1.

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INT-5
(cont.)

application.⁷ Furthermore, under the FPA the Commission is not to assume that it will accept without changes a proposal for relicensing but instead must make a full inquiry into the advantages and disadvantages of the relicensing proposal, the same inquiry the Commission is required to make upon an initial licensing.⁸ This inquiry must necessarily consider the implications of not proceeding with the applicant's proposal in order to meet the comprehensive development standards contained in the Federal Power Act (FPA),⁹ which call for equal consideration for hydroelectric development and other beneficial public uses, including fish and wildlife. Accordingly, the Commission must designate not proceeding with the applicant's proposal, i.e. license denial, as the no-action alternative.

C. Project decommissioning and dam removal

In response to the Department's comments on Scoping Documents 1 and 2 the Commission addressed the alternative of project decommissioning, with or without removal of the Medway dam, but eliminated the alternative from detailed study (DEA, p. 5 - 6). The rationale for dismissing this alternative appears to be related to the Commission's finding that the benefits of dam removal would be "limited and localized" and that measures proposed by BHE and Commission staff are adequate for addressing the "limited" resource issues at the project (DEA, p. 8). Further, the Commission bases its dismissal of the dam removal alternative on the lack of any recommendations for such action by resource agencies, FIN or other parties involved in these proceedings.

INT-6

While the Department appreciates the Commission's efforts to identify the benefits associated with dam removal, including the restoration of riverine habitat and removal of all passage barriers at the site, the DEA's dismissal of this alternative without detailed study ignores a number of important issues. First, the analysis of project decommissioning fails to take into account whether power from the Medway project, including its contribution to existing and future energy supplies within the state, is needed over the short and long term. In contrast, the Commission in its order denying a new license and ordering dam removal of the Edwards Dam in Maine, found that the loss of 3.5 MW of capacity at that site could be absorbed by existing energy supplies within the state, and could be replaced in the long-term by natural gas-fueled combustion turbine generators.¹⁰

⁷ FERC, Policy Statement, Project Decommissioning at Relicensing, 60 Fed. Reg. 339 (Jan. 4, 1995).

⁸ *Yakima Indian Nation v. FERC*, 746 F.2d 466, 470 (9th Cir. 1984).

⁹ Sections 4(e) and 10(a); 16 U.S.C. §§ 797(e) and 803(a).

¹⁰ Order Denying New License and Requiring Dam Removal, Project No. 2389-012, November 25, 1997 (81 FERC 61,255).

INT-6 The Commission looks at short- and long-term need for power, not whether output from a specific resource is "needed." Medway is already part of Bangor Hydro's existing resources and has been used to meet the load for over 65 years.

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INT-6
(cont.)

As stated above, major new energy sources are poised to enter BHE's electrical service area, making the continued contribution of the 3.4 MW Medway project questionable at best. The Medway project is also being sold to an out-of-state energy company, whose markets for power from Medway have yet to be identified (and will not be known until deregulation takes effect early in the next decade), and may no longer be the local service area that is described in the DEA. In the new age of increased electrical competition, the Commission cannot assume as it has in the DEA that power from alternate sources will necessarily cost more than it does for the energy that is currently produced at Medway.

INT-7

The Commission's evaluation of decommissioning and dam removal at Medway also erroneously concludes that mitigation measures proposed in the DEA (i.e., eel passage, reservation of authority to address future fish passage needs, run-of-river operation, canoe portage and boat access, and periodic review of recreational needs) can address impacts in a manner that is equivalent to eliminating the project. Fishways at hydroelectric projects are never as effective in passing fish that would otherwise move through a river segment without barriers. The eel passage facilities that are proposed for Medway would be the first to be installed in the Penobscot River drainage, and will require preliminary studies on location and design (see below) and monitoring to determine effectiveness. A post-licensing opportunity to seek additional fish passage (via the Commission's standard re-opens article) is by no means a guarantee that such measures could be attained without delay or opposition. The proposed run-of-river requirement also allows for interruptions and departures from natural river flow, and could result in impoundment fluctuations of up to seven feet. (DEA, p. 20)

INT-8

The Commission cannot avoid its responsibility to give decommissioning and dam removal detailed study on the ground that the Department and others have not recommended at this time that the Commission order decommissioning and dam removal. As discussed in the General Comments above, given the FPA's and NEPA's requirements that the Commission analyze all impacts of a proposal for licensing and make its decision regarding whether to relicense the project in light of this full-fledged environmental analysis, the Commission must give serious consideration to the alternative of not issuing a license and removing the dam. Further, recommending that project decommissioning and dam removal be studied in the DEA (which the Department and PIN have done) is not the same as proposing that the Commission take such action as its final decision in these proceedings (as was done in the case of Edwards). The Department and PIN have called for a detailed analysis of project decommissioning and dam removal in the DEA to develop a basis for deciding whether to recommend such action as the preferred alternative. The CEQ regulations implementing NEPA are clear in stating that all reasonable alternatives must be rigorously explored and objectively evaluated.¹¹ Given that the Penobscot River drainage is already heavily developed for hydropower use (DEA, p. 12), and that the power from the Medway project may not be as significant as it was in

¹¹ 40 CFR 1502.14.

INT-7 The DEA does not conclude that proposed mitigation measures are equivalent to eliminating the project, but that the measures proposed adequately address resource needs arising from project operation. Interior neither provides additional evidence that analysis of further resource issues is necessary, nor suggests methods for dealing with the additional topics. Furthermore, in a December 10, 1998, letter concerning Section 10(j) recommendations, the Fish and Wildlife Service did not object to our suggested modification of run-of-river operation, concluding that our recommendation would cause minimal impacts to fish and wildlife resources. Interior provides no further evidence that our recommendation would cause more than minimal impacts to fish and wildlife resources. Our flow recommendation agrees with the state water quality certificate.

INT-8 Staff's decision to eliminate decommissioning with dam removal from further analysis did not rest solely on the lack of such a recommendation from the agencies and PIN. The lack of such an ardent and widely held recommendation as we found in the Edwards' case was one more factor that led staff to conclude this was not a reasonable alternative in this case. We also considered fisheries, recreation, cost,

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INT-8 (cont.) the past due to new energy sources (see above), decommissioning and dam removal are clearly reasonable, and worth further analysis and study, in light of the FPA's mandate for seeking balance among competing demands while giving equal consideration to fish and wildlife and other environmental values.

D. Assessment of cumulative effects

INT-9 The DEA includes silt, sediment retention and disruption of natural flushing, and river temperature patterns as resources that could be cumulatively impacted by the licensing of the Medway project. (DEA, p. 12) The Department identified in its scoping comments other resources requiring an assessment of cumulative effects, including loss of spawning and rearing areas for Atlantic salmon and other anadromous fish, impeded passage of migratory aquatic species, loss of biodiversity due to modified historic habitats for fauna and flora, and impacts to the resources and sustenance fishing rights of the PIN. As stated in the DEA (p. 12) and mentioned above, the Penobscot River basin is heavily developed for hydropower use, resulting in the loss of historic habitat and spawning access for salmon and other migratory species.¹² The increase in the amount of impounded waters and prevalence of regulated flows, together with the loss of free-flowing riverine conditions have allowed for the expansion and dominance of populations of smallmouth bass, an introduced species, at the expense of indigenous fishes. The Commission should address such cumulative losses and alterations in fishery resources and habitats before determining whether continued operation of the Medway project achieves the level of balanced river basin development and consideration of competing needs that is required under the FPA. As mentioned above, the Commission also ignores its trust responsibility to the PIN by failing to assess the cumulative impact of hydropower developments, including Medway, on the Tribe's aboriginal and statutorily confirmed sustenance fishing rights.

E. Passage of resident fish

INT-10 The Commission concludes in its DEA that the installation of fishways for resident fish species is not warranted at Medway, based in part on the absence of specific management objectives by the Maine Department of Inland Fisheries and Wildlife (MDIFW) calling for such facilities. (DEA, p. 21 - 22) Although the Department supports the management objectives of the MDIFW generally, they are not the only management goals the Commission must consider. In order to fulfill its trust responsibility to the PIN, the Commission must also consider the PIN's management goals, and the Department agrees with PIN that further analysis of the issue of resident fish passage is required. Furthermore, under NEPA, the Commission is obligated to identify all impacts of the

¹² See also Final Environmental Impact Statement, Upper Penobscot River Basin, FERC/FEIS-0075, September 1996; Final Environmental Impact Statement, Lower Penobscot River Basin, FERC/FEIS-0082, October 1997.

and power benefits in our decision. It is our policy to reserve a detailed analysis of decommissioning for cases in which it is a reasonable alternative, rather than simply one possible outcome that no party advocates and the Commission does not intend to pursue. This is consistent with NEPA, which requires federal agencies to consider a range of reasonable alternatives, but does not require them to examine all conceivable alternatives (City of Tacoma, Washington, 84 FERC 61,107 (1998)).

INT-9 We justify our selection of the cumulative impact areas considered in the EA in Scoping Document 2 (page 6), and Interior provides no evidence here that cumulative impact topics other than those analyzed in the DEA require further attention. See response to INT-2 regarding our trust responsibilities.

INT-10 We conclude in the DEA that additional sampling of the reservoir fish is not warranted because of a number of factors: (a) the lack of specific MDIFW management objectives for resident species, (b) the lack of recommendations for such studies during pre-filing consultation, due to an apparent agreement among all parties that sampling efforts from surrounding

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INT-10
 (cont.)

proposed action; under the FPA, the Commission must not only identify impacts but also provide adequate mitigation for them. As discussed in the DEA, there was no comprehensive collection of resident fish at the Medway project, and efforts to collect white suckers and other resident species for contaminant analysis were not highly successful (DEA, p. 27). As a consequence of this paucity of evidence on the distribution and abundance of resident fish at Medway, the record before the Commission with regard to the need for additional fish passages is deficient and does not meet the substantial evidence standard required to support a decision. Thus the Commission must require that the lack of evidence be remedied through additional surveys. If there is insufficient recruitment of resident fish from upstream habitats, additional fishways may be warranted to stabilize the aquatic community in the impoundment (or removal of the dam, if found to be cheaper than the costs of fish passage).

F. Passage of American eel

INT-11

The Department supports BHE's proposed installation of a special upstream fishway to accommodate migrating American eels. (DEA, p. 22) However, the installation of specific eel fishways at hydroelectric projects in Maine is relatively new, and may warrant preliminary field studies at Medway to determine the optimum location of the facility (i.e., with respect to attraction flows and other design criteria). The Department will determine the need for and scheduling of such studies during post-licensing consultation with BHE and others. Similarly, additional quantitative investigations may be warranted following the review of proposed video monitoring of upstream and downstream eel passage at the project. The Department will be able to ascertain the need for additional quantitative studies after it reviews the results of the video monitoring.

The Commission acknowledges that the Department has reserved its authority to prescribe fishways in part upon the understanding that the Department, BHE, and others will cooperate in the design and implementation of the eel fishway and the studies necessary before and after installation (DEA, p. 10).¹¹ The Department will make any necessary fishway prescription for eels upon the completion of these studies.

G. Mercury contamination

The DEA includes an assessment of mercury contamination at the Medway project, and presents evidence that levels of the heavy metal are elevated in fish that were captured in the impoundment. (DEA, p. 23) Specifically, three of four fish samples had mercury levels in the range of 0.50 - 0.53 ppm. These levels exceed the state's guidelines for safe human consumption (0.43 ppm) (DEA, p. 24)

¹¹ The Department's reservation of authority also encompasses any fishways that may be needed in the future for the passage of other migratory or resident fish.

reservoirs would adequately characterize the Medway reservoir, (c) the conclusion by DEP that the applicant's proposal would adequately achieve and maintain the suitability of project waters as fish habitat, (d) FWS's conclusion that there is no immediate need for fish passage measures for anadromous or resident fish at the Medway Project (letter from William Jeidermyer, FWS, New England Field Office, Concord, New Hampshire June 13, 1995), and (e) our independent review of data from various sampling efforts in and surrounding the project. The DEA estimates the reservoir fish fauna to be comparable to those of surrounding areas, and we disagree that not installing resident fish passage facilities would continue a degrading situation requiring mitigation. No evidence has emerged that the reservoir fish fauna is atypical of the West Branch or that additional reservoir fish studies are merited, and Interior offers no evidence that the reservoir fauna is unusual. Furthermore, Interior provides no evidence that detailed analysis of the project fish fauna beyond that presented in the DEA is necessary or likely to produce information meaningful to the licensing process. The license would provide for subsequent fishway prescription should Interior find it appropriate.

COMMENTS

RESPONSES

INT-12

Despite the evidence on elevated mercury levels at Medway, and the clear risk to human consumers, including the PIN, which has sustenance fishing rights, the Commission proposes no monitoring or other remedies that would help reduce contamination at the project. The Commission's position appears to be based on a conclusion, unsupported by substantial site-specific evidence, that the mercury is from sources outside of the project area, and is unrelated to operation of the hydroelectric facility (DEA, p. 24 - 25)

The Department disagrees with the Commission's dismissal of a connection between the Medway project and elevated mercury levels in fish. As noted in the DEA, the existence of the impoundment is responsible for retention of mercury-laden sediments (DEA, p. 8). Further, the values for mercury concentration in fish taken from impounded waters in the West Branch of the Penobscot (0.515 ppm mean value for Medway, 0.61 ppm for East Millinocket, located immediately upstream from Medway) greatly exceed those for free-flowing reaches in the Penobscot (0.26 ppm at North Lincoln, located about 20 miles below Medway). (DEA, p. 24) Although the operation of the Medway project may not affect the production of mercury, the continued existence of the impoundment clearly is responsible for the retention and accumulation of the toxic substance in fish to levels that make consumption by humans unsafe, which is of particular concern to the PIN given their historic reliance on fish for subsistence. Mercury accumulation also has adverse impacts on bald eagles, ospreys, cormorants, kingfishers, mergansers, and other fish eating birds. So, not only is the Commission's conclusion not supported by substantial evidence, there is substantial evidence in the record before the Commission which is inconsistent with its conclusion. Even if the Commission could identify evidence to support its conclusion, and in opposition to the Department and PIN view that the project is a contributing factor to the high levels of mercury, the Commission is required under its trust responsibility to the PIN to take necessary steps to protect the PIN, its fishing rights, and associated resources of concern.

Decommissioning and removal of the dam would result in the release of mercury from the sediments in the impoundment (DEA, p. 8), and over time, the levels of the contaminant would likely be reduced in fish, thus making them safe to consume (i.e., similar to what exists downstream at North Lincoln). In the absence of such an order by the Commission that would result in dam removal, it should include the requirement for post-licensing monitoring and signage or other appropriate warnings to inform anglers and other recreational users of the hazards of consuming fish taken from the impoundment.

The Department does not agree with the Commission that the resource agencies and PIN should be responsible for post-licensing investigations on mercury contamination, and that the agencies and Tribe should use the standard license re-opener to bring such information to the Commission's attention. (DEA, p.25) The agencies and tribe do not own, operate, or benefit from the project. Nor has the Commission cited any legal authority to justify its placement of the obligations and costs of continued mercury monitoring upon the resource agencies, including the Department and the PIN, and not on the owner, operator and

INT-11 We recommend planning, installation, and monitoring of upstream and downstream eel passage facilities in cooperation with appropriate agencies and intervenors. The state water quality certificate requires the same action. The need and design of studies required to develop the final plans can be addressed during consultation and would be considered by the Commission when approving the plans.

INT-12 We believe that mercury contamination in the project area reflects a broader, watershed phenomenon and is not attributable to the project. However, Interior's concerns will be largely satisfied through the state water quality certificate requiring the licensee to monitor mercury contamination in fish and sediments from within and outside the project.

COMMENTS

RESPONSES

INT-12
(cont.)

license of the project. The Department and the PDN should not be obligated to bear the burden of proof that is associated with the use of license re-opens.

B. Finding of no significant impact

The Commission concludes that licensing the Midway project with conditions proposed in the DEA will not significantly affect the quality of the human environment. (DEA, p 34) The DEA also finds that there are no unavoidable adverse impacts resulting from the issuance of a new license with the Commission's proposed mitigation and enhancement measures. This conclusion is possible only because the Commission has evaluated the project from an improper baseline that purports to define out of existence the impacts that the Midway Project had on the environment under the old license and will continue to have for the duration of any new license term, in violation of the Commission's statutory obligations under the FPA and NEPA. If the Commission were to analyze all impacts caused by the proposed relicensing, including those caused by the continued existence of project facilities, it is doubtful that the Commission would have substantial evidence in support of a Finding of No Significant Impact.

INT-13

For these reasons, the Department cannot accept the Commission's finding on avoidance of adverse impacts. In addition, as described above the Commission must require additional prelicensing analysis of possible resident fish passage measures. The Commission must provide for post-licensing monitoring of mercury levels by the licensee to ensure that impacts related to consumption of mercury contaminated fish can be avoided and reduced. The Commission also must expand its analysis of cumulative impacts, addressing all of the resource issues the Department raised in its scoping comments, and should further evaluate the alternative of dam removal, given the information on alternate energy sources, as discussed above in compliance with NEPA.

INT-14

We appreciate the opportunity to provide these comments on the Commission's DEA for the Midway Project.

Sincerely,

Judith M. Stoff
Judith M. Stoff by *BF*

Brandon Fletcher
Brandon Fletcher
Attorneys at Record

cc Service list

INT-13

We disagree. We believe the EA does address continuing impacts of the project.

INT-14

We are not requiring additional studies to evaluate resident fish passage measures (See response INT-10). The 401 water quality certificate requires monitoring mercury both within and below the project. See INT-9 regarding additional cumulative impacts and INT-6, 7, and 8 regarding decommissioning and dam removal.

COMMENTS

RESPONSES

PENOBSCOT NATION

DEPARTMENT OF
NATURAL RESOURCES

JOHN S. BANKS, DIRECTOR



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FEDERAL ENERGY
REGULATORY
COMMISSION

December 11, 1998

David Boergers, Secretary
Federal Energy Regulatory Commission
888 First St., N.E.
Washington, DC 20426

P-2666-007

Re: Penobscot Indian Nation Comments on Draft Environmental Assessment for the Proposed Relicensing of the Medway Hydropower Project (FERC No. 2666-007).

Dear Mr. Boergers:

In response to the Federal Energy Regulatory Commission (FERC or the "Commission") notice dated October 28, 1998, announcing the availability for review and comment of the Draft Environmental Assessment (DEA) for the proposed relicensing of Medway Hydropower Project (FERC No. 2666-007), the Penobscot Indian Nation (PIN) submits the following comments and recommendations.

I. GENERAL COMMENTS

As stated in previous filings with the Commission, the Penobscot Indian Nation (PIN) is a federally-recognized Indian Tribe with a Reservation consisting of the islands, submerged lands, and surrounding waters of the Penobscot River, northward of and including Indian Island in Old Town, Maine. Within its Reservation, the PIN retains treaty-reserved rights as to the traditional use of the natural resources contained therein, including subsistence fishing rights. These fishing rights are extremely important and valuable to the PIN, and stand to be greatly affected (positively or negatively) by Commission and other regulatory actions pertaining to hydropower development in the Penobscot River basin.

In our August 21, 1997 comments to the Commission on SD1, and, to a lesser extent, in our June 19, 1998 filing with the Commission of "Final Terms and Conditions", we discussed in the relationship between the PIN's fishing rights, the trust responsibility of the United States Government to the PIN and its treaty rights, and Commission licensing actions. We expected the Commission to respond, both directly (i.e. as a section of the DEA), and implicitly, by seeing discussion and recommendations that reflected an awareness of, and attention to, this responsibility. We find little evidence in the DEA that either of these has occurred. We are very concerned that the Commission will proceed ahead with a licensing action at Medway that does not appropriately take into account its trust responsibility to the PIN, and to the protection of PIN's treaty fishing rights that may be impacted by such action.

PIN-1

PIN-1 We exercise our fiduciary responsibility towards Indian tribes in the context of the FPA (City of Tacoma, Washington, 71 FERC 61,381 at pp. 61,492-93 (1995)). This trust responsibility is a legal matter that requires our consideration in administering various provisions of the FPA, not an environmental factor or effect that must be analyzed in an environmental assessment or impact statement. We have focused our environmental analysis on the particular environmental values and resources that PIN has asked the Commission to consider in this licensing proceeding, in this case eel passage needs, resident fish populations, and mercury contamination which are addressed in section V.C.1 of the EA. This permits consideration of the effects of a proposed licensing action on those values and resources, while leaving for the Commission the ultimate decision of whether the environmental measures that the staff has analyzed and recommended are consistent with the Commission's trust responsibility. See also INT-2.

COMMENTS

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II. SPECIFIC COMMENTS

A. Fish Passage Issues

American Eel Passage

If this project is refinanced, we concur with the Commission's recommendations for constructing and monitoring upstream and downstream eel passage at Medway, as a condition to the new FERC license. However, we would point out that some preliminary field studies may be required prior to developing final design plans, particularly as related to the location(s) of the entrance(s) to the upstream facility. Preliminary results of recent, ongoing eel upstream migration studies by the Maine Department of Marine Resources (Wappelhauser, DMR, personal communication) indicate that very young eels may be disproportionately attracted to low current, low turbulence segments below dams, when seeking upstream passage. This contrasts to the standard theory applied to stronger swimming, adult stages of anadromous species, wherein it is believed that initial attraction to a dam is correlated with the strength of various flow fields in the tailrace, gated, and spillway segments below the dam. Granted that juvenile eels arriving at Medway may be larger than those studied to date by DMR, the fact that eels are generally weaker swimmers than most other species, and the fact that it is the juvenile life stage (vs. mature adult) that requires passage, together warrant that care be exercised in locating the upstream unit so as to maximize its effectiveness. We therefore recommend that any license condition(s) on eel passage construction be structured to accommodate the possible need for field study prior to final upstream eel fishway design.

PIN-2

Finally, in discussing eel passageway monitoring plans, the DEA recommends adopting the applicant's proposed method of video monitoring. As we stated in previous comments to the Commission, this is acceptable for documenting certain aspects of facility usage, however, it may not provide adequate information on passage efficiency, information which is important to PIN's long term rehabilitation and management goals for eels. We therefore recommend that any new license condition on eel passage monitoring not unnecessarily restrict the study methods that could potentially be used, and instead defer such specificity to post-licensing consultation with PIN and others with interest in the eel resource.

Resident Fish Passage

The DEA concludes that the possible need for upstream fish passage at Medway, for resident species, be dismissed from further consideration, and discusses the Commission's basis for doing so. The discussion indicates that Commission staff may have misinterpreted our position and recommendations on this issue. We are not advocating for the construction of resident fish upstream passage at Medway at this time. As our prior consultation comments reflect, we recognize that the information currently available is probably inadequate to warrant immediate post-licensing construction of facilities. However, we continue to contend that the evidence that is currently available establishes a sufficient level of uncertainty to justify our position of concern, and thus our prior recommendation that this issue receive further study.

PIN-3

Perhaps it will help if we clarify our goals and approach with respect to resident fishery management issues, since they can differ from (but not necessarily conflict with) those of nature

PIN-2 In the EA, we recommend that final design, operating, and monitoring plans for the eel passage facilities be developed in consultation with PIN, FWS, and MDIFW. The need and design of studies required to develop the final plans can be addressed during consultation and would be considered by the Commission when approving the plans.

PIN-3 We modified the EA to reflect the lack of a MDIFW resident fish management plan for the West Branch of the Penobscot River. Our statement was based on reported conversations between Bangor Hydro and MDIFW regional biologists, and it was not until the state water quality certificate was issued that information to the contrary was provided.

Nonetheless, while we value and have considered PIN's recommendations and management objectives, we disagree with PIN's conclusions that sufficient evidence exists to warrant further study of white suckers and resident fish passage needs. See section V.C.1 of the EA and our response at INT-10 for a discussion of our reasons. PIN comments provide no additional evidence that resident fish studies or passage are necessary at this time.

COMMENTS

RESPONSES

"typical" entities with potential management interest in these species (e.g. MDIFW). Native Americans have long recognized the intimate and complex connection between and amongst all the biotic and abiotic components of an ecosystem, and that all components must be permitted to function as naturally as is possible, for the system to provide the sustainable natural resource benefits that tribal users seek. This perspective supports our fundamental goal with respect to resident fish species in the hydro project licensing process, which is to restore and maintain natural ecosystem structure and function. This in turn leads to long term ecosystem health and resource sustainability.

Clearly, attainment of this ecosystem-based goal dictates a broader approach to natural resource impact issues than of MDIFW (as an example), an agency whose management interest is generally confined to those species that provide direct or preferred sport/recreational angling opportunities for the general public angling constituency. In the case of the resident species complex at the site in question, if additional study demonstrates that upstream fish passage is needed to fully support and maintain the life histories and ecological roles of these species, then we believe this need should be addressed as part of the Commission's licensing actions. In summary, PIN's perspectives, goals and approaches to natural resource management may, and often do, differ from those of others, but that does not mean that they are scientifically improper or unjustified, or necessarily conflictive. Therefore, PIN's goals and associated recommendations should be given substantially more weight in Commission discussions, and subsequent licensing actions, than has occurred to date.

Beyond prompting clarification of our position and goals, an in-depth review of the Commission's rather brief discussion of this issue in the DEA indicates that the specific information provided may not have been properly or adequately reviewed. For example, the DEA states that "white suckers are ubiquitous and abundant in the West Branch drainage". The PIN does not dispute the generality accuracy of this assessment. However, we have raised a site-specific issue, and have cited comparative site-specific information as the basis for our concern. Thus, the only bearing that the above assessment has on the issue is whether the otherwise generally ubiquitous abundance of the species is being artificially depressed in the Medway Project impoundment due to insufficient recruitment opportunities, which in turn could be due, at least in part, to lack of fish passage.

In this same discussion, the DEA refers to an "apparent paucity of suckers observed by the tribe" which "is probably not representative of the impoundment as large". First of all, we reiterate that the initial evidence that prompted our concern was the fact that the applicant, not PIN, was unable to catch any white suckers over 14 days (total) of angling in the project impoundment. Since, as we all agree, white suckers are generally ubiquitous and abundant in the West Branch drainage, it would seem that our concern was already well justified based solely on this gross inconsistency between the perceived general species abundance and the failure of the applicant's extended sampling effort to collect the species at the Medway site. The fact that the Commission does not appear to recognize this inconsistency would seem to reflect a fundamental oversight in its analysis. Furthermore, to imply that it was only PIN's "observations" (i.e. PIN's sampling) that led to our concern again reflects an inadequate level of attention to the specific details of the information filed. In actuality, the supplemental information provided by PIN, which discussed the relatively low catch rates during subsequent collection efforts, and compared them to similar efforts in adjacent waters (e.g., that performed

PIN-3
(cont.)

Moreover, our recommendations do not inhibit PIN from studying the resident fish population and pursuing measures to advance the tribe's fishery management goals for the project area. Our standard reopener license article allows for further site-specific consideration of white sucker and resident fish population problems, should such a need be demonstrated.

COMMENTS

RESPONSES

PIN-3
(cont.)

by Great Northern for the recent relicensing of the Penobscot Mills project, immediately upstream of Medway, for which collection data was presented as Attachment 3 to PIN's January 23, 1998 additional information response to the applicant, was provided as additional evidence that there may be a problem warranting further investigation.

Regarding the presumption that the sampling efforts cited by PIN (regardless of who conducted them) produced results that are "not representative of the impoundment as a whole", we disagree, particularly if this is intended to refer to "spatial" representation. Granted that neither the applicant's nor PIN's collection efforts were designed to provide information on population structure or dynamics, the applicant does state in its application that the nets used in its 1995 efforts were regularly relocated to sites throughout the impoundment, which is only 120 acres in size, in an effort to catch this species. We further assure you that PIN's and others' subsequent efforts to capture suckers at Medway, albeit targeted toward larger individuals (which are readily available in most adjacent river segments), have been similarly rigorous. In fact, if anything, PIN's efforts would have been biased towards project areas where we would expect, based on considerable prior experience, the most suckers to be present, since this would maximize collection efficiency and minimize collection costs to PIN.

Further along, the DEA states that "current MDIFW management plans for resident species including white suckers do not require passage facilities, and also provide no justification for installing passage facilities at Medway". The first portion of this statement is misleading, because it implies that MDIFW has a management plan for white suckers, or for that matter, a management plan for any fisheries within the project area. In actuality, the draft state 401 Water Quality Certification for this project, which, by law, must include fisheries management issues raised by MDIFW, specifically states that "No specific resident fishery management plans have been identified for the West Branch Penobscot River in the project area". The absence of substantive fisheries input or recommendations by MDIFW in the consultation record of the FERC application corroborates this general lack of management interest in project area resident fish populations.

Thus, while the Commission seeks to use MDIFW's "position" as part of its basis for concluding that further consideration of this issue is unwarranted, PIN contends that MDIFW's "position" is really not pertinent to the issues we have raised, since there is no MDIFW resident species management plan or goal for the project area. Furthermore, neither PIN's recommendation for further study, nor the possible eventual need for resident fish passage to meet our management goals, would adversely impact any indigenous fish populations or fisheries under MDIFW's management jurisdiction, even if a future management plan were to arise. In summary, the mere fact that MDIFW has no fisheries management goals at the project should not preclude or inhibit PIN from pursuing non-conflictive measures that would advance our previously stated fisheries management goals for the project area.

Lastly, we note that, despite the Commission's "conclusion" on this issue, the attendant discussion does reflect some uncertainty, by stating that the "Results of the AIR and associated information indicate the white sucker population density in Medway Reservoir may be comparable to that of surrounding areas." (emphasis added). While we agree that an equivocal perspective is appropriate considering the situation, it begs the antithesis (i.e. that the density may not be comparable, possibly due to a lack of fish passage) first be examined to a

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PIN-3
(cont.)

more certain endpoint, particularly considering the 30-year term over which a new license would be issued. Furthermore, it would seem to be in the Commission's best interest, in terms of defending its specific statements made under Section X ("Finding of No Significant Impact") of the DEA, and in fulfilling its trust responsibility to the PIN, that it proceed carefully and conservatively with respect to resource impacts that it determines are insignificant, but for which an adequate basis for such determination has yet to be provided.

In conclusion, assuming the project is relicensed, we continue to recommend that the Final EA include a staff recommendation for a license condition that would require the development and implementation, in consultation with PIN, of a study that would investigate this issue to the PIN's satisfaction. The license condition should further accommodate, as is necessary, any contingency actions or plans that may be deemed appropriate or necessary as a result of this study.

B. Project Area Contaminants

As previously noted, the Penobscot Nation retains treaty-reserved subsistence fishing rights in waters of the Penobscot River. From the data presented in this license proceeding, it is clear mercury levels in fish tissue from the project impoundment preclude subsistence-level fish consumption by Penobscot Tribal members, and thus the value and utilization of these fishing rights. Therefore, the intent of PIN's previous recommendations was for periodic monitoring (every 5 years) of selected toxic contaminants over the long life of the license to continue to evaluate the role that the project dam plays in contributing to advisories for fish consumption in the West Branch Penobscot River.

We believe the Commission's approach of comparing mercury levels of fish and sediments in the project impoundment to those of other West Branch impoundment sites is inappropriate. The question that needs to be answered in the context of this license proceeding is whether the Medway Dam project contributes to elevated levels of contaminants. Instead, the Commission appears to evaluate whether mercury levels in the Medway Project area differ from levels from other dam impoundments, and dismisses PIN's recommendations on this basis.

PIN-4

The proper analysis should be to compare fish and sediment contaminant levels at Medway to those of free-flowing segments downstream of the project. In its Revised Draft Water Quality Certification (10/29/98) ME DEP recommends such an approach. ME DEP, citing 1996 Surface Water Ambient Toxics Program monitoring data, states that the Medway project data "may be acting to raise the concentrations of at least some toxic compounds in the tissues of fish residing in the project impoundment". The data cited show that levels of mercury and PCBs in fish from the Medway impoundment were higher than fish from an unimpounded reference site. ME DEP concludes that "additional fish tissue analysis is needed to determine whether the project dam is causing higher levels of toxic contaminants and whether the dam is affecting the suitability of resident fish for human consumption", and has recommended additional study (including at a free-flowing site downstream) as a condition in its 401 certification.

Based on limited data in the DEA, concentrations of mercury in Medway bass were twice those found in a free-flowing segment (North Lincoln) located only about 25 miles downstream of the project. These data support that impoundments may serve to trap contaminated sediments

PIN-4 We continue to believe that mercury contamination in the project area reflects a broader, watershed phenomenon and is not attributable to the project. PIN's concerns, however, would be largely satisfied through the state water quality certificate which requires the licensee to monitor mercury and PCB contamination in smallmouth bass, white suckers, and sediments from the project reservoir and downstream, in cooperation with the DEP and PIN.

COMMENTS

RESPONSES

PIN-4
(cont.)

thereby contributing to elevated levels in fish tissue as compared to free-flowing habitat. Furthermore, the Commission appears to agree that dams can accumulate contaminated sediments, in stating on page 8 of the DEA that "Dam removal would result in ... sedimentation that could adversely affect fish and wildlife. Some sediments that may be laden with mercury would be resuspended, flushed downstream and redeposited..."

In summary, given the long life of the FERC license, and assuming the project is relicensed, PIN continues to recommend that periodic fish tissue and sediment analysis for select contaminants be conducted, to assess whether and the extent to which the project contributes to issuance of any fish consumption advisories in the project area. Such periodic monitoring would also allow for continued evaluation of developmental changes that may occur in or upstream of the project area (i.e. industrial process changes, additional contaminants), or new information that may be discovered, during the license term. Finally, we recommend that the licensee be required to periodically consult with DEP, PIN, USFWS, and others as appropriate, to review any new information, and to consider reasonable measures that may become available to reduce contaminant burdens in Midway Project streams.

C. Project Decommissioning and Dam Removal

We appreciate the fact that the Commission decided to conduct a "first-cut" assessment of dam decommissioning/removal as a licensing alternative at Midway. Many of the natural resource benefits and costs that would occur as a result of dam removal are properly included in the DEA. However, we were equally disappointed that Commission staff has already concluded that this is not a reasonable licensing alternative. The PIN recognizes the value of hydropower dams to their respective licensees, and the value of the power generated toward the needs of the license population. At the same time, the PIN recognizes that the current level of hydropower and other licensed development in the Penobscot watershed has contributed to the historical loss and continued depression of native fisheries (including associated loss or degradation of their habitats) that were once the focal point for many traditional tribal cultures and practices.

PIN-5

In order to accomplish our fisheries restoration and management goals, the PIN has been involved in numerous hydropower project licensing proceedings over the past 10 years, and has pursued, where we believe it is appropriate, available opportunities to regain some balance of the developmental and non-developmental uses of the river, by, among other means, requesting that the applicant or Commission seriously explore dam removal as a viable licensing alternative. These proceedings have involved at least 15 individual dams spanning the entire range of environmental impact issues, generation capacities, financial capabilities, etc., that are associated with FERC-licensed facilities in the Penobscot River watershed. However, despite PIN's persistence, and despite the fact that the Commission has, on occasion, taken the removal alternative to at least the Final EA/ELS stage, we have witnessed one relicensing after another proceed without the Commission ever ~~seriously~~ considering (in our opinion), much less recommending, decommissioning and removal as the preferred licensing action alternative.

We know that the Commission has the authority to order decommissioning and removal of major dams, and in fact has recently done so at the Edwards Project (FERC #2389) on the Kennebec River in central Maine. However, we remain unable to identify the criteria that would compel the Commission to pursue this authority to fruition at a FERC licensed facility (i.e. not including

PIN-5 We did seriously consider decommissioning and dam removal, and in particular Interior's and PIN's comments on the environmental benefits of this action (see section III.D.3 of the EA). However, as we conclude in the EA, the limited and localized benefits, high cost of dam removal, and lack of support for dam removal, caused us to reach the conclusion that dam removal would not become a reasonable alternative that would be advocated by any party. We believe that further detailed analysis would not change that conclusion. See also responses to INT 1 and 8.

COMMENTS

RESPONSES

PIN-5
(cont.)

"exemption-status" projects) in the Penobscot basin. This concerns us greatly, because as each additional project is relicensed for 30 or 40 more years, many without the environmental mitigation recommended by PIN or its trust agencies, we see the opportunity to restore ecological balance to the Penobscot River, and thus restore the full value of PIN's fishing rights in its Reservation, incrementally curtailed.


Assuming no substantive changes in the Commission's apparent position on dam removal, these opportunities will ultimately be extinguished in a very short time. Such an ultimatum seems to us to be entirely inconsistent with the intent of recent amendments to the FPA (e.g., BCPA amendments to Section 4(e), Section 10(a)(2), and Section 10(j), etc.) and certainly does not reflect adequate attention to the U. S. Government's trust responsibility to Indian Tribes, including the PIN.

We hope that expressing this perspective leads the Commission to act more boldly in the future with respect to the FPA amendments cited and its authority to require dam removal as a licensing action alternative, not just at Medway but at other projects currently pending licensing action by the Commission. However, as it concerns this project alone, we recommend, at a minimum, that dam removal be maintained as a viable licensing alternative, as well as receiving a more comprehensive analysis, in the Final EA. Beyond that, should the Commission alter its position and recommend removal as the preferred alternative in the Final EA for Medway, the PIN would certainly support such a decision, and view it as a major step toward accomplishing our natural resource restoration and management goals.

III. CLOSING

We appreciate the opportunity to provide these comments and recommendations on the draft Environmental Assessment for the Medway Project. Please feel free to contact me (207-827-7776, ext 330), or Chris Fay of our natural resources staff (ext 362) should you have any questions.

Sincerely yours,




John S. Banks, Director
Penobscot Nation Dept. Natural Resources

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COMMENTS

RESPONSES



ANDREW S. ROSE, JR.
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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FEDERAL ENERGY
REGULATORY COMMISSION

COMMENTS

December 24, 1998

The Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: Application for New License
Medway Hydro Project
FERC No. 2666-007

Dear Secretary:

This is in response to Bangor Hydro Electric Company's Application for New License for the existing Medway Hydro Project, FERC No. 2666, located on the West Branch Penobscot River in the Towns of Medway and East Millisocket and the unorganized township TA-R7, Penobscot County, Maine.

The Maine Department of Environmental Protection has now issued Water Quality Certification for the proposed project relicensing. A copy of the Department Order granting certification (DEP #L-18893-33-B-N) is attached.

In summary, the continued operation of the project has been certified as meeting applicable water quality standards subject to the following special conditions:

1. Except as temporarily modified by approved maintenance activities, inflows, operating emergencies beyond the applicant's control, or agency agreement, water levels in the project impoundment shall be maintained within 6 inches of full pond elevation when flashboards are in place, and within 6 inches of spillway crest elevation when flashboards are not in place.
2. Except as temporarily modified by approved maintenance activities, inflows, operating emergencies beyond the applicant's control, impoundment refilling after flashboard failure and replacement, or agency agreement, outflows from the project shall be approximately equal to inflows at all times.

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COMMENTS RE: FERC No. 2666
December 24, 1998
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FEDERAL ENERGY
REGULATORY COMMISSION

3. The applicant shall install and operate upstream and downstream passage facilities to provide migratory passage for American eels.
4. The applicant shall conduct monitoring to determine the effectiveness of eel passage facilities.
5. The applicant shall collect and analyze tissue samples from white suckers and smallmouth bass and sediment samples from the Midway Dam impoundment, Mattacook Dam impoundment, and from the river below the Mattacook Dam for levels of mercury and total PCBs. The Department reserves the right to require such additional fish tissue collection and analysis as are warranted to determine whether the presence of the dams is contributing to the issuance of any fish consumption advisory on the West Branch Peabody River.
6. Approval is limited to the proposals contained in the application as submitted, and any variances are subject to Department review and approval.
7. The applicant shall obtain and comply with all applicable federal, state and local licenses, permits, etc.
8. This certification shall be effective concurrent with the effective date of the new FERC license for the project.

We recommend that the foregoing conditions be included in the Articles of any new license issued for the Midway Project, in compliance with the provisions of Sections 401 (a) and (d) of the Clean Water Act.

DEP-1

By Executive Order of the Governor of the State of Maine, the terms and conditions contained in the attached water quality certification represent the State's official recommendations regarding the subject Application for License, superceding all preliminary recommendations by individual State agencies.

DEP-1 Water quality certificate conditions will be made part of any license issued.

COMMENTS

RESPONSES

COMMENTS RE: FERC No. 2666
December 24, 1998
Page 3

Please direct any questions regarding these comments to Dana March of the
Department's staff at 207-287-3901.

Sincerely,

Martha Kirkpatrick, Director
Bureau of Land & Water Quality

Attachment
w/agency comments

- Cc: J. Mark Robinson, Director, OHL-DPL&C, FERC
- David Turner, OHL-DPL&C, FERC
- Kathy Billings, Bangor Hydro
- Clem Fay, Penobscot Indian Nation
- Gordon Russell, USF&WS
- Ralph Abels, EPA Region 1
- FERC Review Coordinating Committee

Form L-3
(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 Energy Regulatory 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 or 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 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.