

Orono Hydroelectric Project (FERC No. 2710)

Project Description

Black Bear Hydro Partners, LLC's Orono Hydroelectric Project is a run-of-river hydroelectric generating facility located on the Stillwater Branch of the Penobscot River in Orono, Maine with a gross nameplate generating capacity of 6.52 MW. The Orono Project commenced initial commercial operations in 1949, but stopped operating in 1996 due to catastrophic failure of the facility's penstock which caused the project to be shut down. After the Federal Energy Commission issued a new license for the Orono Project on December 8, 2005, the Orono Project was refurbished and thereafter began commercial operation of the first two units on January 11, 2009, and the other two units on March 3, 2009. The Licensee applied for an amendment to increase capacity at the Orono Project via the construction of an additional powerhouse (Powerhouse B).

The Project consists of an existing 1,178-foot-long by 15-foot-high dam including a 320-foot-long spillway topped with 3-foot-high flashboards, creating an impoundment with a normal full pond elevation of 73 feet National Geodetic Vertical Datum. The Project has two powerhouses. Powerhouse A is supplied by one 866-foot-long, 20-foot-wide, 12-foot-high concrete penstock and has four generating units a total installed capacity of 2,780 kW and a maximum hydraulic capacity of 1,740 cfs. Powerhouse B is supplied by a 292-foot-long, 25-foot-wide, 12-foot-high concrete penstock and has three generating units with a total installed capacity of 3,738 kW and a maximum hydraulic capacity of 2,082 cfs. The Project also has three 325-foot-long, 2.4-kilovolt and one 600-foot-long, 12.5-kilovolt transmission lines; and appurtenant facilities. The Orono Powerhouse B commenced initial commercial operation December, 2013.

The Orono Project generates clean, renewable electricity while providing recreational opportunities (portage trail and nature trails), fish passage measures, consistent water levels that enhance habitats for waterfowl, etc., and substantial support of the local community through stable property tax payments, reliable voltage support of the electrical distribution system, etc.

On June 25, 2004, the Lower Penobscot River Basin Comprehensive Settlement Accord ("Lower Penobscot Agreement") was signed.¹ The Agreement represented an unprecedented collaboration to restore 11 species of sea-run fish while rebalancing hydropower generated on the river.² An integral part

¹ Parties to the Lower Penobscot Agreement include Black Bear Hydro Partners, LLC's predecessor PPL Maine, LLC; the Penobscot Indian Nation (Penobscot); U.S. Department of the Interior (Interior); Maine State Planning Office, Maine Atlantic Salmon Commission, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources ("Maine Agencies"); American Rivers, Inc., Atlantic Salmon Federation, Maine Audubon Society, Natural Resources Council of Maine, and Trout Unlimited; and the Penobscot River Restoration Trust ("Trust").

² When complete, the project will help restore native fisheries by markedly improving access to nearly 1000 miles of significant habitat for Atlantic salmon, American shad, and several other species of sea-run fish that once supported diverse economic opportunities as well as the biological health of the Penobscot River.

of the energy balance associated with the Agreement included relicensing and recommencement of operations at the Orono Hydroelectric Project. In June 2004 an application was filed with the Federal Energy Regulatory Commission ("FERC") for a new license to construct the improvements described herein, and operate the Orono Project. FERC issued the new license for the Orono Project on December 8, 2005 (113 FERC 62,181).

Pursuant to the Lower Penobscot Agreement, BBHP added 3.75MW via Powerhouse B to the existing Orono Project dam. The FERC License was amended September 14, 2012 to reflect the change in capacity and extend the term of the license accordingly.

The Orono Project license was transferred to Black Bear Hydro Partners, LLC by FERC order dated September 17, 2009 (128 FERC ¶62,212).

December 4, 2015

Ms. Dana Hall, Deputy Director
Low Impact Hydro Institute (LIHI)
PO Box 194
Harrington Park, NJ 07640

**SUBJECT: Orono A & B Hydroelectric Project (FERC No. 2710)
LIHI Application for Recertification (No. 66)**

Sworn Statement:

I hereby certify that the information provided in this Application is true and correct to the best of my knowledge.

Waiver of Liability:

The primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit. The Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions. The undersigned Applicant agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.



Kelly Maloney
Manager, Licensing and Compliance

December 4, 2015

Date



Todd Wynn
Vice President, Northeast Operations

December 4, 2015

Date

Black Bear Hydro Partners, LLC
Distribution for Orono & Stillwater Amendment Applications
May 2011

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Black Bear Hydro Partners, LLC
Distribution for Orono & Stillwater Amendment Applications
May 2011

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**LOWER PENOBSCOT RIVER
MULTIPARTY SETTLEMENT
AGREEMENT**

June 2004

LOWER PENOBSCOT RIVER MULTIPARTY SETTLEMENT AGREEMENT

Table of Contents

Recitals.....	1
I. Definitions.....	4
II. Regulatory Approvals And Related Activities	7
III. Grant And Exercise Of Option	7
IV. Actions After Execution Of The Agreement	9
V. Actions After Exercise Of The Option	14
VI. Actions After Closing	17
VII. Actions If the Trust Does Not Acquire The Designated Projects.....	21
VIII. Contingent Mitigation Fund.....	23
IX. Endangered Species Act ("ESA").....	23
X. Commitment By PPL Maine and PPL Great Works To Properly Maintain Designated Projects.....	25
XI. Additional Provisions Governing Howland.....	25
XII. Dispute Resolution.....	30
XIII. Efforts of the Parties	34
XIV. Miscellaneous.	35
Attachment A (fish passage measures).....	A-1
Attachment B (contingent mitigation fund).....	B-1

LOWER PENOBSCOT RIVER MULTIPARTY SETTLEMENT AGREEMENT

This Multiparty Settlement Agreement (the “Agreement”) is hereby entered into by PPL Maine, LLC (“PPL Maine”), PPL Great Works, LLC (“PPL Great Works”), PPL Generation, LLC (“PPL Generation”) (for the limited purposes set forth in Sections XIII(c) and XIV hereof); the Penobscot River Restoration Trust (the “Trust”); the Penobscot Indian Nation (“PIN”); the United States Department of the Interior acting through its bureaus the Fish and Wildlife Service (“FWS”), the Bureau of Indian Affairs (“BIA”), and the National Park Service (“NPS”) (collectively “DOI”); the Maine State Planning Office, the Maine Atlantic Salmon Commission, the Maine Department of Inland Fisheries and Wildlife, and the Maine Department of Marine Resources (collectively the “Maine Agencies”); American Rivers, Inc. (“AR”), the Atlantic Salmon Federation (“ASF”), the Maine Audubon Society (“MAS”), the Natural Resources Council of Maine (“NRCM”), and Trout Unlimited (“TU”) (AR, ASF, MAS, NRCM, and TU, hereinafter referred to collectively as the “Conservation Interests”); (except for PPL Generation, each a “Party” and collectively the “Parties”).

WHEREAS, PPL Maine (on behalf of itself, its parent corporation and PPL Great Works), PIN, DOI, the Maine Agencies, AR, ASF, NRCM, and TU entered into a Lower Penobscot River Conceptual Agreement (“CA”) in August, 2003 in which the designated negotiating representatives of those parties agreed to recommend the provisions of the CA to their respective principals and, upon receiving authorization, to proceed as promptly as possible to negotiate and finalize a comprehensive settlement agreement, as set forth in the CA, which provides that PPL Maine and PPL Great Works shall, in exchange for valuable consideration, grant a not-for-profit corporation an option to purchase and thereafter decommission and remove Veazie and Great Works and decommission and remove or alter Howland as provided herein

(collectively the “Designated Projects”), upon receipt of necessary regulatory approvals and otherwise in accordance with this Agreement;

WHEREAS, PPL Maine, PPL Great Works, PPL Generation and the Trust are executing among themselves a separate Lower Penobscot River Option Agreement (“Option Agreement”), a copy of which is attached as Exhibit 1, that establishes the terms of the Option;

WHEREAS, BIA, PIN, and PPL Maine are executing among themselves a separate settlement agreement (the “PIN Agreement”), a copy of which is attached as Exhibit 2, regarding (1) Milford and Milford’s impacts on PIN lands, resources, and other interests, and (2) the non-habitat impacts on PIN lands, resources, and other interests of the one-foot increase in the authorized maximum elevation of the reservoir at West Enfield contemplated in this Agreement;

WHEREAS, the Trust and PPL Great Works recognize that removal of the Great Works dam will influence certain operational aspects of the Georgia Pacific Corporation’s (“GPC”) paper mill that is located immediately adjacent to Great Works. The Trust and PPL Great Works will work with GPC to accomplish the removal of the Great Works dam in a manner consistent with legal obligations to GPC;

WHEREAS, the purchase price for the Designated Projects represents, in the view of the Parties, fair compensation for the economic value of the Designated Projects;

WHEREAS, implementation of this Agreement will significantly enhance fishery restoration efforts in the Penobscot River Basin and will resolve to the Parties’ satisfaction all pending fish passage issues associated with the Designated Projects and other hydroelectric projects in the Penobscot River Basin currently owned or operated by PPL Maine, while implementation of this Agreement and the separate PIN Agreement will resolve to the Parties’

satisfaction all issues raised in the requests for rehearing filed by PPL Maine's predecessor in interest, DOI, PIN, ASF, MAS, Maine Council of the Atlantic Salmon Foundation ("MCASF"), and TU of the Federal Energy Regulatory Commission's ("FERC") April 20, 1998 orders for Basin Mills, Veazie, Milford, Orono, and Stillwater;

WHEREAS, MCASF is a not-for-profit corporation which, in addition to ASF, MAS, and TU, filed a request for rehearing of certain aspects of FERC's above-mentioned April 20, 1998 orders, and has authorized ASF to withdraw its request for rehearing of said orders so long as ASF does the same;

WHEREAS, PPL Maine is the indirect owner of the managing general partner of Bangor Pacific Hydro Associates ("BPHA"), the licensee of West Enfield, and has obtained written authorization from the indirect owner of the only other general partner of BPHA to act on behalf of BPHA to file all applications and take all other actions required of BPHA in this Agreement in association with West Enfield;

WHEREAS, the Parties understand that: this Agreement is not related to the issue of whether the run of Atlantic salmon on the Penobscot River should be included within the Maine population of Atlantic salmon that is listed as endangered under the Endangered Species Act; by enhancing upstream and downstream fish passage and restoring habitat, the actions contemplated under this Agreement will improve significantly the prospect of recovery of Atlantic salmon, as well as other migratory fish populations, in the Penobscot River Basin; and implementation of this Agreement is unlikely to affect the responsibilities or rights of others if the Penobscot run of Atlantic salmon is included within the listed endangered population;

WHEREAS, this Agreement contains provisions to significantly enhance hydroelectric energy production at remaining facilities owned or operated by PPL Maine and

thereby replace substantially all of the hydroelectric energy lost through the removals or alterations of Great Works, Howland, and Veazie;

WHEREAS, the Parties have commenced and intend to continue to explore with affected communities, businesses, and other persons ways in which the benefits of the proposed removals or alteration can be maximized, and potential impacts minimized or mitigated;

WHEREAS, the Conservation Interests and PIN are committed to securing, with the appropriate coordination and support of the other Parties, funding necessary to carry out the purposes of this Agreement;

WHEREAS, the Parties believe that the provisions contained in this Agreement are in the best interests of the Parties, and DOI and the Maine Agencies believe (without pre-determining the outcome of notice and comment procedures) that such provisions are consistent with the missions, goals, and, where applicable, the statutory obligations of DOI and the Maine Agencies;

WHEREAS, the Conservation Interests, DOI, the Maine Agencies, and PIN (collectively, the “Restoration Interests”) recognize and commend PPL Generation, PPL Maine, and PPL Great Works for their environmental stewardship and commitment to restoration of fisheries of the Penobscot River, as evidenced by its willingness to execute this Agreement;

NOW, THEREFORE, for good and valuable consideration, the Parties agree as follows:

I. Definitions

- (a) **“Applicable Laws and Regulations”** means all duly promulgated federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or

administrative orders, permits and other duly authorized actions or legal requirements of any Governmental Authority.

- (b) **“Basin Mills”** means the dam and appurtenant property and facilities proposed by PPL Maine’s predecessor in interest under FERC Project No. 10981.
- (c) **“BPHA”** means Bangor Pacific Hydro Associates.
- (d) **“Closing”** means the transfer of all right, title and interest in the Designated Projects from PPL Maine and PPL Great Works to the Trust pursuant to the terms of the Option Agreement.
- (e) **“DEP”** means the Maine Department of Environmental Protection.
- (f) **“Effective Date”** means the date upon which the last Party executes this Agreement.
- (g) **“FERC”** means the Federal Energy Regulatory Commission.
- (h) **“FPA”** means the Federal Power Act, 16 U.S.C. § 791a *et seq.*
- (i) **“Great Works”** means the dam and appurtenant property and facilities owned by PPL Great Works under FERC Project No. 2312.
- (j) **“Governmental Authority”** means any federal, state, local or other governmental regulatory, legislative, or administrative agency, court, commission, department, board, or other governmental subdivision with jurisdiction over any of the Parties, their respective facilities, or the respective services they provide, and which is exercising, or is entitled to exercise, any authority over any of the Parties, their respective facilities, or the respective services they provide under the terms of this Agreement.
- (k) **“Howland”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2721.

- (l) **“Medway”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2666.
- (m) **“Milford”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2534.
- (n) **“NEPA”** means the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.*
- (o) **“Option”** means the option to purchase the Designated Projects as described in Section III(a)(1) of this Agreement.
- (p) **“Orono”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2710.
- (q) **“PIN Agreement”** means the agreement, attached hereto as Exhibit 2, executed by PIN, BIA and PPL Maine regarding the impacts of operational changes at Milford and West Enfield.
- (r) **“Restoration Interests”** means collectively the Conservation Interests, DOI, the Maine Agencies, and PIN.
- (s) **“Regulatory Application”** means any application, petition, or other request for a license, permit, certification, or other regulatory approval or action filed by any Party with any Governmental Authority as required by this Agreement or by Applicable Laws and Regulations.
- (t) **“Stillwater”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2712.
- (u) **“Veazie”** means the dam and appurtenant property and facilities owned by PPL Maine under FERC Project No. 2403.

- (v) “**West Enfield**” means the dam and appurtenant property and facilities owned by BPHA under FERC Project No. 2600.

II. Regulatory Approvals And Related Activities

(a) Each Party shall file all Regulatory Applications required of it by this Agreement and Applicable Laws and Regulations. Each Party also shall file with FERC, DEP, DOI, and any other Governmental Authority appropriate pleadings, as required of it by this Agreement, supporting the Regulatory Applications filed by other Parties; *provided, however*, that, on matters not specifically addressed in this Agreement, DOI and the Maine Agencies reserve the right to make specific comments and recommendations pursuant to their statutory and regulatory authorities that are consistent with the terms and intent of this Agreement.

(b) Attachment A hereto describes the Parties’ agreement as to PPL Maine and PPL Great Work's obligations regarding upstream and downstream fish passage measures at their hydroelectric projects during each phase of this Agreement. DOI shall submit to FERC at the times identified herein modifications of its prescriptions for fishways consistent with the provisions of Attachment A. In each instance where DOI so proposes to modify its prescriptions for fishways, consistent with the provisions of Attachment A, it shall (1) comply with its policy for notice and comment before submitting any modified prescriptions to FERC, and (2) thereafter file the modified prescriptions resulting from the notice and comment process for fishways with FERC for inclusion in the respective licenses.

III. Grant And Exercise Of Option

(a) PPL Maine, PPL Great Works, PPL Generation and the Trust shall, on the Effective Date, execute the Option Agreement attached hereto as Exhibit 1. As expressly set forth in the Option Agreement:

- (1) The Trust will receive an option from PPL Maine and PPL Great Works to purchase the Designated Projects (“Option”);
- (2) The Option may be exercised by the Trust for a period of five years, beginning on the Effective Date, by means of the Trust providing written notification to PPL Maine and PPL Great Works; *provided, however*, that the Trust may not exercise the Option unless final orders/approvals that are no longer subject to administrative or judicial appeal granting/approving the applications/requests set forth in Section IV have been issued and without alteration or change in any term or provision of the applications/requests that materially prejudices any Party, unless such alteration or change is deemed acceptable to the Parties in accordance with the provisions of Section XII;
- (3) Exercise of the Option shall contractually bind the Trust to purchase the Designated Projects, which PPL Maine and PPL Great Works shall sell to the Trust. The Trust and PPL Maine and PPL Great Works shall not be so bound if the conditions precedent to closing, as described Section V(d), are not achieved;
- (4) At any time prior to its exercise of the Option, the Trust may terminate the Option, upon written notification to PPL Maine and PPL Great Works of its intent to do so;
- (5) The purchase price for the Designated Projects shall be \$24 million if the Option is exercised before the end of its third year, \$25 million if the Option is exercised during its fourth year, and \$26 million if the Option is

exercised during its fifth year; *provided, however*, that, if Closing occurs more than one year after the written notification to exercise the Option is provided to PPL Maine and PPL Great Works, the purchase price shall be escalated by three (3) percent per annum, accrued and compounded daily, beginning on the day following such one-year period and continuing until Closing occurs; and

- (6) The purchase price shall be paid by the Trust to PPL Maine and PPL Great Works at Closing.

- (b) Closing shall occur within 60 days (unless extended by mutual agreement of PPL Maine, PPL Great Works, and the Trust) of the completion of the events described in Section V(d) of this Agreement.

- (c) Subject to the unanimous approval of the Restoration Interests, the Trust may assign all of its rights and obligations under this Agreement and the Option Agreement to another not-for-profit corporation or governmental entity. Prior to any such assignment, the Restoration Interests and the Trust shall consult with PPL Maine and PPL Great Works regarding the proposed assignment.

IV. Actions After Execution Of The Agreement

Contemporaneously with the execution of this Agreement, the Parties shall take the following actions:

- (a) The Parties shall make an initial joint filing at FERC explaining the overall structure of this Agreement and submitting a copy of this Agreement for informational purposes only. This initial joint filing at FERC shall also include the following Regulatory Applications requesting that FERC take the following actions:

- (1) Suspend the FERC relicensing proceedings, including the NEPA analyses, for Howland and Great Works until the Option has been exercised, has expired, or has been terminated; and
- (2) Extend, until the Option has been exercised and the Designated Projects are purchased, or the five-year Option period expires, or has been terminated, whichever is earlier, and for appropriate periods of time to permit the Parties to comply with the provision of Sections V, VI, and VII, the requirements (i) that PPL Maine initiate and complete the installation of an additional turbine/generating unit at Milford, including the requirement that PPL Maine file progress reports regarding the installation of the additional generating unit; and (ii) that PPL Maine submit a final recreation plan for Veazie.

(b) DOI shall submit to FERC modified fishway prescriptions for Veazie, Milford, Stillwater, and Orono consistent with the pertinent provisions of Attachment A, for inclusion in the licenses for such projects as articles. DOI shall inform FERC that the requirements contained in the modified fishway prescriptions for Milford, Stillwater and Veazie are to replace the fish passage related articles of the Milford (Articles 407, 408, and 409) and Stillwater (Articles 406, 407, and 408) licenses and modify the fish passage related articles of the Veazie (Articles 407, 408, and 409) license. These prescriptions shall address PPL Maine's responsibilities for fish passage (1) upon the Effective Date of this Agreement, and (2) upon acquisition of the Designated Projects by the Trust, all as defined in Attachment A.

(c) PPL Maine shall file (or shall cause BPHA to file, as appropriate) Regulatory Applications at FERC (1) requesting that FERC amend the appropriate articles of the licenses for

Milford, Stillwater, and West Enfield to incorporate the pertinent fish passage and minimum flow requirements as provided for in Attachment A, and (2) requesting an amendment to the licenses for Milford and West Enfield to implement the relevant provisions of the PIN Agreement, with the Restoration Interests filing supportive pleadings. The Regulatory Application to be filed at FERC hereunder with respect to Milford shall also include requests that FERC delete Article 410 from the license and modify the time deadlines specified in Articles 301 and 305 thereof to “as ordered by the Commission.” The Regulatory Applications to be filed at FERC hereunder with respect to Milford and Stillwater shall also include requests that FERC amend Article 411 of the Milford license and Article 409 of the Stillwater license by adding at the end of each thereof before the period the following: “that are consistent with the Lower Penobscot River Multiparty Settlement Agreement dated June 2004”.

(d) PPL Maine shall file (or shall cause BPHA to file, as appropriate) Regulatory Applications at FERC requesting (1) that the licenses for West Enfield, Stillwater, and Medway each be amended to increase the authorized maximum elevation of the project reservoir by one foot ("Headpond Increases"), and (2) requesting that FERC issue to PPL Maine a new 40-year license for Orono at its current authorized installed capacity of 2,332 kW incorporating the pertinent fish passage and minimum flow requirements provided for in Attachment A, with the Restoration Interests filing supportive pleadings. The Regulatory Application to be filed at FERC hereunder with respect to the new 40-year license for Orono shall also include a request that FERC limit any article reserving FERC’s authority to require the licensee to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce under Section 18 of the FPA to fishways “that are consistent with the Lower Penobscot River Multiparty Settlement Agreement dated June 2004”. The Regulatory

Applications to be filed at FERC hereunder shall also include a request that FERC add to or include in each such license an article requiring the licensee to comply with the provisions of the Contingent Mitigation Fund contained in Attachment B hereto.

(e) PPL Maine shall file a Regulatory Application at FERC requesting that FERC modify the time deadlines specified in Articles 306 and 406 of the Veazie license to “as ordered by the Commission” and amend Article 410 of the Veazie license by adding at the end thereof before the period the following: “that are consistent with the Lower Penobscot River Multiparty Settlement Agreement dated June 2004”, with the Restoration Interests filing supportive pleadings.

(f) (1) PPL Maine and PPL Great Works shall file, and PPL Maine shall have BPHA file, with DEP any Regulatory Applications required by Applicable Laws and Regulations to be filed with DEP in association with the Regulatory Applications required by Section IV(a), (b), (c), (d), and (e), with the Restoration Interests filing supportive pleadings.

(2) Notwithstanding the requirement in the opening paragraph of this Section IV regarding contemporaneous filings, at the times determined appropriate by PPL Maine and PPL Great Works, PPL Maine and PPL Great Works shall file (or shall cause BPHA to file, as appropriate) any Regulatory Applications required by Applicable Laws and Regulations to be filed with any other Governmental Authority in association with the Regulatory Applications required by Section IV(a), (b), (c), (d), and (e), with the Restoration Interests filing supportive pleadings.

(g) If FERC, DEP, DOI, or any other Governmental Authority takes action in response to any Regulatory Application made in accordance with this Section IV in a manner that materially prejudices a Party and that Party elects to terminate this Agreement in accordance

with Section XII, all Regulatory Applications made in accordance with this Section IV shall be withdrawn by the Party making such application, or other appropriate action shall be taken by the Party making such application to rescind any approvals that may have been granted pursuant to any such Regulatory Application, and the provisions of this Agreement shall be void. Each Party submitting a Regulatory Application pursuant to this Section IV (a), (b), (c), (d), (e), and (f)(1) shall notify FERC and DEP that a failure by FERC or DEP to grant any of said Regulatory Applications will cause all such Regulatory Applications to be withdrawn and may result in the termination of this Agreement pursuant to Section XII.

(h) Within 30 days following the later of (1) issuance by FERC and DEP of a final order(s), that is no longer subject to administrative or judicial appeal approving all the Regulatory Applications filed pursuant to Section IV (a), (b), (c), (d), (e), and (f)(1) and incorporating as license articles/provisions those provisions requested as part of such Regulatory Applications, and any relevant provisions contained in the PIN Agreement, and (2) resolution of any administrative and judicial appeals of such orders in a manner that is no longer subject to appeal, all without alteration or change in any term or provision thereof in a manner that materially prejudices any Party, the following Parties shall take the following actions:

- (1) PPL Maine, DOI, PIN, ASF, MAS, and TU shall file with FERC notices of withdrawal of the requests for rehearing filed by such entities and MCASF (or their predecessors) of FERC's April 20, 1998 orders for Basin Mills, Veazie, Milford, Orono, and Stillwater; and
- (2) DOI shall file with FERC a notice withdrawing, without prejudice to its position, its asserted conditions/requests under Sections 4(e) and 10(e) of the FPA that it submitted for Milford.

The Parties agree that all issues relating to DOI's authority under Sections 4(e) and 10(e) of the FPA as to Milford shall be rendered moot as a result of the withdrawal referenced in Section IV(h)(2) above.

V. Actions After Exercise Of The Option

(a) As expressly set forth in the Option Agreement, and within thirty (30) days from the date the Trust delivers written notice to PPL Maine and PPL Great Works that the Option is being exercised, PPL Maine, PPL Great Works and the Trust shall file the following Regulatory Applications at FERC:

- (1) PPL Maine and the Trust shall file joint Regulatory Applications (i) requesting a transfer of the licenses for Howland and Veazie (pursuant to Part I of the FPA) and requesting a transfer of all jurisdictional transmission facilities included with such licenses (pursuant to § 203 of the FPA) from PPL Maine to the Trust and (ii) requesting that the Trust be substituted as the applicant on the pending application for a new license for Howland;
- (2) PPL Great Works and the Trust shall file joint Regulatory Applications (i) requesting a transfer of the license for Great Works (pursuant to Part I of the FPA) and requesting a transfer of all jurisdictional transmission facilities included with such license (pursuant to § 203 of the FPA) from PPL Great Works to the Trust and (ii) requesting that the Trust be substituted as the applicant on the pending application for a new license for Great Works;

(3) The Trust shall file a Regulatory Application requesting authority to either (i) surrender the licenses for the Designated Projects and for FERC authorization to decommission and remove them, with PPL Maine and PPL Great Works filing supporting pleadings; or (ii) surrender the licenses for Great Works and Veazie and for FERC authorization to decommission and remove them, and, in accordance with Section XI, to decommission Howland and construct a fish bypass system at Howland in accordance with Section XI, with PPL Maine and PPL Great Works filing a supportive pleading. The application to FERC pursuant to this subsection (3) shall also include (i) a notice of withdrawal of the pending applications for new licenses for Howland and Great Works effective upon issuance of FERC orders in accordance with the requests referenced in subsections (1), (2), and (3) hereof; and (ii) a statement of the financial resources that the Trust has or anticipates having to acquire, decommission and remove or alter the Designated Projects and the anticipated costs of these actions.

(b) Contemporaneously with the filing of the requests with FERC referenced in subsections (a) hereof, the Parties making such filings shall file with DEP and any other Governmental Authority all additional Regulatory Applications required by Applicable Laws and Regulations to implement the transfer and decommissioning (or decommissioning and construction) actions described in Section V(a), with PPL Maine or PPL Great Works, as appropriate, when not a requesting party, filing a supportive pleading.

(c) For all Regulatory Applications filed pursuant to Sections V(a) and (b), the Restoration Interests shall file timely supportive pleadings. In addition, for all Regulatory

Applications and supportive pleadings filed pursuant to Sections V(a) and (b), the Trust, PPL Maine or PPL Great Works, as appropriate, and the Restoration Interests shall all request the relevant Governmental Authority to consider the Regulatory Applications on an expedited basis; *provided, however*, that (1) no Party shall request that any such Governmental Authority waive any public notice or comment period in considering any such Regulatory Application and (2) the Maine Agencies shall not be required to request that any state or local Governmental Authority consider any Regulatory Application on an expedited basis.

(d) As expressly set forth in the Option Agreement, Closing shall occur within sixty (60) days (unless extended by mutual agreement of PPL Maine, PPL Great Works and the Trust), following the later of (1) issuance of final orders or approvals, that are no longer subject to administrative or judicial appeal, by FERC, DEP and any other Governmental Authority, approving the Regulatory Applications filed pursuant to Section V(a) and (b) of this Agreement; or (2) resolution of any administrative or judicial appeals of the final orders and approvals referenced herein in a manner that is no longer subject to appeal; all without alteration or change in any term or provision of the Regulatory Applications filed pursuant to Section V(a) and (b) in a manner that materially prejudices any Party, unless such alteration or change is deemed acceptable to the Parties in accordance with the provisions of Section XII. A FERC order approving a Regulatory Application filed pursuant to subsection (a)(1) or (2) that requires PPL Maine or PPL Great Works, as the case may be, to remain a co-licensee or to be directly or indirectly responsible for the decommissioning or removal of the Designated Projects or the costs thereof shall constitute material prejudice to PPL Maine or PPL Great Works under Section XII(a), and in such event Closing shall not occur and this Agreement shall terminate without PPL Maine or PPL Great Works, as the case may be, following the procedures set forth in Section

XII(a)(1) and (2), unless PPL Maine or PPL Great Works, as the case may be, in its sole discretion, notifies the other Parties to the contrary.

VI. Actions After Closing

After Closing the following Parties shall take the following actions:

(a) As expressly set forth in the Option Agreement, promptly after receipt of the instruments of conveyance (“Conveyance Documents”) for the Designated Projects, the Trust shall file the Conveyance Documents with FERC, together with any other document required by Applicable Laws and Regulations to be filed, accepting the licenses for the Designated Projects. The Trust shall make any filings with DEP and any other Governmental Authority that may be required by Applicable Laws and Regulations regarding notification of the transfer of the Designated Projects.

(b) At the earliest time practicable, consistent with this Agreement and all FERC, DEP, and other Applicable Laws and Regulations, the Trust shall (1) decommission and remove Veazie and Great Works; and (2) decommission and, according to the requirements in Section XI of this Agreement, either remove or alter Howland.

(c) In the event that PPL Maine pursues an energy enhancement specified in Section VI(d), PPL Maine shall remove and take ownership of the appropriate existing turbine/generating unit(s) associated with that energy enhancement from the powerhouses at Veazie and Great Works as expressly set forth in the Option Agreement.

(d) Subject to the conditions stated in Section VI(f) and (g) herein, as soon after Closing as it is reasonably able to do so PPL Maine shall file the following Regulatory Applications at FERC, with the Restoration Interests filing supportive pleadings:

- (1) A notification that it intends to proceed with the installation of the previously-authorized additional turbine/generating unit at Milford using a 1,500 kW turbine/generating unit removed from Veazie.
- (2) A request to amend the appropriate provisions of the Orono license to authorize PPL Maine to construct a second powerhouse containing four turbine/generating units removed from Great Works with a total installed capacity of approximately 5,277 kW, and to extend the term of the license to 50 years.
- (3) A request to amend the appropriate provisions of the Stillwater license to authorize PPL Maine to construct a second powerhouse containing four turbine/generating units removed from Great Works with a total installed capacity of approximately 2,720 kW, and to extend the term of the license to 50 years.
- (4) A request to amend the appropriate provisions of the Medway license to authorize PPL Maine to increase the installed capacity by approximately 700 kW through the installation of a turbine/generating unit removed from Veazie.
- (5) A request to amend the appropriate provisions of the Ellsworth license, Project No. 2727, to authorize PPL Maine to increase the installed capacity by approximately 500 kW through the addition at the Graham Lake development of a turbine/generating unit removed from Veazie.

(e) Contemporaneously with the filing at FERC of the Regulatory Applications referenced in subsection (d) hereof, PPL Maine shall file with DEP and any other Governmental

Authority, all Regulatory Applications required by Applicable Law and Regulations, with the Restoration Interests filing supportive pleadings.

(f) PPL Maine shall not be required to pursue an energy enhancement referenced in Sections VI(d)(1) and (4), notwithstanding PPL Maine's determination that these energy enhancements are currently economic and therefore would be constructed today, if PPL Maine determines that any such enhancement would be uneconomic because of significant changes in the regulatory and competitive conditions applicable to wholesale generators, the cost of construction, the prices of electricity, or other PPL Corporation capital commitments.

(g) PPL Maine shall not be required to pursue an energy enhancement referenced in Sections VI(d)(2), (3) and (5), notwithstanding PPL Maine's determination that these energy enhancements are currently economic and therefore would be constructed today, if PPL Maine determines, within three months of Closing, in its discretion, that such enhancement is no longer desirable because of changes in the regulatory and competitive conditions applicable to wholesale generators, the cost of construction, the prices of electricity, other PPL Corporation capital commitments, or other relevant factors. If PPL Maine makes such a determination not to pursue the energy enhancement(s), then PPL Maine shall promptly offer to third parties the opportunity to pursue such energy enhancement(s) on terms comparable to those that would have applied if PPL Maine had itself chosen to pursue such energy enhancement(s); *provided, however,* that any such third party must apply for and obtain all necessary regulatory approvals, including FERC approval, and must reach agreement with PPL Maine as to appropriate lease, water rights use, right-of-way and operating issues to permit both parties to reasonably and fairly operate together on the site of the energy enhancement. PPL Maine shall assist and support any such third party in obtaining the necessary regulatory approvals, including FERC approval, to

pursue such energy enhancement(s). Unless otherwise agreed to by PPL Maine and the third party, the agreement(s) between PPL Maine and a third party regarding the latter's construction and operation of an energy enhancement must be consistent with the following criteria:

- (1) PPL Maine shall be entitled to compensation for: any actual damages to its property and facilities resulting from the third party's construction and operation of the energy enhancement; any loss in the economic value of the existing generation at PPL Maine's project resulting from the third party's construction and operation of the energy enhancement; any increased operation, maintenance, and capital costs incurred by PPL Maine as a result of the third party's construction and operation of the energy enhancement; the fair market value of any property sold by PPL Maine to the third party; and a proportionate share of PPL Maine's operation, maintenances, and capital costs (including a reasonable rate of return on investment) of the PPL Maine project facilities jointly used by the third party's energy enhancement.
- (2) PPL Maine and the third party will provide each other with access rights over or through the other's property reasonably necessary for the entity to construct, operate, and maintain its project or energy enhancement and to comply with all Applicable Laws and Regulations, subject to reasonable restrictions regarding security and safety and commercially reasonable requirements regarding liability, insurance, and related matters.
- (3) PPL Maine and the third party will mutually agree on operating requirements that will permit PPL Maine's project and the energy

enhancement to operate in a coordinated manner to maximize the total economic generation at the site but subject to PPL Maine's right to determine when water available at the site may be used for generation purposes; *provided, however*, that PPL Maine shall not take any action regarding allocation of flows between the Main Stem and Stillwater branches of the Penobscot River which is inconsistent with subsection (h) below and the relevant provisions in Attachment A.

(h) Upon receipt by PPL Maine of all necessary approvals of the Regulatory Applications referenced in subsections (d) and (e) hereof, and consistent with any requirements contained in such approvals, PPL Maine shall implement the energy enhancements so approved. Upon construction of either or both of the second powerhouses at Orono and Stillwater by either PPL Maine or a third party, PPL Maine shall reallocate the flows between the Main Stem and Stillwater branches of the Penobscot River consistent with the provisions contained in Attachment A. PPL Maine hereby represents that it is the successor in interest to all of the parties to the decree allocating flows between the Main Stem and Stillwater branches issued in 1911 by the Circuit Court of the United States, District of Maine.

VII. Actions If the Trust Does Not Acquire The Designated Projects

If FERC, DEP, DOI, and all other Governmental Authorities take all actions requested by the Parties in Section IV in a manner which does not materially prejudice any Party as set forth in Section XII, and if the Trust thereafter either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire the Designated Projects:

(a) The following actions shall be taken:

- (1) The Parties shall jointly file a Regulatory Application at FERC requesting that the relicensing proceedings for Howland and Great Works be resumed;
- (2) DOI shall submit to FERC modified fishway prescriptions, consistent with the pertinent provisions of Attachment A;
- (3) PPL Maine, or PPL Great Works, as appropriate, and the other Parties shall file pleadings supporting DOI's modified fishway prescriptions submitted pursuant to subsection (2) above; and
- (4) Contemporaneously with the filing at FERC of supportive pleadings referenced in subsection (3) above, PPL Maine or PPL Great Works, as appropriate, shall file with DEP and any other Governmental Authority, all Regulatory Applications required by Applicable Laws and Regulations in order to implement the modified fishway prescriptions submitted pursuant to subsection (2) above, with the Restoration Interests filing supportive pleadings.

(b) Subject to the conditions agreed to in Attachment B (contingent mitigation fund), PPL Maine (and, as appropriate, BPHA) shall be entitled to operate West Enfield, Stillwater, and Medway consistent with the approved Headpond Increases and reduced minimum flows (as to Stillwater and Orono) and to operate Orono under the new license consistent with Section IV(c) and (d) and with Applicable Laws and Regulations. All other Parties hereto shall not challenge or contest such regulatory approvals, and agree not to request that FERC or any other Governmental Authority (1) reverse or overturn such Governmental Authority's prior authorization or approval of such operations or (2) limit or condition such prior approval or

authorization in a manner that would prevent PPL Maine from being able to operate the project economically.

VIII. Contingent Mitigation Fund

If the Option is not exercised or Veazie and Great Works are not decommissioned and removed by the Trust, a Contingent Mitigation Fund shall be established and funded for the purpose of providing monetary compensation to mitigate for the impacts to habitat that may be caused by PPL Maine's implementation of provisions in Attachment A governing minimum bypass flows at the Orono and Stillwater projects and the Headpond Increases at the Medway, West Enfield, and Stillwater projects, in accordance with Attachment B.

IX. Endangered Species Act ("ESA")

The following provisions describe ESA-related actions that certain Parties shall take or refrain from taking (1) upon execution of this Agreement and (2) in the event that the Option is exercised:

(a) Assurances to PPL Maine and BPHA from DOI. Upon exercise of the Option, DOI agrees to negotiate with PPL Maine (and BPHA, as appropriate) for an appropriate instrument under the ESA regulations, such as, but not limited to, an incidental take permit under § 10 of the ESA or a Candidate Conservation Agreement with Assurances, that recognizes the benefits to Atlantic salmon that shall be realized from PPL Maine's voluntary action in entering into and implementing this Agreement, and provides assurances that, if the Designated Projects are acquired in accordance with this Agreement, further actions shall not be required by PPL Maine at its remaining facilities on the Penobscot River, or by BPHA at West Enfield, in the event that the Penobscot run of Atlantic salmon is included in the listed endangered population in Maine. DOI's final approval of such an instrument depends upon compliance with Applicable

Laws and Regulations, including public notice and any environmental analysis that may be required under NEPA. The PIN, the Maine Agencies, and the Conservation Interests agree to support the application(s) of PPL Maine (and BPHA, as appropriate) for such an instrument.

(b) Other Assurances from DOI. DOI shall consider appropriate instrument(s) under the ESA regulations for individual property owners in the Penobscot basin who commit to take voluntary conservation measures to benefit Atlantic salmon. Such instruments may include assurances, if necessary and warranted, that participating property owners may engage in land uses that may involve incidental take of Atlantic salmon. The nature and terms of any such instruments shall depend on the specific circumstances of the individual property owner, and DOI's final approval of any such instrument depends upon compliance with Applicable Laws and Regulations, including public notice and any environmental analysis that may be required under NEPA. DOI shall provide technical assistance to property owners who lack resources or expertise to develop such instruments, and may assist or train property owners to implement conservation measures. After exercise of the Option, DOI would be willing to consider an application from interested State, Tribal, or local agencies regarding creation of umbrella programs under the ESA regulations for recognition of voluntary conservation measures to benefit Atlantic salmon taken by individual property owners in the Penobscot basin.

(c) Assurances to PPL Maine, PPL Great Works, and BPHA from the Conservation Interests. In the event that the Penobscot run of Atlantic salmon is added to the listed endangered population in Maine, the Conservation Interests agree that, until the occurrence of (1) the exercise of the Option and the acquisition of the Designated Projects; (2) the termination

of this Agreement; or (3) the expiration or termination of the Option Agreement, the Conservation Interests shall not file a citizen suit against PPL Maine, PPL Great Works, or BPHA asserting a claim that PPL Maine, PPL Great Works, or BPHA is illegally taking Atlantic salmon in violation of § 9 of the ESA, nor shall the Conservation Interests encourage any other person or entity to either file similar claims or take any other action against PPL Maine, PPL Great Works, or BPHA under the ESA in relation to Atlantic salmon on the Penobscot River. In addition, provided that licensing proceedings for Great Works and Howland are stayed as a result of Regulatory Applications filed pursuant to Section IV(a)(1) of this Agreement, the Conservation Interests further agree not to initiate any administrative or legal action seeking to apply the consultation requirements of the ESA (16 U.S.C. § 1536) for Great Works or Howland until the Option is exercised and the Designated Projects are acquired, the termination of this Agreement, or, alternatively, until the Option expires or is terminated.

X. Commitment By PPL To Properly Maintain Designated Projects

PPL Maine and PPL Great Works commit to properly maintain the Designated Projects prior to the acquisition of the Designated Projects by the Trust, as expressly set forth in the Option Agreement.

XI. Additional Provisions Governing Howland

(a) It is the intent of the Restoration Interests, working with the Trust, the Town of Howland, and other interested persons, and subject to any order issued by FERC, and other applicable legal requirements and provisions in this Agreement, to achieve fish passage at Howland by construction of a bypass system that would substantially or entirely maintain the existing dam structure and impoundment (“Proposed Bypass”).

(b) The decision of the Trust to pursue construction of the Proposed Bypass will require a prior determination by the FWS, the Maine Departments of Inland Fisheries and Wildlife and Marine Resources, the Maine Atlantic Salmon Commission (“Resource Agencies”), and PIN, based upon a review of the complete administrative record, that the Proposed Bypass will provide safe, timely and effective fish passage sufficient to allow the fisheries management goals and objectives of the Resource Agencies and PIN to be met. Said administrative record shall include engineering design plans for the proposed bypass system, the results of consultation with the Town of Howland, the Conservation Interests, the Trust, and other interested persons, and any other information necessary to make a decision as to whether the Proposed Bypass provides safe, timely and effective fish passage. If the Resource Agencies and PIN decide that the Proposed Bypass will provide safe, timely and effective fish passage, the Resource Agencies and PIN shall thereafter support issuance of necessary regulatory approvals for construction and maintenance of the Proposed Bypass.

(c) Upon receipt of the commitment of support from the Resource Agencies and PIN pursuant to subsection (b) above, the Trust shall seek all necessary regulatory approvals to construct the proposed bypass pursuant to Section V(a) and (b) if the Trust determines that:

- (1) In addition to the commitment of support from the Resource Agencies and PIN pursuant to subsection (b) above, there is sufficient support for constructing the Proposed Bypass from the Town of Howland as well as others whose support is necessary for construction and implementation of the Proposed Bypass;

- (2) All necessary property interest, ownership, liability, and operational issues related to construction and operation of the proposed bypass are resolvable;
- (3) Receipt of the necessary regulatory approvals is reasonably achievable; and
- (4) Adequate funding for construction and implementation of the proposed bypass is available. The Conservation Interests commit their best efforts to raise these funds, and the Resource Agencies and PIN commit their best efforts to provide ongoing technical support.

(d) Subject to the support of the Resource Agencies and PIN as set forth in subsection (b) above, and the determination by the Trust that the criteria set forth in subsection (c) above have been met, the Trust shall cause the Proposed Bypass to be constructed consistent with all required approvals from any Governmental Authority and all Applicable Laws and Regulations.

(e) In the event that the Trust does not pursue construction of the Proposed Bypass due to a determination by the Resource Agencies or PIN, pursuant to subsection (b), that the Proposed Bypass will not provide safe, timely and effective fish passage sufficient to allow the fisheries management goals and objectives of the Resource Agencies and PIN to be met, or due to the determinations made by the Trust pursuant to subsection (c) above, its Regulatory Applications submitted pursuant to Section V(a) and (b) shall request removal of Howland dam. If the Trust's Regulatory Applications, submitted pursuant to Section V(a) and (b), request authorization to construct the Proposed Bypass in lieu of removing Howland dam but the regulatory authorities deny the request to construct the Proposed Bypass and instead order removal of Howland dam, the Trust shall remove Howland dam consistent with any approvals

from any Governmental Authority, Applicable Laws and Regulations, and other conditions above.

- (f) If the Trust elects to construct the Proposed Bypass pursuant to this section:
 - (1) The Trust shall submit final design drawings, consistent with the conceptual engineering designs in subsection (b) hereof, for approval by the Resource Agencies and PIN.
 - (2) The Trust shall conduct monitoring of the effectiveness of the Proposed Bypass, in consultation with the Resource Agencies and PIN, and make minor adjustments, as necessary, for a period of 15 years from installation of the fish passage facility at Milford. No major adjustments will be required during this monitoring period. For purposes of this Section XI, the term “major” shall mean an adjustment or recommendation which requires the Trust to expend in excess of five-thousand dollars (\$5,000) during any one calendar year.
 - (3) The Trust shall meet with the Resource Agencies, PIN, and other interested parties on a yearly basis, or as appropriate, to discuss the progress of the monitoring.
 - (4) At the close of the 15-year monitoring period set forth in subsection f(2) above, the Resource Agencies, PIN, and the Trust shall publish for public comment a report on the effectiveness of the bypass system.
 - (5) Thereafter, based upon the results of the monitoring, other biological or engineering information related to the effectiveness of the bypass system,

and any comments or data submitted by the Trust, the Town of Howland, or other interested parties, the Resource Agencies and PIN shall:

- i. recommend, or, in the case of FWS, recommend and grant final approval of the Proposed Bypass; or
 - ii. recommend modification(s) to the Proposed Bypass, which may be minor or major but must be feasible for the Trust given cost and technological concerns, and which may include extending the 15-year monitoring period, if necessary, to ensure effectiveness of the modification(s); or
 - iii. recommend removal of Howland if the record supports a finding that the bypass system cannot provide safe, timely and effective fish passage, even with any modification(s) proposed pursuant to subsection (ii) above, and therefore cannot meet identified management goals of the Resource Agencies and PIN.
- (6) If the Resource Agencies and PIN recommend modification(s) of the Proposed Bypass which are consistent with the provisions of subsection (ii) above, the Trust shall implement such modification(s) subject to any necessary approvals of any Governmental Authority and Applicable Laws and Regulations.
- (7) If following the 15-year monitoring period (including any extensions pursuant to subsection (ii) above), the Resource Agencies and PIN conclude that removal of Howland is necessary in order to provide safe, timely and effective fish passage at Howland, the Trust shall seek the

necessary approvals from each Governmental Authority for removal of the dam, and shall remove the dam.

(g) The Trust may assign, transfer or sell its ownership interest in Howland to another entity, subject to the unanimous approval of the Resource Agencies and PIN, which approval shall be granted if the assignment, transfer or sale includes all rights and obligations of the Trust in Section XI of this Agreement and if the assignee has the legal, financial and technical ability to carry out the responsibilities of the Trust under said Section XI. Prior to any such assignment, the Resource Agencies, PIN and the Trust shall consult with PPL Maine regarding the proposed assignment.

XII. Dispute Resolution

(a) If FERC, DOI, DEP, or any other Governmental Authority denies any of the Regulatory Applications submitted pursuant to this Agreement, except for any Regulatory Application filed pursuant to Section VI(d) or (e), or in approving or granting such Regulatory Applications alters or changes any term or provision thereof in a manner that materially prejudices any Party, including if a court of competent jurisdiction issues a decision or order relating to a Regulatory Application or other action required of the Parties pursuant to this Agreement that would materially prejudice any Party, the Parties shall take the following actions:

- (1) PPL Maine or PPL Great Works, as the licensee, or on behalf of BPHA as licensee, upon its own initiative or upon the request of any other Party, shall promptly call together and meet with the other Parties to evaluate, on an expedited basis, the effect of the Governmental Authority's action on the Parties' interests and to determine the appropriate response. The Parties shall assess together in good faith with due consideration for the

time frames specified by Applicable Laws and Regulations for seeking rehearing, administrative reconsideration, or further judicial review, as appropriate, whether to seek such action, or whether actions different from those set forth in this Agreement should be undertaken and, as appropriate, corresponding Regulatory Applications submitted to FERC, DEP, DOI, or any Governmental Authority, in order to achieve the purposes of this Agreement. The Parties shall file all necessary protective pleadings required by Applicable Laws and Regulations during this process of assessment, to protect the opportunity to seek rehearing or other administrative reconsideration of agency action or judicial review *provided, however*, that prior approval of the State of Maine's Attorney General may be required for the Maine Agencies to file any such protective pleadings and the prior approval of the Department of Justice may be required for DOI to file any such protective pleadings.

- (2) If the Parties do not mutually agree that one or more proposals different from those set forth in this Agreement should be submitted to FERC, DEP, DOI, or other Governmental Authorities, any Party that has been materially prejudiced by any such action by a Governmental Authority may seek rehearing or administrative reconsideration of the agency action, as appropriate (an "Administrative Appeal") as provided for by Applicable Laws and Regulations, and the remaining Parties shall join in such an Administrative Appeal to the extent that a Party is permitted by Applicable Laws and Regulations to do so, subject to the prior approval

and support provisions set forth below. If the agency's final decision on rehearing or reconsideration continues to materially prejudice a Party, such Party may seek judicial review of such agency action, and all other Parties shall join in the petition or complaint seeking such judicial review ("Judicial Appeal") to the extent that a Party is permitted by law to do so; *provided, however*, that prior approval of the State of Maine's Attorney General is required for the Maine Agencies to join in any Judicial Appeal and the prior approval of the Department of Justice is required for DOI to join in any Judicial Appeal. If a Party is not permitted by Applicable Laws and Regulations to join either an Administrative or Judicial Appeal filed by any other Party, it shall provide all reasonable support permitted by Applicable Laws and Regulations. If a Party is unable to participate in any Administrative or Judicial Appeal, such Party shall not oppose any relief sought by the Parties in a manner that is inconsistent with the terms and intent of this Agreement. If a Party (1) is materially prejudiced and does not pursue an Administrative or Judicial Appeal as provided herein after completion of the actions specified in subsection (a)(1) hereof, or (2) remains materially prejudiced by the Governmental Authority's action after the conclusion of the Administrative or Judicial Appeal, such Party may elect, upon 30-days prior written notice to all other Parties, to terminate this Agreement, which renders those provisions of this Agreement pertaining to Regulatory Applications that have not yet been granted void as to all Parties. Except as otherwise provided in Section

IV(g), all actions and activities covered by Regulatory Applications that have been granted pursuant to any provision of this Agreement prior to the date the Agreement is terminated according to this Section XII, including PPL Maine's activities referenced in Section VII(b), shall remain in effect and shall not be deemed nullified or affected in any way by such voiding, and PPL Maine and PPL Great Works shall continue to comply with the pertinent fish passage provisions of Attachment A, to the extent such fish passage provisions are not inconsistent with any order issued by FERC or any other Governmental Authority.

(b) If any dispute arises under this Agreement among any of the Parties that is not settled promptly in the ordinary course of business, the disputing Parties shall first seek to resolve such dispute by negotiating promptly in good faith. If the Parties are unable to resolve the dispute within 20 business days (or such period as the Parties shall otherwise agree) following the date one Party notifies the other(s) of the existence of such dispute (the "Dispute Notice Date"), then the disputing Parties shall employ the services of a mutually acceptable mediator; *provided, however,* that the Party or Parties seeking to mediate the dispute shall arrange to retain the mediator. The use of mediation will not be construed under the doctrine of laches, waiver or estoppel to affect adversely the rights of any Party, and, except as otherwise provided by law, any mediation discussions shall be deemed to be confidential settlement discussions and not admissible in any subsequent proceedings. If the disputing Parties are not able to resolve any dispute arising out of or relating to this Agreement within 90 days of the Dispute Notice Date, the disputing Parties may pursue any remedy available to the Parties under Applicable Laws and Regulations. Prior to the termination of the mediation process, a disputing Party shall be entitled

to take such legal action as is necessary to preserve or retain its ability to pursue any remedy lawfully available to it in the event that the dispute is not resolved through mediation.

XIII. Efforts of the Parties

(a) PPL Maine and PPL Great Works commit to providing public support for the goals of this Agreement, including the basic goal of restoration of the fish populations of the Penobscot River.

(b) Upon reasonable prior request by any Party, each of the Parties, to the extent permitted by Applicable Laws and Regulations, agrees to meet with potential sources of public and private funds for the purchase, removal, or alteration of the Designated Projects in order to express support for this Agreement and the restoration of the fish populations and other ecological values of the Penobscot River.

(c) PPL Generation commits to provide PPL Maine and PPL Great Works, from appropriate levels of the PPL corporate organization, reasonable support necessary for PPL Maine and PPL Great Works to fulfill their obligations under subsections (a) and (b).

(d) DOI, the Maine Agencies, and PIN commit to continue providing appropriate technical assistance and support in furtherance of the objectives of this Agreement.

(e) If a third party files an administrative or judicial challenge to a regulatory approval or authorization received by any Party in accordance with this Agreement (“Third Party Challenge”), the Parties shall participate in or intervene in the Third Party Challenge, to the extent the Parties are permitted by Applicable Laws and Regulations to do so, to defend the validity and terms of the regulatory action at issue to the extent that the regulatory action is in accordance with this Agreement or otherwise acceptable to the Parties under Section XII; *provided, however*, that prior approval of the State of Maine’s Attorney General is required for

the Maine Agencies to join in any judicial Third Party Challenge and prior approval of the Department of Justice is required for DOI to join in the same. If a Party is materially prejudiced by a term or condition which results from any Third Party Challenge, such Party may appeal such term or condition in accordance with Section XII while defending terms or conditions resulting from the Third Party Challenge that are consistent with this Agreement or otherwise acceptable to the Parties under Section XII.

(f) In the manner and, at a minimum, to the extent required under Applicable Laws and Regulations, the Parties shall continue to coordinate with each other and continue to work with municipalities, businesses, individuals, and other potentially affected entities to further assess and maximize the benefits of and, to the extent appropriate, minimize or mitigate for potential adverse effects to property or other legal rights or interests of these entities due to changes to hydro power projects pursuant to this Agreement.

XIV. Miscellaneous.

(a) Incorporation of Attachments/Entire Agreement

Attachment A (fish passage measures) and Attachment B (contingent mitigation fund) are hereby incorporated by reference into this Agreement as if fully restated herein. This Agreement, including its Attachments, constitutes the entire agreement between the Parties and PPL Generation with respect to its subject matter, and supercedes all prior and contemporaneous representations, understandings, and agreements with respect to the subject matter of this Agreement. Except as expressly provided in connection with documents incorporated by reference, no amendment to this Agreement shall be valid unless in writing and signed by all Parties and PPL Generation.

(b) **Exhibits Not Incorporated**

Exhibit 1 (Option Agreement) and Exhibit 2 (PIN Agreement) (collectively, the “Exhibits”) are attached to this Agreement for informational purposes only and are not hereby incorporated by reference.

(c) **Binding Effect**

This Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties and PPL Generation hereto.

(d) **Governing Law**

Except for provisions of this Agreement which are governed exclusively by federal law, including, but not limited to, the FPA, this Agreement shall be construed and governed in accordance with the laws of the State of Maine, without regard to Maine’s conflict of law principles.

(e) **Multiple Counterparts**

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

(f) **Authority**

By executing this Agreement, each Party and PPL Generation makes the following representations, warranties and covenants:

- (1) **Good Standing.** With regard to the non-governmental Parties and PPL Generation, such entity is duly organized, validly existing and in good standing under the laws of the state or province in which it is organized, formed, or incorporated, as applicable; that it is qualified to do business in the state or states in which the entity is located; and that it has the

corporate power and authority to own its properties and to carry on its business as now being conducted.

(2) **Authority.** Such entity has the right, power and authority to enter into this Agreement, to become a signatory hereto and to perform its obligations hereunder; and that this Agreement is a legal, valid and binding obligation of such entity, enforceable against such entity in accordance with its terms.

(3) **No Conflict.** The execution, delivery and performance of this Agreement does not violate or conflict with the organizational or formation documents, or bylaws or operating agreement, of such entity, or any judgment, license, permit, order, material agreement or instrument applicable to or binding upon such entity or any of its assets.

(g) **No Waiver**

No failure by a Party or PPL Generation, at any time, to enforce any right of remedy available to it under this Agreement shall be construed to be a waiver of such entity's right to enforce each and every provision of this Agreement in the future. Any waiver of any rights under this Agreement must be provided in writing.

(h) **No Third Party Beneficiaries**

Nothing in this Agreement is intended to confer on any person other than the Parties and PPL Generation and, where permitted, their assigns, any rights or remedies under or by reason of this Agreement.

(i) **Non-Appropriation of Funds**

Nothing in this Agreement shall be construed to require the State of Maine or any of its agencies to expend any monies beyond those appropriated and allocated for the purpose for which they are to be expended, as solely determined by the commissioner or other department head of the agency involved. The Parties and PPL Generation further acknowledge that nothing in this Agreement shall be construed as obligating any federal agency to expend in any fiscal year any sum in excess of appropriations made by Congress or administratively allocated for the purpose of this Agreement for the fiscal year or to involve any federal agency in any contract or obligations for the future expenditure of money in excess of such appropriations or allocations. DOI, through the execution of this Agreement, is not obligated to seek any specific appropriations and may oppose efforts to seek funding from Congress for this project, if such funding would involve an offset to DOI's existing budget or the cutback and/or curtailment of current programs.

(j) **Compliance with Applicable Law**

The performance by the Parties and PPL Generation of this Agreement will be subject to all Applicable Laws and Regulations.

(k) **No Precedent**

This Agreement establishes no precedents with regard to any issue addressed herein, or with regard to PPL Generation or any Party's participation in future relicensing or other proceedings, and that neither PPL Generation nor any of the Parties to this Agreement will cite it as establishing any principles except with respect to the matters to which the Parties and PPL Generation have herein agreed.

Signed:

American Rivers, Inc.

By: Rebecca R. Wodden

Print: Rebecca R. Wodden

Its: RW

Date: 6/8/04

Atlantic Salmon Federation

By: _____

Print: _____

Its: _____

Date: _____

Bureau of Indian Affairs

By: _____

Print: _____

Its: _____

Date: _____

Fish and Wildlife Service

By: _____

Print: _____

Its: _____

Date: _____

Signed:

American Rivers, Inc.

By: _____

Print: _____

Its: _____

Date: _____

Atlantic Salmon Federation

By: Bill Ayler

Print: Bill Ayler

Its: President

Date: June 14/04

Bureau of Indian Affairs

By: _____

Print: _____

Its: _____

Date: _____

Fish and Wildlife Service

By: _____

Print: _____

Its: _____

Date: _____

Signed:

American Rivers, Inc.

By: _____

Print: _____

Its: _____

Date: _____

Atlantic Salmon Federation

By: _____

Print: _____

Its: _____

Date: _____

Bureau of Indian Affairs

By: Aurene M. Martin

Print: AURENE M. MARTIN

Its: Principal Deputy Assistant Secretary-Indian Affairs

Date: June 15, 2004

Fish and Wildlife Service

By: _____

Print: _____

Its: _____

Date: _____

Signed:

American Rivers, Inc.

By: _____

Print: _____

Its: _____

Date: _____

Atlantic Salmon Federation

By: _____

Print: _____

Its: _____

Date: _____

Bureau of Indian Affairs

By: _____

Print: _____

Its: _____

Date: _____

Fish and Wildlife Service

By: Craig Manson

Print: Craig Manson

Its: Assistant Secretary

Date: 6-18-04

National Park Service

By: *Craig Manson*

Print: **Craig Manson**

Its: Assistant Secretary

Date: 6-18-04

Natural Resources Council of Maine

By: _____

Print: _____

Its: _____

Date: _____

Maine Atlantic Salmon Commission

By: _____

Print: _____

Its: _____

Date: _____

Maine Audubon Society

By: _____

Print: _____

Its: _____

Date: _____

National Park Service

By: _____

Print: _____

Its: _____

Date: _____

Natural Resources Council of Maine

By: Everett B. Carson

Print: Everett B. Carson

Its: Executive Director

Date: June 8, 2004

Maine Atlantic Salmon Commission

By: _____

Print: _____

Its: _____

Date: _____

Maine Audubon Society

By: _____

Print: _____

Its: _____

Date: _____

National Park Service

By: _____

Print: _____

Its: _____

Date: _____

Natural Resources Council of Maine

By: _____

Print: _____

Its: _____

Date: _____

Maine Atlantic Salmon Commission

By: Patrick C. Kelihen

Print: Patrick C. Kelihen

Its: Executive Director

Date: 6/14/2004

Maine Audubon Society

By: _____

Print: _____

Its: _____

Date: _____

National Park Service

By: _____

Print: _____

Its: _____

Date: _____

Natural Resources Council of Maine

By: _____

Print: _____

Its: _____

Date: _____

Maine Atlantic Salmon Commission

By: _____

Print: _____

Its: _____

Date: _____

Maine Audubon Society

By: Kevin P. Carter

Print: Kevin P. Carter

Its: Executive Director

Date: 6.7.04

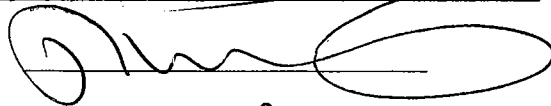
Maine Department of Inland Fisheries and Wildlife

By:

Print:

Its:

Date:



Roland D. Martin

Commissioner

June 10, 2004

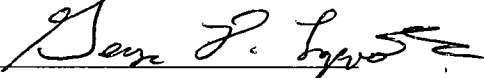
Maine Department of Marine Resources

By:

Print:

Its:

Date:



George D. Lapointe

Commissioner

14 June 2004

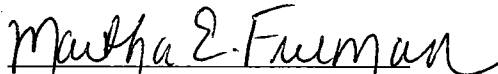
Maine State Planning Office

By:

Print:

Its:

Date:



Martha E. Freeman

Director

June 14, 2004

Penobscot Indian Nation

By:

Print:

Its:

Date:

Maine Department of Inland Fisheries and Wildlife

By: _____

Print: _____

Its: _____

Date: _____

Maine Department of Marine Resources

By: _____

Print: _____

Its: _____

Date: _____

Maine State Planning Office

By: _____

Print: _____

Its: _____

Date: _____

Penobscot Indian Nation

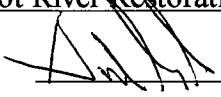
By: Barry Dana

Print: Barry Dana

Its: Chief

Date: 6/15/04

Penobscot River Restoration Trust

By: 

Print: ANDREW GOODE

Its: Resident

Date: 6/22/04

PPL Generation, LLC

By: _____

Print: _____

Its: _____

Date: _____

PPL Great Works, LLC

By: _____

Print: _____

Its: _____

Date: _____

PPL Maine, LLC

By: _____

Print: _____

Its: _____

Date: _____

Penobscot River Restoration Trust

By: _____

Print: _____

Its: _____

Date: _____

PPL Generation, LLC

By: James H. Miller

Print: James H. Miller

Its: President

Date: 6/8/04

PPL Great Works, LLC

By: James H. Miller

Print: James H. Miller

Its: President

Date: 6/8/04

PPL Maine, LLC


By: James H. Miller

Print: James H. Miller

Its: President

Date: 6/8/04

Trout Unlimited

By: 

Print: Charles Gauvin

Its: President / CEO

Date: June 13, 2004

ATTACHMENT A
TO LOWER PENOBSCOT RIVER CONCEPTUAL AGREEMENT

This Attachment, in combination with the Agreement, constitutes the agreement of the Parties with respect to fish passage issues at the Veazie, Great Works, Milford, Orono, Stillwater, Howland, West Enfield, Medway and Ellsworth Projects. This Attachment addresses fish passage actions to be undertaken after the Effective Date of the Agreement, as well as those to be undertaken upon purchase of Veazie, Great Works, and Howland (“Designated Projects”), as contemplated in the Agreement, and those to be undertaken should the Designated Projects not be purchased.

I. PROJECT-SPECIFIC AGREEMENTS

a. Project: Veazie

1) Upon the Effective Date of the Agreement: The licensee will continue to operate the project without modifications in existing generating facilities or fish passage facilities, including full responsibility for their operation and maintenance. DOI will amend its prescription to delay the requirement to construct fish passage, consistent with subsection a(3), below.

2) Upon Acquisition of Designated Projects by the Trust: The license will be transferred to the Trust and the dam removed in compliance with required federal and other governmental approvals.

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project. The licensee will implement the specific requirements of the current DOI fishway prescription (May 20, 1997- attached hereto and incorporated herein by reference) as follows, to the extent not already implemented. In the event that the Option is not exercised or is terminated prior to the expiration of the Option period, no later than six months following the five-year anniversary date of the Effective Date of the Agreement the licensee will file facility design drawings with FERC (and as necessary with Maine DEP), based upon the current DOI fishway prescription. The licensee will (consistent with what DOI will prescribe pursuant to subsection a(1)) have the fishways fully operational within eighteen months of FERC approval of the design drawings. In the event that subsequent to the exercise of the Option the Designated Projects are not acquired, no later than six months following the completion of the dispute resolution process pursuant to Section XII of the Agreement and a final determination by a court or administrative agency that prevents acquisition of the Designated Projects, the licensee will file facility design drawings with FERC (and as necessary with Maine DEP) based upon the current DOI fishway prescription. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe pursuant to subsection a(1)) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. Changes to the constructed fish passage facilities shall be governed by the provisions in Section II.c of this Attachment.

b. Project: Great Works

- 1) Upon the Effective Date of the Agreement:** The licensee will continue to operate the project without modifications in existing generating facilities or fish passage facilities, including full responsibility for their operation and maintenance.
- 2) Upon Acquisition of the Designated Projects by the Trust:** The license is to be transferred to the Trust and the dam removed in compliance with all required federal and other governmental approvals.
- 3) If Designated Projects are not acquired in accordance with the Agreement:** The licensee will continue to operate the project, and will proceed with its relicensing application. This Agreement does not restrict the Parties' actions in that proceeding.

c. Project: Milford

- 1) Upon the Effective Date of the Agreement:** The licensee will continue to operate the project without modifications in existing generating facilities or fish passage facilities, except that the licensee will provide for upstream passage of eels by promptly filing at FERC an amendment to its license to authorize installation of a new upstream eel fishway. DOI will simultaneously amend its prescription to require said eel fishway and to modify/delay all other fish passage requirements until after acquisition of the Designated Projects, when the requirements of subsection c(2), below, come into effect. Upon receiving approval to install the upstream fishway for eels, the licensee will assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by the resource agencies and PIN, the licensee shall complete installation and initial testing, and have the fishway fully operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the Effective Date of the Agreement.
- 2) Upon Acquisition of Designated Projects by the Trust:** The licensee will retain the license and continue to operate the project. The licensee will install a new state-of-the-art fish lift (below) and downstream passage as prescribed in the attached May 20, 1997 Prescription (attached hereto and incorporated by reference), to the extent not already implemented, and will discontinue use of the existing Denil fishway.

State of the Art Fish Lift

In general, this facility will consist of:

- i) A shore-based fish lift with a single entrance immediately downstream from the powerhouse; an exit channel to include fish counting station and facilities for sorting, trapping-and-trucking (similar to the Cataract Project, FERC #2528, on the Saco River). The exit channel would pass through the basement of powerhouse. This fish lift would require an attraction flow of 210 cfs, an operation control center computer module (similar to that at the Cataract Project), and a separate underground viewing facility for public use (similar to what exists

at the fishway at the Brunswick Project, FERC #2284, on the Androscoggin River.)

ii) A rubber dam at the spillway crest, installed on the 390-ft. section of spillway between the mid-river ledge outcrop and the east abutment. This rubber dam will enhance passage at the single fish lift and avoid the need for a west shore fishway.

iii) Alteration of the log sluice and removal of the supporting ledge outcrop to enhance attraction of fish to fish lift entrance. Removal of the ledge outcrop will be completed by the licensee no later than 10 years from the effective date of the Agreement.

3) If the Designated Projects are not acquired in accordance with the Agreement:

The licensee will continue to operate the project. The licensee will implement, by filing for license amendments in conjunction with appropriate simultaneous DOI filings, the specific requirements of the current DOI fishway prescription (May 20, 1997- attached hereto and incorporated herein by reference) as follows, to the extent not already implemented. In the event that the Option is not exercised or is terminated prior to the expiration of the Option period, no later than six months following the five-year anniversary date of the effective date of the Agreement, the licensee will file facility design drawings with FERC (and as necessary with Maine DEP), based upon the current DOI fishway prescription. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. In the event that subsequent to the exercise of the Option the Designated Projects are not acquired, no later than six months following the completion of the dispute resolution process pursuant to Section XII of the Agreement and a final determination by a court or administrative agency that prevents acquisition of the Designated Projects, the licensee will file facility design drawings with FERC (and as necessary with Maine DEP) based upon the current DOI fishway prescription. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. Changes to the constructed fish passage facilities shall be governed by the provisions in Section II.c of this Attachment.

d. Project: Orono

1) Upon the Effective Date of the Agreement: The licensee will file for new 40-yr license to: redevelop the existing 2.3 MW powerhouse; operate the project with a 200 cfs minimum flow in the bypass reach below the dam, subject to the provisions in the Agreement regarding the contingent mitigation fund; install an upstream fishway for eels; and install permanent downstream passage. No upstream fish passage is required at this time, other than the new fishway for eels. DOI will prescribe, and the licensee will install, downstream passage as previously prescribed on May 20, 1997 (attached hereto and incorporated herein by reference) by DOI as part of the Basin Mills licensing proceeding, adding 2-week shutdowns at night for downstream eel migration if shown to be necessary by effectiveness studies, but in no case earlier than the expiration of the safe harbor period delimited in section II(c) below. Upon receiving approval to install the

upstream fishway for eels, the licensee will assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by the resource agencies and PIN, the licensee shall complete installation and initial testing, and have the fishway fully operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the Effective Date of the Agreement.

2) Upon Acquisition of Designated Projects by the Trust: The licensee will retain the license, and as soon after Closing as it is reasonably able to do so, will file for an amendment to authorize installation of a fish trapping facility at the Orono project spillway, and will continue operation of the fishway for eels and downstream passage as prescribed. DOI will file appropriate simultaneous filings. The licensee will consult with, and receive approval from the agencies and PIN prior to filing the design plans for the trap with FERC. However, PPL and the agencies and PIN agree that the design of the trap would be similar to that in use on the Effective Date of the Agreement at PPL Maine's Ellsworth project on the Union River. The purpose of the trap would be to gain access to any fish that are attracted to spill or minimum flow releases at the dam. The licensee will have no obligation to install additional upstream fish passage facilities for anadromous species on the Stillwater Branch during the term of the licenses for the Orono and Stillwater projects. The licensee will also, as soon after closing as it is reasonably able to do so, and subject to the conditions in Section VI of the Agreement, file for an amendment to authorize a second powerhouse (5.3 MW) at Orono dam.

The licensee will be responsible for operating and maintaining the trap, and for "short-distance" transfer of trapped fish (i.e., to the headpond above the Stillwater Dam, the tailwater below Orono Dam, or the main stem Penobscot River at the confluence with the Stillwater Branch). The licensee will be responsible for monitoring the fish captured at the trap, and will notify the agencies and PIN of the species and numbers of fish trapped each year, in connection with the annual meeting described in Section II.a of this Attachment. The agencies and PIN will be responsible for "long-distance" transfer of trapped fish to upstream spawning habitat or to a hatchery. The licensee will provide the agencies and PIN with access to the trap, and will work cooperatively with the agencies and PIN to achieve efficient handling procedures, which might include the sharing of trap and transport equipment.

If information collected by the licensee demonstrates that more fish are arriving at the Orono Project than might be accommodated by the fish trapping measures in place, the licensee will convene a special meeting with the Restoration Interests to discuss the scope of the problem, if any, and discuss reasonable solutions.

To the extent that the Parties are in general agreement that resolution requires minor operational adjustments, the licensee agrees to implement those measures or modifications in cooperation with the Restoration Interests, subject to any necessary regulatory approvals.

To the extent that the Parties are in general agreement that resolution of identified problems can only be addressed by construction of new or additional facilities or by major modifications in operations, the licensee agrees to cooperate and petition the FERC

for the appropriate license amendments, provided that the licensee receives the funding for such modifications.

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project with a single 2.3 MW powerhouse, and will complete construction, if necessary, and otherwise operate the upstream eel fishway and prescribed downstream passage pursuant to subsection d(1). The licensee will implement, by filing for license amendments in conjunction with appropriate simultaneous DOI filings, the current (May 20, 1997 -attached hereto and incorporated herein by reference) DOI prescription for upstream fish passage as follows, to the extent not already implemented. In the event that the Option is not exercised or is terminated prior to the expiration of the Option period, no later than twelve months following the five-year anniversary date of the Effective Date of the Agreement the licensee will file for approval by FERC drawings of permanent upstream fish passage. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. In the event that subsequent to the exercise of the Option the Designated Projects are not acquired, no later than twelve months following the completion of the dispute resolution process pursuant to Section XII of the Agreement and a final determination by a court or administrative agency that prevents acquisition of the Designated Projects, the licensee will file for approval by FERC drawings of permanent upstream fish passage. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. Changes to the constructed fish passage facilities shall be governed by the provisions in Section II.c of this Attachment.

e. Project: Stillwater

1) Upon the Effective Date of the Agreement: The licensee will file for an amendment to: authorize increasing the headpond by 1 foot; change the bypass minimum flow from 195 to 70 cfs, subject to the provisions in the Agreement regarding the contingent mitigation fund; and install upstream fish passage for eels. DOI will make appropriate simultaneous supportive filings with FERC, including altering its fishway prescription to require upstream passage for eels only, and downstream passage as described herein and upon acquisition, as described in subsection e(2), below, adding 2-week shutdowns at night for downstream eel migration if shown to be necessary by effectiveness studies, but in no case earlier than the expiration of the safe harbor period delimited in section II(c) below. The licensee will continue to operate the existing downstream passage facilities, and will reduce trashrack spacing to 1-inch no later than one year from the Effective Date of the Agreement. Upon receiving approval to install the upstream fishway for eels, the licensee will assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by the resource agencies and PIN, the licensee shall complete installation and initial testing, and have the fishway fully operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the Effective Date of the Agreement.

2) Upon Acquisition of Designated Projects by the Trust: The licensee will retain the license, and as soon after closing as it is reasonably able to do so, will file for an amendment to authorize installation of a second powerhouse (2.7 MW) at the spillway, subject to the conditions in Section VI of the Agreement. The licensee will continue to operate the fishway for eels, but there will be no additional requirement for upstream fish passage facilities. The licensee will implement, to the extent not already implemented, the downstream fish passage measures contained in the current DOI Prescription (May 20, 1997 -- attached hereto and incorporated by reference).

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project with the existing powerhouse, and will complete construction, if necessary, and otherwise operate the upstream eel fishway pursuant to subsection e(1). Except as noted below, the licensee will implement, by filing for license amendments in conjunction with appropriate simultaneous DOI filings, the specific requirements of the current DOI fishway prescription (May 20, 1997- attached hereto and incorporated herein by reference), as follows, to the extent not already implemented. In the event that the Option is not exercised or is terminated prior to the expiration of the Option period, no later than twelve months following the five-year anniversary date of the Effective Date of the Agreement, the licensee will file facility design drawings with FERC (and as necessary with Maine DEP) based upon the current DOI fishway prescription. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. In the event that subsequent to the exercise of the Option the Designated Projects are not acquired, no later than twelve months following the completion of the dispute resolution process pursuant to Section XII of the Agreement and a final determination by a court or administrative agency that prevents acquisition of the Designated Projects, the licensee will file facility design drawings with FERC (and as necessary with Maine DEP) based upon the current DOI fishway prescription. In said filing, the licensee will propose to FERC (consistent with what DOI will prescribe) to have the fishways fully operational within eighteen months of FERC approval of the design drawings. Changes to the constructed fish passage facilities shall be governed by the provisions in Section II(c) of this Attachment.

DOI will consider deferral of installation of an upstream fishway for anadromous fish at the spillway of the Stillwater Project if studies financed and conducted by the licensee demonstrate that safe, timely, and effective fish passage of target species is occurring, as described below, with only the powerhouse fishway. (The licensee would continue to operate a separate upstream fishway for American eel at the Stillwater Project.) Before conducting the studies, the licensee will consult with, and receive approval by DOI, other resource agencies, and PIN on the methods and schedule for conducting the assessment of the need for a spillway fishway. The licensee subsequently will file its study plans with FERC for approval. If DOI, after consultation with other resource agencies and PIN, concludes based on the results of the studies that target upstream passage efficiencies can be achieved with a single fishway at the powerhouse, it will exercise its reserved authority, subject to its regulatory process, to allow the licensee to satisfy its upstream fish passage obligation with said single fishway.

Criteria for studies on the need for a spillway fishway at the Stillwater Project:

Study goals: Document upstream passage at the Stillwater Project using a single fishway installed at the powerhouse.

Target species: Atlantic salmon; American shad; river herring (alewife, blueback herring).

Study initiation and duration: Studies to be initiated within one year of the expiration or termination of the Option (i.e., the Designated Projects are not acquired). Studies will be carried out for three years for each species (overall duration will depend upon availability of species).

Target efficiency: 95% upstream passage efficiency (as measured by passage at Stillwater of marked fish of each target species, released at or above the Orono dam).

f. Project: Howland

- 1) Upon the Effective Date of the Agreement:** The licensee will continue to operate the project without modifications in existing generating facilities or fish passage facilities, including full responsibility for their operation and maintenance.
- 2) Upon Acquisition of Designated Projects by the Trust:** The license will be transferred to the Trust and the project decommissioned; either the spillway will remain and fish bypass system constructed and operated in accordance with Section XI of the Agreement, or the dam will be removed, in accordance with Section XI of the Agreement.
- 3) If Designated Projects are not acquired in accordance with the Agreement:** The licensee will continue to operate the project, and will proceed with its relicensing application. This agreement does not restrict the Parties' actions in that proceeding.

g. Project: West Enfield

- 1) Upon the Effective Date of the Agreement:** The licensee will file for a license amendment to authorize increasing the West Enfield headpond by 1 foot, subject to the provisions in the Agreement regarding the contingent mitigation fund. The licensee will provide for upstream passage of eels upon execution of the Agreement, by filing to amend its license to authorize installation of an eel fishway. Upon receiving approval to install the upstream fishway for eels, the licensee will assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by the resource agencies and PIN, the licensee shall complete installation and initial testing, and have the fishway fully operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the Effective Date of the Agreement.
- 2) Upon Acquisition of Designated Projects by the Trust:** The licensee will continue to operate the project with modified headpond, and with existing and new fish passage (for eels).

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project with modified headpond, and with existing and new fish passage (for eels).

4) Current Fishway Prescription: There was no formal fishway prescription provided by DOI as part of the West Enfield licensing proceeding; however, existing upstream and downstream fish passage facilities were installed and are being operated according to DOI criteria and specifications.

h. Project: Medway

1) Upon the Effective Date of the Agreement: The licensee will file for a license amendment to authorize increasing the Medway headpond by 1 foot, subject to the provisions in the Agreement regarding the contingent mitigation fund. The licensee will continue to operate the existing fish passage for eels.

2) Upon Acquisition of Designated Projects by the Trust: The licensee will continue to operate the project with modified headpond, and as soon after closing as it is reasonably able to do so, will install an additional 0.7 MW turbine, subject to the conditions in Section VI of the Agreement, and will continue to operate the existing fish passage for eels.

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project with modified headpond, and with existing fish passage for eels.

i. Project: Ellsworth

1) Upon the Effective Date of the Agreement: The licensee will continue to operate the project without modifications in existing generating facilities or license conditions.

2) Upon Acquisition of Designated Projects by the Trust: As soon after closing as it is reasonably able to do so, the licensee will file for a license amendment to install a new 0.7 MW turbine at Graham Lake dam, subject to the conditions in Section VI of the Agreement. If not already in place, the licensee will file a license amendment application proposing to install downstream fish passage at Graham Lake dam, along with the new turbine, and will continue to operate existing upstream and downstream fish passage at Ellsworth dam pursuant to the Union River Comprehensive Fishery Management Plan in collaboration with Union River Stakeholder Group, which includes DOI and other agencies.

3) If Designated Projects are not acquired in accordance with the Agreement: The licensee will continue to operate the project with existing generating facilities and license conditions.

II. AGREEMENTS NOT SPECIFIC TO ONE PROJECT

a. Implementation of fish passage measures and fishery management activities

The licensee of each of the Projects subject to the Agreement will develop and submit for approval by DOI and any other governmental agency with approval authority all fishway design plans and installation schedules as described above in paragraphs that are specific to individual projects. The licensee will be fully responsible for operations and maintenance activities associated with fish passage facilities at its projects. The FWS, the Maine Departments of Inland Fisheries and Wildlife and Marine Resources and the Maine Atlantic Salmon Commission ("resource agencies") and PIN will be fully responsible for carrying out any routine fishery management activities, including but not limited to counting, sorting, trapping and trucking (except as provided specifically for the Orono project, as described above) that they deem appropriate. The licensee will provide the resource agencies and PIN with access to the projects and to the passage facilities for purposes of carrying out routine fishery management activities. The licensee will be responsible for conducting all fishway effectiveness studies in accordance with approved plans developed in consultation with the resource agencies and PIN.

Operations and maintenance activities associated with fish passage facilities include, but are not limited to the following: repair and replacement of baffles; operation and maintenance of gates and associated equipment (drive motors, gate stems and guides); maintenance in constant working order of all equipment providing for attraction and conveyance flows (gravity pipes, debris racks); and daily evaluations of all facility components to ensure proper operation. In addition, the licensee will develop a manual of standard operating procedures for each of the fishways at its projects, following consultation with the resource agencies and PIN. Each manual will describe in detail the operations and maintenance activities associated with fish passage facilities to be carried out each year, and will identify provisions for access to the projects by resource agencies and PIN. The licensee, the resource agencies and PIN agree to exchange and maintain current information on key personnel contacts in case of emergencies. The licensee will convene a meeting each year with the resource agencies and PIN to discuss fish passage operations, and to share information on fish restoration activities on the Penobscot River.

b. Flow reallocation

Allocation of flows between the main stem of the Penobscot River and its Stillwater Branch are established in a 1911 court decree, and in the current FERC license and 401 Water Quality Certification for the Milford Project. Under the court decree, the total Penobscot River flow above Milford (as measured at the Sunkhaze gage) is incrementally allocated between the main stem and Stillwater Branch. Currently, up to 30 percent of the total river flow may be routed into the Stillwater Branch, following a specific schedule (rule curve) in the court decree.

The current FERC license and Maine DEP 401 Water Quality Certification for the Milford Project require a release of 3,800 cfs or inflow, whichever is less, with the

following distribution: 3,268 cfs in the main stem from the Milford powerhouse, and 532 cfs in the Stillwater, measured as 60 cfs from Gilman Falls dam, and 472 cfs from the west channel breachway at Gilman Falls. The distribution of flows between the main stem and Stillwater Branch required in the FERC license and DEP 401 is consistent with the allocation in the court decree.

If the energy enhancements at the Orono or Stillwater projects contemplated in Section VI of the CA are built by PPL or a third party, the Parties agree that PPL will reallocate the flows between the main stem Penobscot and Stillwater Branch, by modifying the current Milford license and taking any action necessary to modify the 1911 court decree, as follows: (based on total river flows as measured at the Sunkhaze gage):

- River flows greater than 5446 cfs: 60 % main stem; 40 % Stillwater Branch up to the limit of project operational control of flows (approximately 15,000 cfs), at which point flows will revert to the historic allocation (i.e., approximately 70% main stem, 30% Stillwater Branch).
- River flows between 5446 and 3800 cfs, May 1 – October 31: no change from existing court decree allocation.
- River flows between 5446 and 3800 cfs, November 1 – April 30: reallocate up to 40% total river flow into the Stillwater Branch, while complying with minimum flows in current FERC license and Maine DEP 401 Certification.
- River flows below 3800 cfs: comply with minimum flows in current FERC license and Maine DEP 401 Certification.

All changes in allocation between the main stem and Stillwater Branch will be made in accordance with ramping procedures agreed to by PPL, the resource agencies and PIN.

c. Safe Harbor

If the Designated Projects are not acquired by the Trust pursuant to the Agreement, the Restoration Interests will not request that FERC require the licensee to make any "major changes" in the fish passage facilities constructed by the licensee at Veazie, Milford, Orono, and Stillwater pursuant to the provisions contained in Sections I.a.3), I.c.3), I.d.3), and I.e.3) of this Attachment for a period of 10 years after installation and "certification" of the facilities. Certification will consist of affirmation by DOI that the licensee has designed and installed the facilities as prescribed, completed a year of testing and fine tuning, and that the facilities are ready for routine operations.

If the Designated Projects are acquired by the Trust, the Restoration Interests will not request that FERC require the licensee to make any "major changes" in the fish passage facilities constructed by the licensee at the Milford, Stillwater, and Orono Projects for a period of 10 years after installation and "certification" of the facilities. Certification will consist of affirmation by DOI that the licensee has designed and installed the facilities as prescribed, completed a year of testing and fine tuning, and that the facilities are ready for routine operations.

For purposes of this provision, “major changes” shall mean changes in facilities or operations requiring an expenditure by the licensee(s) of more than an aggregate of \$50,000 in any one calendar year, for modifications at all the projects covered by the safe harbor. Routine operations and maintenance expenditures shall not be counted against this \$50,000, which will be measured in 2004 dollars. Turbine shutdowns for downstream passage of eels will not be required, if at all, until after the expiration of the 10-yr. safe harbor.

**MAY 20, 1997 DOI FISHWAY PRESCRIPTIONS
FOR VEAZIE, MILFORD, ORONO, AND STILLWATER**

Veazie

Upstream Fishways

Veazie Plant A

Prescription #1 - Modify the existing vertical slot fishway pools and baffles to enhance the passage of anadromous fish and minimize injury to American shad. Modifications shall include rounding of exposed edges of the baffle slots and adding aluminum baffle slot plates as designated by the U.S. Fish and Wildlife Service.

Prescription #2 - Add a new gated spillway entrance on the east side of the fishway and a downward opening gate at the existing fishway entrance.

Prescription #3 - Provide for up to 100 cfs of attraction flow at each of the Plant A fishway entrances (200 cfs total) as soon as possible.

Prescription #4 - Construct fish counting facilities at the upstream end of the Plant A fishway.

Prescription #5 - The Plant A fishway shall be operational at river flows up to 40,000 cfs as measured at the Eddington gaging station.

Prescription #6 - To provide for effective (safe, timely, convenient) upstream passage of juvenile American eels at the Veazie development, construct a separate eel fishway at the existing Plant A upstream fish passage facility, or other suitable location.

Veazie Plant B

Stage 1

Prescription #1 - Construct either a vertical slot fishway (with pools 10.5 feet W x 11 feet L x 9 inch drop per pool), or a fish lift (with 1,650 gallon ultimate hopper capacity) at the powerhouse, with a fish collection gallery, trapping and trucking facilities, and a fish counting station in the exit channel - if Plant C is not built according to the schedule in any license the Commission may issue for the Basin Mills Project.

Stage 2

Prescription #1 - If not already in existence, construct a fishway, either vertical slot or fish lift, at the Plant B powerhouse in accordance with U.S. Fish and Wildlife Service approved functional design plans prepared during Stage 1, if

effectiveness studies of the fishway at Plant C provide evidence that a fishway at Plant B is needed.

Veazie Plant C

Prescription #1 - Construct an upstream fishway at the powerhouse of either the vertical slot (with pools 10.5 feet W x 11 feet L x 9 inch drop per pool) or fish lift (with 1,650 gallon ultimate hopper capacity) design, with a fish collection gallery, trapping and trucking facilities, and a fish counting station in the exit channel.

Prescription #2 - The powerhouse fish collection gallery is to have 3 or 4 gated entrances as determined by hydraulic model studies of the Plant C tailrace, which are to be designed and undertaken by the Licensee in consultation and cooperation with the U.S. Fish and Wildlife Service, other fishery agencies, PIN, and interested parties. The entrances shall discharge up to 280 cfs total attraction flow.

Prescription #3 - Plant C fish passage facilities shall be operational at river flows up to 40,000 cfs as measured at the Eddington gaging station.

Prescription #4 - Plant C shall be operated as the first plant on line and last off line during the upstream migration period at the Veazie development.

Prescription #5 - As soon as is possible after completion of the stage one fish passage facilities at Plant C, the licensee shall conduct (at its expense) an evaluation of the effectiveness of the Plant C fishway for passing fish upstream at the Veazie development. The evaluation shall be designed and conducted in consultation and cooperation with the U.S. Fish and Wildlife Service, other fishery agencies, PIN, and interested parties to assist the Department in determining any need to modify the existing fishways and/or to construct new upstream fishways at Plant B if none exist.

Downstream Fishways

Veazie Plant A

Prescription #1 - Install trashracks with a 1-inch clear opening at the Plant A powerhouse and operate the units to guide downstream migrants to the bypass at Plant B.

Veazie Plant B

Stage 1

Prescription #1 - Install trashracks with 1-inch clear opening, and provide both a gated surface and bottom bypass at the Plant B powerhouse. Provide a bypass flow of up to 200 cfs during the downstream migration period.

Stage 2

Prescription #1 - Install angled trashracks with 1-inch clear opening at the Plant B intake to guide downstream migrants to the bypass, if studies provide evidence that the existing trashracks are not effective for guiding fish to the bypass.

Veazie Plant C

Prescription #1 - Install either 1-inch trashracks, angled bar racks, or louvers at the Plant C powerhouse turbine intake and appropriate gated surface and bottom bypasses discharging up to 240 cfs during the downstream migration period. The type, location and size of the gated bypasses and fish screening facilities will be determined by hydraulic model studies of the powerhouse forebay. These studies are to be undertaken by the Licensee in consultation and cooperation with the U.S. Fish and Wildlife Service, other fishery agencies, PIN, and interested parties. If so indicated by the results of initial effectiveness studies at Veazie Plant C, evaluate restricted generation at night over a two-week period to enhance downstream passage of adult American eels.

Milford

Upstream Fishways

Prescription #1 - Modify the existing Denil fishway adjacent to the powerhouse at the Milford Project as described in BHE's filing, dated January 12, 1990 (Response to Commission's AIR, Items 10 through 13), with the following changes:

- a) add a spillway entrance near the existing log sluice; and
- b) install additional timber baffles in the upstream end of the fishway to facilitate operation at high headpond levels.

Prescription #2 - Install a new fishway on the west end of the spillway, adjacent to the shoreline. Fishway type is to be a conventional Denil (4 feet W x 1-on-8 slope), vertical slot fishway (pools 8 feet W x 10 feet L x 9 inch drop per pool), or a fish lift (with 800 gallon ultimate hopper capacity).

Prescription #3 - All upstream fishways at the Milford Project should be operational for river flows up to 40,000 cfs as measured at the USGS gaging station at Eddington.

Prescription #4 - Provide attraction flows for the upstream fishways as follows:

- a) Existing powerhouse fishway:
 - Two powerhouse entrances = 210 cfs total
 - Spillway entrance = 100 cfs
- b) New west side spillway fishway = 100 cfs.

Prescription #5 - Replace the existing and new Denil fishways at the Milford Project with larger capacity facilities, consisting of either a vertical slot fishway (pools 11 feet W x 11 feet L x 9 inch drop per pool), or a fish lift/elevator system (with 1700 gallon ultimate hopper capacity), when the annual numbers of fish using the Denil fishways exceed 20,000 American shad or 200,000 river herring (alewife and blueback herring), or a combination of the two, with one shad equivalent to ten river herring (e.g., 10,000 shad plus 100,000 river herring).

Prescription #6 - Construct a separate fishway at the existing upstream fish passage facility at the powerhouse, or other suitable location at the Milford Project, to enhance the upstream passage of American eels.

Prescription #7 - Fishway designs for the Milford Project shall include the following two additional effectiveness measures, which are necessary for carrying out fishway operation and maintenance activities, and monitoring and evaluating activity inside the fishway:

- 1) access walkways and railings along the entire length of the existing and future fishways for safety purposes;
- 2) a side mounted vertical fish counting window at the powerhouse and spillway fishways for enumerating fish runs.

Downstream Fishways

Prescription #1 - Provide a downstream fishway at the Milford Project as described in BHE's filing dated January 12, 1990, (Response to Commission AIR, Items 10-13), with the following changes:

- a) Reduce the clear bar spacing at the outer trashrack from 4 inches to 1 inch over the upper 12 feet of rack. (If the Licensee elects to use 1 inch spacing on the inner trashrack, the bars on the outer trashrack can remain 4 inch clear opening. However, two additional entrance ports will be required along the inner rack.)
- b) Install twin 4 feet-wide (8 feet total) weirs at the outer trashrack capable of passing up to 280 cfs. The location of the weirs is to be west of the edge of the new generating Unit #2. Attraction flow to the downstream fishway is to range up to 280 cfs.
- c) Include a gated bottom intake to the downstream migrant facilities to provide for the downstream passage of American eels. If so indicated by the results of initial effectiveness studies at Milford, evaluate restricted generation at night over a two-week period to enhance downstream passage of adult American eels.

Prescription #2 - Design and install the downstream migrant conduit at the Milford powerhouse so that the discharge jet does not impact vertical walls.

Orono

Upstream Fishways

Prescription #1 - Construct either a vertical slot fishway (pools 8 feet W x 10 feet L x 9 inch drop per pool), Denil fishway (4 feet W x 1-on-8 slope), or a fish lift (with 600 gallon hopper capacity) at the Orono Dam.

Prescription #2 - Provide up to 50 cfs attraction flow at the fishway entrance.

Downstream Fishways

Prescription #1 - Install trashracks with 1-inch clear opening at the powerhouse turbine intake, and a gated surface and bottom bypass discharging up to 70 cfs during the downstream migration period. (This prescription would apply only if the Orono powerhouse is relicensed, and not decommissioned.)

A. Stillwater

Upstream Fishways

Powerhouse

Prescription #1 - Construct either a vertical slot fishway (pools 8 feet W x 10 feet L x 9 inch drop per pool), Denil fishway (4 feet W x 1-on-8 slope), or a fish lift (with 600 gallon hopper capacity) at the powerhouse.

Prescription #2 - Provide up to 50 cfs attraction flow at the fishway entrance.

Spillway

Prescription #1 - Construct either a vertical slot fishway (pools 8 feet W x 10 feet L x 9 inch drop per pool), a Denil fishway (4 ft. W x 1-on-8 slope), or a fish lift (with 600 gallon hopper capacity) at the spillway.

Prescription #2 - Provide up to 50 cfs attraction flow at the fishway entrance of the spillway.

Downstream Fishways

Prescription #1 - Install trashracks with a 1-inch clear opening at the powerhouse turbine intake and gated surface and bottom bypasses discharging up to 70 cfs during the downstream migration period.

* * *

ATTACHMENT B
TO LOWER PENOBSCOT RIVER CONCEPTUAL AGREEMENT

The Parties agree to the following provisions pertaining to the establishment and funding of a Contingent Mitigation Fund ("Mitigation Fund") to provide mitigation for habitat impacts of certain PPL Maine activities if Veazie and Great Works are not acquired and their dams removed by the Trust:

1. Purpose of the Contingent Mitigation Fund. The purpose of the Mitigation Fund is to provide for monetary compensation to mitigate for the impacts to habitat that may be caused by PPL Maine's implementation of provisions in Attachment A governing minimum bypass flows at Orono and Stillwater and the Headpond Increases at Medway, West Enfield and Stillwater ("Habitat Impacts") if Veazie and Great Works are not acquired or their dams are not removed by the Trust either because:

- A. The Trust either terminates or does not exercise the Option, or;
- B. Subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams.

For purposes of the Agreement, the Parties agree that the Habitat Impacts will occur.

2. Establishment. If the Trust either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams, the Trust shall contemporaneously provide notice to the Restoration Interests and PPL Maine. Within 30 days of such notice, and following consultation with PPL Maine and the Conservation Interests, the Maine Agencies, FWS, BIA, NOAA Fisheries, and PIN shall by mutual agreement provide for the establishment of the Mitigation Fund and designation of a third party to manage it.

3. Valuation of Habitat Impacts; Annual financial obligation. Beginning on the date each minimum bypass flow change and Headpond Increase provided for in Attachment A occurs, and continuing for each calendar year thereafter during the term of the current FERC license for each respective project (including as may be extended through the issuance of annual licenses) ("current license"), the Payor shall incur a corresponding annual financial obligation to the Mitigation Fund in the following amounts (with such amounts to be pro rated for the first calendar year in which such an obligation arises after initiation of the bypass flow change or Headpond Increase to reflect payment for only the portion of the year the habitat impact existed): West Enfield headpond increase - \$13,000; Stillwater headpond increase - \$1,000; Medway headpond increase - \$1,000; Orono minimum bypass flow - \$1,000; Stillwater minimum bypass flow - \$1,000 (hereinafter individually "annual financial obligation" and collectively "annual mitigation obligation"). The amount of each aforementioned annual financial obligation shall be adjusted annually in accordance with the Consumer Price Index ("CPI"), with said adjustment beginning in the calendar year following the Effective Date of the Agreement. The annual financial obligation for the calendar year in which the

current license for the respective project expires shall be pro rated to reflect the portion of the year during which the current license was in effect.

4. Schedule for Payment into the Mitigation Fund. No payment by the Payor of its annual mitigation obligation into the Mitigation Fund shall be due unless and until the Trust either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams. Acquisition of Veazie and Great Works and removal of their dams by the Trust shall extinguish permanently all annual mitigation obligations of the Payor. If the Trust either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams, the Payor shall have the following duties:

- A. The Payor shall pay into the Mitigation Fund an amount of money equal to the sum of the annual mitigation obligations incurred by the Payor to date. The Payor shall pay one half of this sum into the Mitigation Fund within 30 days after the end of the calendar year in which the Trust either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams. The Payor shall pay the other half of this sum into the Mitigation Fund within 30 days after the end of the following calendar year; and
- B. The Payor shall pay into the Mitigation Fund the annual mitigation obligation incurred for each calendar year after the Trust either terminates or does not exercise the Option, or if, subsequent to exercise of the Option, the Trust does not acquire Veazie and Great Works or remove their dams, within 30 days after the end of the calendar year in which it is incurred.

For the purpose of paragraph 3. and this paragraph 4., the term "Payor" shall be deemed to be (1) PPL Maine if Veazie and Great Works are not acquired by the Trust or (2) the Trust, or its successor or assign, if Veazie and Great Works are acquired but their dams are not removed by the Trust.

5. Disposition of monies in Mitigation Fund. Monies in the Mitigation Fund shall be expended, as determined by mutual agreement of PIN, BIA, FWS, NOAA Fisheries and the Maine Agencies, for:

- A. Replacing the fish and wildlife habitat lost or degraded by the Habitat Impacts;
- B. Compensating for loss or degradation of fish and wildlife habitat due to the Habitat Impacts by means other than replacement; and
- C. Supporting efforts directed at restoring to the Penobscot River fisheries and the habitat on which these fisheries rely.

UNITED STATES OF AMERICA 113 FERC ¶62,181
FEDERAL ENERGY REGULATORY COMMISSION

PPL Maine, LLC

Project No. 2710-035

ORDER ON OFFER OF SETTLEMENT
AND ISSUING NEW LICENSE

(December 8, 2005)

INTRODUCTION

1. On June 25, 2004, PPL Maine, LLC (PPL Maine) filed an application for a new license, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ for the redevelopment and operation of the 2.332-megawatt (MW) Orono Hydroelectric Project No. 2710 (Orono Project).
2. The Orono Project is located on the Penobscot River and Stillwater Branch of the Penobscot River in Penobscot County, Maine. The Penobscot River and Stillwater Branch of the Penobscot River are navigable waters of the United States.² The project is currently not operating. PPL Maine estimates that the project will produce an average annual energy generation of about 16,682 megawatt-hours (MWh).
3. The project does not occupy any federal land. As discussed below, I am issuing a new license for the project.

BACKGROUND

4. The current project license, issued on November 10, 1977,³ to Bangor Hydro-Electric, became effective on July 1, 1950, and originally was to expire on December 31, 1993. By order issued September 25, 1985, the license expiration date was accelerated, and became effective on September 25, 1985.⁴ Since then, the project has been under annual license.

¹ 16 U.S.C §§ 797(e) and 808, respectively.

² See *Bangor Hydro-Electric Co.*, 33 FPC 278 (1965) and *Bangor Hydro-Electric Co.*, 1 FERC ¶ 61,104 (1977).

³ 1 FERC ¶ 61,104.

⁴ 32 FERC ¶ 62,640.

5. On July 31, 1990, Bangor Hydro-Electric Co. filed an application to construct and operate the proposed Basin Mills Project No. 10981. The Basin Mills dam would have been located on the Penobscot River just downstream of the Orono powerhouse. The reservoir created by the Basin Mills dam would have made continued operation of the Orono Project impracticable, thus Bangor Hydro-Electric proposed to decommission the Orono Project.⁵ In the April 20, 1998 order denying the application for the Basin Mills Project, the Commission directed Bangor Hydro-Electric to report on its plans for the Orono Project in light of the Basin Mills' denial.⁶ After a series of extensions of time to file the report on its plans, PPL Maine filed its plans as an application for a new license for the Orono Project.

6. In 1996, the three project wood-stave penstocks failed, which caused the project to be shut down. On April 1, 1999,⁷ the Orono Project license was transferred from Bangor Hydro-Electric Company to Penobscot Hydro, LLC. On October 31, 2000,⁸ Penobscot Hydro, LLC changed its name to PPL Maine, LLC.

7. On June 25, 2004, PPL Maine filed the Lower Penobscot River Basin Comprehensive Settlement Accord (Lower Penobscot Settlement) on behalf of the: Penobscot Indian Nation (Penobscot); U.S. Department of the Interior (Interior); Maine State Planning Office (Maine Agencies) representing the and Maine Atlantic Salmon Commission, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources; American Rivers, Inc., Atlantic Salmon Federation, Maine Audubon Society, Natural Resources Council of Maine, and Trout Unlimited (jointly filed as the Conservation Interests); and the Penobscot River Restoration Trust (Trust). On June 29, 2004, the Commission issued a public notice of the filed Lower Penobscot Settlement and solicited comments.⁹

8. The Commission issued a public notice accepting the application and soliciting motions to intervene on February 25, 2005. The deadline to respond to this notice was April 26, 2005. The following entities filed timely motions to intervene, none of which

⁵ No one filed a competing application.

⁶ 83 FERC ¶ 61,039.

⁷ 87 FERC ¶ 62,001.

⁸ 93 FERC ¶ 62,076.

⁹ The following entities filed comments: National Oceanographic and Atmospheric Administration (NOAA Fisheries), Conservation Interests, Penobscot, Maine Agencies, and Interior.

are in opposition: NOAA Fisheries; Conservation Interests; Penobscot; Maine Agencies. Interior filed a motion to intervene out of time which was granted by notice issued December 1, 2005.

9. On February 23, 2005, the Commission issued a public notice that the application was ready for environmental analysis, soliciting comments, recommendations, terms and conditions, and prescriptions. The deadline to respond to this notice was April 24, 2005. The following entities filed comments: Interior; Conservation Interests; NOAA Fisheries; Penobscot; and Maine Agencies.

10. On August 19, 2005, the Commission staff made available for public comment an environmental assessment (EA). In letters filed on September 15, 16, and 19, 2005, Ronald Kreisman on behalf of PPL Maine, Interior, the Maine Agencies, and NOAA Fisheries commented on the EA. All comments have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

11. The rehabilitated Orono Project would consist of the following facilities: (1) an existing 1,178-foot-long by 15-foot-high dam that includes a 320-foot-long spillway topped with 2.4-foot-high flashboards; (2) an existing 2.3-mile-long reservoir, which has a surface area of 175 acres at the normal full pond elevation of 72.4 feet above mean sea level (msl); (3) three new 10-foot-diameter penstocks; (4) a 40-foot-wide, 94-foot-long and 27-foot-high surge tank located adjacent to the powerhouse; (5) a restored powerhouse containing four existing generating units with a total installed generating capacity of 2.332 MW; (6) three existing 325-foot-long transmission lines; and (7) appurtenant facilities. The dam and existing project facilities are owned by the applicant. The current project boundary encloses the dam, the reservoir up to the 73.0-foot msl elevation, the powerhouse, and the penstocks except for a short section that traverse beneath the Maine Central railroad bridge.

12. PPL Maine's project proposal includes:

- replacing the three failed wood-stave penstocks within the existing penstock right-of-way;
- rehabilitating the concrete surge tank that is adjacent to the powerhouse;
- replacing the wood-plank wheelpit floors with concrete;
- rehabilitating the four triple-runner horizontal turbines, and replacing two waterwheels;

- removing debris from the tailraces of each turbine discharge flume;
- rehabilitating the four generators and associated equipment (wicket gate pins, bushings, weak links, gate shaft bearings, push-pull arms, etc);
- replacing the generator controls and switchgear; and
- rehabilitating the powerhouse structure by replacing windows, plank decking above the wheelpits, wheelpit gates, access doors, and roofing as needed.

13. Prior to the June 1996 penstock failure and project shutdown, PPL Maine operated the project in a run-of-river mode, with a normal reservoir surface elevation of 72.4 feet msl. At 72.4 feet msl, the reservoir has a gross storage capacity of 1,300 acre-feet. When the project is operating, the project bypasses a 1,000-foot-long and up to 500-foot-wide reach of the Stillwater River. Flows through the bypassed reach during past operation consisted of leakage and unplanned spillage. PPL Maine proposes to operate in a run-of-river mode and maintain a 200-cfs minimum flow in the bypassed reach.

LOWER PENOBSCOT SETTLEMENT

14. The Lower Penobscot Settlement affects nine projects in the Penobscot River Basin and one project just outside the basin,¹⁰ and calls for phased implementation. Under phase 1, the parties requested that the Commission: approve amendment applications for the Milford (FERC No. 2534), Veazie, Stillwater (FERC No. 2712), Medway (FERC No. 2666), and West Enfield (FERC No. 2600) projects;¹¹ issue a new 40-year license for the Orono Project (FERC No. 2710), suspend processing of the relicensing applications for the Howland and Great Works projects;¹² and extend certain requirements of the licenses for the Veazie and Milford projects. The remaining three phases include: the withdrawal of pending requests for rehearing from the parties in the Basin Mills, Milford, Stillwater, and Veazie licensing proceedings and withdrawal of

¹⁰ The Ellsworth Project (FERC No. 2727) is located on the Union River in the Union River Basin, east of the Penobscot River.

¹¹ By Orders Modifying and Approving Amendment of License 111 FERC ¶ 62,061, 111 FERC ¶ 62,062, 111 FERC ¶ 62,063, 111 FERC ¶ 62,064, 111 FERC ¶ 62,065, the Commission approved the amendment requests for increased headpond levels, decreased minimum flows, and modified fishway prescriptions.

¹² See letter issued October 20, 2004, suspending the licensing process until June 2009.

Interior's section 4(e) and 10(e) requests for the Milford Project (Phase 2); the transfer and surrender of three licenses if the Option is exercised (Phase 3),¹³ and the potential for increased generating capacity at several projects (Phase 4).¹⁴

15. The Lower Penobscot Settlement contains provisions for the redevelopment of the Orono Project and includes two attachments: Attachment A containing specific fish passage provisions, and Attachment B pertaining to a Contingent Mitigation Fund (Fund). The Lower Penobscot Settlement also includes two additional agreements, the Lower Penobscot River Option Agreement (Option),¹⁵ and the Comprehensive Settlement Agreement between the Penobscot, PPL Maine, and the Bureau of Indian Affairs.

WATER QUALITY CERTIFICATION

16. Under Section 401(a)(1) of the Clean Water Act (CWA),¹⁶ the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition on any federal license or permit that is issued.¹⁷

17. On June 14, 2004, PPL Maine applied to the Maine Department of Environmental Protection (Maine DEP) for water quality certification for the project. On December 15, 2004, Maine DEP issued a certification for the Orono Project that includes conditions for water levels and flows (conditions 1.A-E), upstream and downstream fish passage (conditions 2.A-D, F and G), a contingent mitigation fund (condition 2.E), recreation facilities (condition 3), limits of approval (condition 4), and compliance with all

¹³ The Veazie and Great Works projects would be decommissioned and their dams removed; the Howland Project would be decommissioned and studied for potential dam removal.

¹⁴ The final phase of the Settlement calls for additional generation at Milford, Orono, Stillwater, Medway, and Ellsworth.

¹⁵ A key element of the Settlement involves PPL Maine providing the Trust with a 5-year option (Option) to acquire the Veazie (FERC No. 2403), Howland (FERC No. 2721), and Great Works (FERC No. 2312) projects from PPL Maine.

¹⁶ 33 U.S.C. § 1341(a)(1).

¹⁷ 33 U.S.C. § 1341(d).

applicable laws (condition 5). These conditions are set forth in Appendix A of this order and incorporated into the license (see ordering paragraph D).

COASTAL ZONE MANAGEMENT

18. The Coastal Zone Management Act (CZMA) of 1972, as amended, requires review of the project's consistency with the state's Coastal Management Program. In Maine, the State Planning Office is responsible for reviewing hydroelectric projects for consistency with the state's Coastal Zone Management Program (CZMP). In a letter dated March 17, 2004, the Maine State Planning Office states that the Orono project is not located in Maine's designated coastal zone, and that any issues regarding coastal resources or uses will be addressed through other pertinent state license and permitting processes.

FISHWAY PRESCRIPTIONS

19. Section 18 of the FPA, 16 U.S.C. § 811, provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce (Commerce), as appropriate.

20. Interior and NOAA Fisheries, on behalf of Commerce, filed preliminary fishway prescriptions on July 2, 2004, and April 20, 2005, respectively. Interior and Commerce also requested reservation of their respective authorities to prescribe the construction, operation, and maintenance of fishways, to be consistent with the Lower Penobscot Settlement.¹⁸

21. The preliminary prescriptions are similar and include provisions for downstream passage of all fish species, upstream passage for American eel, and upstream passage for species other than American eel. Upstream passage to species other than American eel is contingent on actions taken under the Lower Penobscot Settlement and on effectiveness monitoring.

22. The prescription for downstream facilities specifies the installation of trash racks with 1-inch clear spacing at the powerhouse turbine intake, and a gated surface as well as a bottom bypass discharging up to 70 cfs during the downstream migration period.¹⁹ The

¹⁸ Interior's and Commerce's reservations include the authority to prescribe a fish trap, as specified in the Lower Penobscot Settlement, upon acquisition by the Trust of the Veazie, Great Works, and Howland projects.

¹⁹ If shown to be necessary by studies of the effectiveness of these measures, but (continued)

prescription specifies operating periods and protocols, and would require maintenance and operation plans, detailed design drawings and schedules. For upstream passage of American eel, the licensee is to assess the appropriate location for the siting of a new upstream eel fishway, and upon approval of its proposed location by the FWS, Marine Resources, and the Penobscot, complete installation and initial testing, and have the fishway operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the effective date²⁰ of the Lower Penobscot Settlement. The prescription defines the upstream migration period for subsequent years as April 1 to November 30. As with the downstream passage facilities, the prescription specifies operating periods and protocols, and requires maintenance and operational plans, detailed design drawings and schedules.

23. The prescriptions for upstream fish passage for species other than American eel depend on the disposition of the Veazie, Great Works, and Howland projects in accordance with the Lower Penobscot Settlement. If the above projects are acquired by the Trust and removed, PPL Maine would file an amendment for installation and operation of a fish trapping facility at the Orono Project spillway. Trapped fish would be transported a short distance to the tailwater of the Orono Project at the confluence of the main stem Penobscot River and Stillwater Branch. If the above projects are not acquired, the licensee would implement the fishway prescriptions for upstream facilities previously filed by Interior and Commerce on May 20, 1997, and February 16, 1995, respectively, no later than June 25, 2010.

24. Lastly, the preliminary prescriptions require plans to monitor the effectiveness of the downstream and upstream facilities.

25. Interior and Commerce's prescriptions, which are consistent with the water quality certification, are attached to this order as Appendices B and C, and incorporated into the license (see ordering paragraph E). Consistent with Commission policy, Article 402 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior and Commerce for the Orono project.

in no case before the expiration of the safe harbor period delimited in Attachment A, section II(c) of the Settlement, PPL Maine would institute nightly shutdowns for downstream eel passage for a 2-week period during the downstream eel migration season.

²⁰ The effective date is the date the last party signs the Settlement, in this case, June 22, 2004, signed by the Trust.

ESSENTIAL FISH HABITAT

26. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act²¹ requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. Under section 305(b)(4)(A)²² of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH Conservation Recommendations for actions that would adversely affect EFH. Under section 305(b)(4)(B) of the Act,²³ an agency must, within 30 days after receiving recommended conservation measures from NOAA Fisheries or a Regional Fishery Management Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency's activity on the EFH.²⁴

27. EFH has been designated for Atlantic salmon in the Penobscot River and its tributaries. In the EA, Commission staff concluded that licensing the project, as proposed by PPL Maine, in accordance with the Lower Penobscot Settlement, would not adversely affect EFH. As such, no consultation is required with NOAA Fisheries. However, in a letter filed September 19, 2005, NOAA Fisheries indicated that it could not agree with staff's conclusions because staff did not recommend inclusion of the Lower Penobscot Settlement's provision for a Contingent Mitigation Fund in any license issued. Therefore, NOAA Fisheries recommended pursuant to section 305(b)(4)(A) that the Commission include the Contingent Mitigation Fund as a license condition for the Orono Project.

28. Because the Contingent Mitigation Fund is included as condition 2.E of the water quality certification, it is a requirement of this license.

²¹ 16 U.S.C. § 1855(b)(2).

²² 16 U.S.C. § 1855 (b)(4)(A).

²³ 16 U.S.C. § 1855(b)(4)(B).

²⁴ The measures recommended by the Secretary of Commerce are advisory, not prescriptive. However, if the federal agency does not agree with the recommendations of the Secretary of Commerce, the agency must explain its reasons for not following the recommendations.

THREATENED AND ENDANGERED SPECIES

29. Section 7(a)(2) of the Endangered Species Act of 1973²⁵ requires federal agencies to ensure 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 their designated critical habitat.

30. No federally listed threatened or endangered fish species occur in the Orono Project area including the Penobscot River main stem above the Veazie dam. However, two endangered fish species are found in areas further downstream. The federally endangered Cove Brook Atlantic salmon are included in the Gulf of Maine Distinct Population Segment (DPS) and occur downstream of the former site of the Bangor dam located about 9 miles downstream. The federally endangered Shortnose sturgeon is believed to occupy habitat in the lower Penobscot River drainage most likely downstream of Veazie Dam located about 6 miles downstream. Because the project would be operated run-of-river, the project would not affect habitat conditions in the lower Penobscot drainage below Veazie Dam. The EA, therefore, concluded that redeveloping and operating the project, as proposed by PPL Maine, and in accordance with the Lower Penobscot Settlement, would not affect the Gulf of Maine DPS of Atlantic salmon or Shortnose sturgeon. In its letter filed September 19, 2005, NOAA Fisheries agreed with this no effect finding. Therefore, section 7 consultation for listed Atlantic salmon and shortnose sturgeon is not necessary.

31. Bald eagle reportedly forage in the Orono project area year-round and are the only other federally listed species known to occur in the project area. The EA found that project rehabilitation, because it would be of short duration with limited ground disturbance, much of which would be within the project powerhouse, would not have a significant adverse effect on bald eagles that forage in the project area. Regarding project operation, the EA found that the proposed 200-cfs flow release through the bypassed reach should protect habitat for fish that eagles may use for food. To protect bald eagle habitat at the project, the EA recommended maintaining existing riparian forest at the project.

32. Based on the anticipated minimal effects of rehabilitating and operating the project, the EA found that redevelopment of the Orono Project would not be likely to adversely affect the bald eagle. In a letter dated September 8, 2005, the FWS concurred with this determination. Article 403 requires that the licensee maintain riparian forest at the project.

²⁵ 16 U.S.C. § 1536(a).

CULTURAL RESOURCES

33. The Maine Historical Preservation Commission (State Historic Preservation Officer - SHPO), in its letter dated March 14, 2004, reported that there are no properties in the Orono Project area of prehistoric, historic, architectural or archaeological significance that would be adversely affected by project licensing. PPL Maine also consulted with the Penobscot Tribal Historic Preservation Officer (THPO) regarding the project licensing to confirm that there are no cultural, historic or archaeological issues at this time. If, however, PPL Maine undertakes land-disturbing maintenance or repair at the project in the future, and if archaeological or historic sites are discovered, consultation with the SHPO and THPO and mitigation measures would help protect the discovered sites. Article 405 requires PPL Maine to consult with the SHPO and THPO if any archaeological or cultural sites are discovered during ground-disturbing or land-clearing activities.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

34. Section 10(j)(1) of the FPA,²⁶ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,²⁷ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

35. In a letter filed April 20, 2005, NOAA Fisheries submitted four recommendations, all of which fall within the scope of section 10(j).²⁸ This license includes conditions consistent with all four recommendations and require the licensee to: (a) maintain a continuous, year-round minimum flow of 200 cfs in the bypassed reach (water quality certification condition 1.B; Appendix A); (b) develop a minimum flow operation and monitoring plan (water quality certification condition 1.E; Appendix A); (c) operate the

²⁶ 16 U.S.C. § 803(j)(1).

²⁷ 16 U.S.C. § 661 *et seq.*

²⁸ In its April 25, 2005, filing, the Maine State Planning Office, submitting comments on behalf of Maine Departments of Conservation, Inland Fisheries and Wildlife, Marine Resources, and the Atlantic Salmon Commission recommended as licensing conditions the terms and conditions submitted by NOAA Fisheries pursuant to section 10(j) of the FPA.

project in a run-of-river mode (water quality certification condition 1.A; Appendix A); and (d) coordinate head pond drawdowns with the resource agencies (Article 401).

COMMENTS ON THE EA

A. Contingent Mitigation Fund

36. The signatories to the Lower Penobscot Settlement disagree with Commission staff's recommendation in the EA to exclude from the Orono Project license an article requiring PPL Maine to contribute to the Contingent Mitigation Fund (Fund). NOAA Fisheries indicates that the Fund is needed to offset impacts associated with the Orono Project in the event that upstream fish passage is not installed. The signatories request that the Commission include the Fund in a license article for the Orono Project.

37. Under the Lower Penobscot Settlement, PPL Maine would establish the Fund to provide mitigation for habitat effects of certain PPL Maine activities if the Veazie and Great Works projects are not acquired by the Trust and their respective dams not subsequently removed.²⁹ In the EA, staff concluded that its recommended measures including operating the project in a run-of-river mode with an impoundment fluctuation of one foot or less, maintaining a minimum flow of 200 cfs in the bypassed reach and providing downstream fish passage and upstream eel passage facilities would protect and enhance aquatic resources in the Stillwater Branch and main stem of the Penobscot River. The EA did not identify additional effects of the project that were not being addressed by the above recommended measures. However, condition 2.E of the water quality certification requires the establishment of and payments to the Fund in accordance with the Lower Penobscot Settlement and, therefore, the Fund will be incorporated into this license by ordering paragraph D.

B. Upstream Fish Passage

38. The signatories also disagreed with staff's treatment of the Lower Penobscot Settlement's provisions for upstream fish passage. The signatories state that inclusion of an upstream fish passage article in the Orono license in a manner consistent with the Lower Penobscot Settlement is an essential component of the Settlement.

39. Because the nature of upstream fish passage requirements under section 18 of the FPA at the Orono Project for species other than American eel was contingent on whether certain projects in the Penobscot River Basin would be acquired by the Trust and ultimately removed, the EA concluded that the appropriate time to consider upstream fish

²⁹ If Veazie and Great Works are acquired by the Trust but the dams are not removed, the Trust would replace PPL Maine as the payor to the Fund.

passage would be once the future action had been identified; essentially, a reservation of the Commission's authority to require fishways that Interior or Commerce may prescribe in the future. However, since fish passage requirements submitted by Interior and Commerce under Section 18 are mandatory, they have been included in the license under ordering paragraph E. Furthermore, because upstream fish passage provisions in accordance with the Lower Penobscot Settlement are also included in the water quality certification (conditions 2.A, 2.D, 2.F, and 2.G), the upstream fish passage provisions of the Lower Penobscot Settlement will be incorporated into this license by ordering paragraph D.

OTHER ISSUES

A. Soil erosion and sedimentation control

40. The EA found that PPL Maine's proposal to replace previously demolished penstocks with new penstocks within the existing penstock right-of-way could cause some short-term erosion and sedimentation effects in the Stillwater Branch of the Penobscot River. To help ensure that aquatic resources in the Stillwater Branch are protected during rehabilitation activities, Article 302 requires a soil erosion and sediment control plan prior to the start of any construction including installing new penstocks.

B. Recreation

41. In a recreation plan filed with the application, PPL Maine proposes to maintain an existing portage trail, signage, and parking area at the powerhouse. Condition 3 of the section 401 WQC requires PPL Maine to maintain a portage trail around the project. The plan is approved in ordering paragraph F. Article 404 requires implementation of the recreation plan.

C. Aesthetics

42. The three new 10-foot-diameter penstocks would extend 800-900 feet from the dam to the powerhouse and would run along a section of the river below the project dam. The EA recommended that the new penstocks be painted a color that blends with the surrounding environment in order to minimize the visual effects of installing new penstocks. Article 406 requires the penstocks to be a color that blends with the surrounding environment to protect project aesthetics.

ADMINISTRATIVE CONDITIONS

A. Annual Charges

43. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA.

B. Exhibit F and G Drawings

44. The Exhibit F drawings filed with the license application are approved and made part of the license (see ordering paragraph (C)). The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of these drawings.

45. The Exhibit G drawings that were filed with the license application and response to additional information do not meet the current Commission requirements for project boundary maps, because the project boundary map does not enclose all principal project works necessary for operation and maintenance of the project within the project boundary line. Specifically, the project boundary must enclose the entire length of the penstock from the dam to the powerhouse, the primary transmission lines, and the canoe portage. Article 203 requires the licensee to file revised Exhibit G drawings meeting the above requirements pursuant to 18 CFR sections 4.39 and 4.41.

C. Amortization Reserve

46. The Commission requires that for new major licenses, licensees must set up and maintain an amortization reserve account upon license issuance. Article 204 requires the establishment of the account.

D. Headwater Benefits

47. Some projects directly benefit from headwater improvements that were constructed by other licensees, by the United States, or by permittees. Article 205 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

E. Construction Activities

48. This license requires PPL Maine to replace or rehabilitate the penstocks, surge tank, wheelpit floors, and powerhouse. Articles 301, 302, 303, 304, and 305 require cofferdam construction drawings, contract plans and specifications, a quality control and inspection plan, a temporary emergency action plan, and as-built drawings, respectively.

F. Use and Occupancy of Project Lands and Waters

49. Requiring a licensee to obtain prior Commission approval for every use or occupancy of the project would be unduly burdensome. Therefore, Article 407 allows

the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

STATE AND FEDERAL COMPREHENSIVE PLANS

50. Section 10(a)(2)(A) of the FPA, 16 U.S.C. § 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, and conserving a waterway or waterways affected by the project.³⁰ Under Section 10(a)(2)(A), federal and state agencies filed 11 comprehensive plans that address various resources in Maine. Staff identified and reviewed the 11 comprehensive plans, all of which are relevant to this project.³¹ No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

51. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,³² Commission staff evaluated PPL Maine's record as a licensee for these areas: (A) conservation efforts; (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 findings in each of the following areas.

A. Conservation Efforts

52. Section 10(a)(2)(C) of the FPA requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity, taking into account the published policies, restrictions, and requirements of state regulatory authorities. PPL Maine sells all the power generated by the project on a wholesale basis to customers within the Independent System Operator - New England (ISO-NE) system, and does not serve any retail customers. Staff concludes that, given the limits of its

³⁰ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19.

³¹ The list of applicable plans can be found in section IX of the environmental assessment for the project.

³² 16 U.S.C. § 803(a)(2)(C) and § 808(a).

ability to influence users of the electricity generated by the project, PPL Maine complies with Section 10(a)(2)(C) of the FPA.

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

53. Commission staff reviewed PPL Maine's compliance with the terms and conditions of the existing license. PPL Maine's overall record of making timely filings and compliance with its license is satisfactory. Staff concludes that PPL Maine has or can acquire the resources and expertise necessary to carry out its plans and comply with all articles and terms and conditions of a new license.

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

54. Commission staff reviewed PPL Maine's proposed operation and maintenance of the Orono Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. The staff concludes that the dam and project works at the Orono Project are safe, and has no reason to believe that PPL Maine cannot continue to safely manage, operate, and maintain the project facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

55. Commission staff reviewed PPL Maine's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. PPL Maine has been operating the project in an efficient manner within the constraints of the existing license. Staff concludes that PPL Maine is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

56. To assess the need for power, Commission staff looked at the needs in the operating region in which the project is located. The project is located in the Northeast Power Coordinating Council region of the North American Electric Reliability Council (NERC). NERC annually forecasts electric supply and demand in the nation and the region for a ten-year period. NERC's recent report on annual supply and demand projections indicate that, for the period 2004 – 2013, average growth in electrical demand will increase 1.3 percent annually. Staff concludes that the project's power, low cost, displacement of nonrenewable fossil-fired generation, and contribution to the region's diversified generation mix, will help meet a need for power in the region.

F. Transmission Services

57. The Orono Project has three, 325-foot-long, 2.4-kilovolt primary transmission lines that carry electric power generated from the project to the regional grid. No changes are recommended or proposed that would affect the capability of the project to connect to the regional grid to serve delivery to the region.

G. Cost Effectiveness of Plans

58. PPL Maine proposes a number of facility and operational changes to enhance water quality, fishery, and recreation resources. Based on PPL Maine's record as an existing licensee, staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

59. PPL Maine pays taxes annually to local and state governments, and the project provides employment opportunities and attracts those interested in various forms of available recreation. Staff concludes that the various environmental and recreational enhancement measures approved in this license would benefit the public.

PROJECT ECONOMICS

60. In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, the Commission considers a number of public interest factors, including the economic benefit of the project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in Mead Corp.,³³ the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic 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 of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

61. As proposed by PPL Maine, consistent with the Lower Penobscot Settlement, and with the mandatory water quality certification conditions and section 18 prescriptions, the annual cost of the project would be about \$507,310 (30.41 mills/kWh). The annual power value, for the estimated annual generation of 16,682 MWh, would be \$902,230

³³ 72 FERC ¶ 61,027 (1995).

(54.08 mills/kWh).³⁴ To determine whether the proposed project is currently economically beneficial, staff subtracts the project's cost from the value of the power the project produces. Therefore, in the first year of operation, the project would cost \$394,920 (23.67 mills/kWh) less than the likely alternative cost of power.

62. If licensed with staff-recommended measures,³⁵ without upstream fish passage facilities, the fish trapping facility, and the Fund, the Orono Project would produce an average of 16,682 MWh of energy annually at a cost of about \$487,910 or 29.25 mills/kWh. The annual value of the project's power would be about \$902,230 or 54.08 mills/kWh. Therefore, in the first year of operation, the project would cost \$414,320, or 24.83 mills/kWh less than currently available alternative power.

63. If licensed as proposed by PPL Maine, consistent with the Lower Penobscot Settlement, with the mandatory water quality certification conditions and section 18 prescriptions, and with the staff-recommended measures, the Orono Project would produce an average of 16,682 MWh of energy annually at a cost of about \$508,220 or 30.46 mills/kWh. The annual value of the project's power would be about \$902,230 or 54.08 mills/kWh. Therefore, in the first year of operation, the project would cost \$394,010, or 23.62 mills/kWh less than currently available alternative power.

64. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include their capability to provide an almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor-correction through condensing operations, and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout.

COMPREHENSIVE DEVELOPMENT

65. Sections 4(e) and 10(a) of the FPA,³⁶ require the Commission, in acting on license applications, to give equal consideration to the developmental and environmental uses of

³⁴ The annual value of alternative power is based on information in Energy Information Administration, Annual Energy Outlook 2005.

³⁵ Staff recommendations include protecting existing forested riparian areas and historic properties, blending the new penstocks with the surrounding environment, and plans for soil erosion control and operation compliance monitoring.

³⁶ 16 U.S.C. § 797(e) and 803§ (a)(1).

the waterway on which a project is located. Any license issued shall be such as in the Commission's judgment would be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

66. The EA for the Orono Project contains background information, analysis of effects, support for related license articles, and the basis for a finding that the project will not result in any major, long-term adverse environmental effects. The project would be safe if operated and maintained in accordance with the requirements of this license.

67. Based on my independent review and evaluation of the Orono Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, I have selected the staff-recommended alternative for the Orono Project, including the WQC conditions and section 18 prescriptions from the agencies because they are mandatory, and find that it is best adapted to a comprehensive plan for improving or developing the Stillwater Branch of the Penobscot River.

68. I selected this alternative because: (1) issuance of a new license would serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures would protect and enhance fish and wildlife resources, water quality, recreational resources and historic properties; and (3) the 2.332 MW of electric energy generated from a renewable resource would offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

LICENSE TERM

69. Section 15(e) of the FPA³⁷ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.

70. Section I.d.1 of Attachment A to the Lower Penobscot Settlement contains a provision requesting the issuance of a 40 year license. This license authorizes a moderate

³⁷ 16 U.S.C. § 808(e).

amount of construction and environmental measures. Therefore, this license is being issued for a term of 40 years.

The Director orders:

(A) This license is issued to PPL Maine, LLC (licensee), for a period of 40 years, effective the first day of the month in which this order is issued, to construct, operate and maintain the Orono Hydroelectric Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(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 filed on January 24, 2005:

<u>Exhibit G Drawing</u>	<u>FERC No. 2710</u>	<u>Description</u>
Sheet 1 of 1	1001	Detail Map Reservoir

(2) Project works consisting of: (1) an existing 1,178-foot-long by 15-foot-high dam including a 320-foot-long spillway topped with 2.4-foot-high flashboards; (2) an existing 2.3-mile-long reservoir, which has a surface area of 175 acres at the normal full pond elevation of 72.4 feet above mean sea level (msl); (3) three new 800- to 900-foot-long, 10-foot-diameter penstocks; (4) a restored powerhouse containing four existing generating units with a total installed generating capacity of 2.332 MW; (5) three existing 325-foot-long, 2.4-kilovolt transmission lines; and (6) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of exhibits A and F shown below:

Exhibit A: Pages A-1 through A-10 filed on June 25, 2004, and pages A#1-1 through A#1-3 filed on January 24, 2005.

Exhibit F: The following Exhibit F drawings filed on June 25, 2004:

<u>Exhibit F Drawings</u>	<u>FERC No. 2710-</u>	<u>Description</u>
Sheet 1	1001	General Plan and Dam Sections
Sheet 2	1002	Main Floor Plan
Sheet 3	1003	Power House Sections

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

(C) The Exhibits A and F described above are approved and made part of the license. The Exhibit G drawing filed January 24, 2005, in response to Commission staff's additional information request supplementing the license application, does not conform to Commission regulations and is not approved. Article 203 requires the licensee to file revised Exhibit G drawings.

(D) This license is subject to the conditions submitted by the Maine Department of Environmental Protection under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1431(a)(1), as those conditions are set forth in Appendix A to this order.

(E) This license is subject to the prescriptions submitted by the U.S. Department of the Interior and the U.S. Department of Commerce under section 18 of the FPA, as those conditions are set forth to this order in Appendices B and C, respectively.

(F) The recreation plan, filed with the application on January 24, 2005, is approved and made part of this license.

(G) 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," and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States the following annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 2,332 kilowatts.

Article 202. Exhibit Drawings. Within 45 days of license issuance, the licensee shall file the approved exhibit F drawings in aperture card and electronic file formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project Drawing Number (i.e., P-1234-#### through P-1234-####) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC

Exhibit (i.e., F-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office.

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. Exhibit F drawings must be identified as critical energy infrastructure information (CEII) material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-1234-####, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" X 36" (min), 28" X 40" (max)
FILE SIZE – less than 1 MB desired

Article 203. Exhibit G Drawings. Within 90 days of license issuance, the licensee shall file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary all principal project works necessary for operation and maintenance of the project, including the entire length of the penstock from the dam to the powerhouse, the primary transmission lines, and the existing canoe portage located on the right shoreline, northeast of the powerhouse. The Exhibit G drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 204. Amortization Reserve. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. 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 13 monthly balances of amounts properly included 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 ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 205. Headwater Benefits. If the licensee's project was directly benefited 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.

Article 301. Cofferdam Construction Drawings. Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's New York Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, Division of Dam Safety and Inspections), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee shall submit one copy of its plans and specifications (and a supporting design document for an unconstructed dam) to the Commission's New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections). The licensee may not begin construction until the Regional Engineer has approved in writing the plans and specifications and determined that all preconstruction requirements have been satisfied. The submittal to the Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan.

Article 303. Quality Control and Inspection Program (QCIP). At least 60 days before starting and license-related construction activities, the licensee shall submit one copy to the Commission's New York Regional Engineer and two copies to the Commission (one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections) of a Quality Control and Inspection Program (QCIP) for the Commission's review and approval. The QCIP shall include a sediment and erosion control plan.

Article 304. Temporary Emergency Action Plan (TEAP). At least 60 days before starting construction, the licensee shall submit one copy to the Commission's New York Regional Engineer and two copies to the Commission (one of which shall be a courtesy copy to the Director, Division of Dam Safety and Inspections) of a Temporary Emergency Action Plan (TEAP) for Commission's review and approval. The TEAP shall describe emergency procedures in case failure of a cofferdam, large sediment control structures or any other water retaining structure that would endanger construction workers or the public. The TEAP shall include a notification list of emergency response agencies, a plan drawing of the proposed cofferdam arrangement, the location of safety devices and escape routes, and a brief description of testing procedures.

Article 305. As-built Drawings. Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's New York Regional Engineer, the Director, D2SI, and the Director, DHAC.

Article 401. Operation and flow compliance monitoring plan. Within six months of license issuance, the licensee shall file for Commission approval, a plan for providing and monitoring run-of-river operation, water levels, and minimum flows required by condition 1 of the section 401 water quality certification including additional measures identified below.

The plan shall include, at a minimum:

- (1) a description of the means for maintaining the 200-cfs minimum flow in the Orono bypassed reach;
- (2) a schedule for installing all necessary gaging devices;
- (3) the proposed locations of the gaging devices;
- (4) the method of flow and impoundment level data collection;
- (5) a provision for coordinating the timing of maintenance drawdowns with the consulted agencies and Penobscot Indian Nation; and
- (6) a provision for providing the data to the agencies and Penobscot Indian Nation in a timely manner.

The plan shall be prepared in consultation with the U.S. Fish and Wildlife Service, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, Maine Atlantic Salmon Commission, Maine Department of Marine Resources, and the Penobscot Indian Nation (entities).

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 entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to 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 site-specific information.

The Commission reserves the right to require changes to the plan. The 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 any changes required by the Commission.

Article 402. Reservation of Authority to Prescribe Fishways. 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 Secretaries of the Interior and/or Commerce pursuant to section 18 of the Federal Power Act.

Article 403. Riparian Habitat Protection. To protect bald eagle habitat at the project, the licensee shall, to the extent feasible, maintain existing forested riparian areas at the project. If, during the license term, modification or disturbance of such habitat is proposed, the licensee shall consult with the Maine Department of Inland Fisheries and Wildlife and the U.S. Fish and Wildlife Service, and file a request with the Commission for approval. The licensee's request must include comments on the proposal from the consulted agencies.

Article 404. Recreation Plan. Within three months of license issuance, the licensee shall implement its recreation plan and file documentation with the Commission that the plan has been implemented.

Article 405. Cultural Resources. 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 Maine State Historic Preservation Officer (SHPO) and the Penobscot Tribal Historic Preservation Officer (THPO).

If the licensee discovers previously unidentified archeological or historic resources 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 resources and consult with the SHPO and THPO.

In either instance, the licensee shall file for Commission approval an historic properties management plan (plan) prepared by a qualified cultural resource specialist after having consulted with the SHPO and THPO. The plan shall include the following items:

- (1) a description of each identified or discovered resource indicating whether it is listed on or eligible to be listed on the National Register of Historic Places (NRHP);
- (2) an evaluation of each identified or discovered resource not listed on the HRHP with respect to its eligibility for such listing (historic property);
- (3) a description of the potential effects on any historic properties;
- (4) proposed measures for avoiding or mitigating any adverse effects on historic properties;
- (5) documentation of the nature and extent of consultation; and
- (6) a schedule for implementing any proposed mitigation measures and conducting additional studies.

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 resource discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled. The Commission reserves the right to require changes to the plan.

Article 406. Aesthetics. The licensee shall paint the proposed new project penstocks a color, or construct the penstocks with a material, that visually blends the penstocks with the surrounding landscape. The licensee shall provide photographic documentation of compliance with this article with the as-built drawings required in Article 305.

Article 407. Use and Occupancy. (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 impoundment 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 impoundment. 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 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 Energy Projects, 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 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 report on recreational resources of an Exhibit E; or, if the project does not have an 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 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 drawings would be filed for approval for other purposes.

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

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

(I) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

J. Mark Robinson
Director
Office of Energy Projects

APPENDIX A

Maine Department of Environmental Protection
Certification under section 401 of the
Federal Clean Water Act

1. WATER LEVELS AND FLOWS

A. Except as temporarily modified by (1) approved maintenance activities, (2) extreme hydrologic conditions, as defined below, or (3) emergency electrical system conditions, as defined below, or (4) agreement between the applicant, appropriate state and/or federal agencies, and the Penobscot Indian Nation, beginning within 60 days of FERC approval of the flow and water level monitoring plan described in Condition 1 .E. below, or upon such other schedule as established by FERC, the Orono Project shall be operated in a run-of-river mode, with outflow approximately equal to inflow on an instantaneous basis except for flashboard failure or replacement, and impoundment levels maintained within one foot of full pond (elevation 72.4 feet msl). During times of flashboard failure, the applicant will maintain water levels at or above the spillway crest. During those times when flashboards are being replaced, the applicant will maintain water levels within one foot of the spillway crest.

B. Except as temporarily modified by (1) approved maintenance activities, (2) extreme hydrologic conditions, as defined below, or (3) emergency electrical system conditions, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, a minimum flow of 200 cfs to the bypass reach shall be maintained.

C. "Extreme Hydrologic Conditions" means the occurrence of events beyond the Licensee's control, such as, but not limited to, abnormal precipitation, extreme runoff, flood conditions, ice conditions or other hydrologic conditions such that the operational restrictions and requirements contained herein are impossible to achieve or are inconsistent with the safe operation of the project.

D. "Emergency Electrical System Conditions" means operating emergencies beyond Licensee's control which require changes in flow regimes to eliminate such emergencies which may in some circumstances include but are not limited to equipment failure or other abnormal temporary operating condition, generating unit operation or third-party mandated interruptions under power supply emergencies; and orders from local, state or federal law enforcement or public safety authorities.

E. The applicant shall, within 6 months of issuance of a New License for the project by FERC or upon such other schedule as established by FERC, submit plans for providing and monitoring the water levels and flows required by this condition. These plans shall be developed in consultation with U.S. Fish and Wildlife Service (USFWS), Maine

Department of Inland Fisheries and Wildlife (MDIFW), Maine Atlantic Salmon Commission (MASC), Maine Department of Marine Resources (MDMR), Penobscot Indian Nation (PIN), and DEP. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

2. FISH PASSAGE

A. UPSTREAM EEL PASSAGE

The applicant shall install and operate an upstream fishway for eels at the Orono Project, in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004.

B. DOWNSTREAM FISH PASSAGE

Permanent downstream fish passage facilities shall be installed and operational at the Orono Project in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004. These fish passage facilities shall be as prescribed by the May 20, 1997, DOI Fishway Prescription and shall be operational concurrent with the commencement of project operation.

C. DOWNSTREAM EEL PASSAGE

If shown to be necessary by effectiveness studies conducted in accordance with condition 2G. below, the applicant shall implement 2-week shutdowns at night for downstream eel migration. This shutdown shall not be required earlier than the expiration of the Safe Harbor period described in the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004.

D. UPSTREAM FISH PASSAGE

(1) Upon Acquisition of Designated Projects by the Trust. In the event the option to purchase the Veazie, Great Works, and Howland projects is exercised and those projects are acquired by the Trust, the applicant shall install a fish trapping facility at the Orono project spillway in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004.

(2) If Designated Projects are Not Acquired by the Trust. In the event the Veazie, Great Works, and Howland projects are not acquired by the Trust, the applicant shall install upstream fish passage facilities in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004. These fish passage facilities shall be as prescribed by the May 20, 1997 DOI Fishway Prescription.

E. CONTINGENT MITIGATION FUND

In the event that the option to purchase the Veazie and Great Works projects is not exercised or is terminated, or if, subsequent to the exercise of the option, the Veazie and Great Works projects are not acquired and removed, the applicant shall participate in the establishment of and shall provide funds to a Contingent Mitigation Fund, in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004.

F. FISH PASSAGE FACILITIES PLANS

The applicant shall, in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004, or upon such other schedule(s) as established by FERC, submit final design and operational plans for all upstream and downstream fish passage facilities and/or operational measures required by this approval, prepared in consultation with state and federal fisheries agencies and the Penobscot Indian Nation. These plans shall include a schedule for facilities construction and operation. These plans shall be reviewed by and must receive approval of the DEP prior to construction.

G. FISH PASSAGE EFFECTIVENESS STUDIES AND RESULTS

(1) Studies. The applicant shall, in consultation with state and federal fisheries agencies and the Penobscot Indian Nation, conduct a study or studies to determine the effectiveness of all interim and permanent upstream and downstream fish passage facilities and/or operational measures required by this approval.

(2) Study plans. The applicant shall, in accordance with the schedule(s) established by FERC, submit plans for a study or studies to determine the effectiveness of all interim and permanent upstream and downstream fish passage facilities and/or operational measures required by this approval, prepared in consultation with state and federal fisheries agencies and the Penobscot Indian Nation. These plans shall be reviewed by and must receive approval of the DEP prior to implementation.

(3) Results of studies. The applicant shall, in accordance with the terms of the Lower Penobscot River Multiparty Settlement Agreement, dated June 2004, or the schedule(s) established by FERC, submit the results of any fish passage effectiveness study or studies, along with any recommendations for changes in the design and/or operation of any interim or permanent upstream or downstream fish passage facilities constructed and/or operated pursuant to this approval. The Department reserves the right, after notice and opportunity for hearing, to require reasonable changes in the design and/or operation of these fish passage facilities as may be deemed necessary to adequately pass

anadromous fish through the project site. Any such changes must be approved by FERC prior to implementation.

3. RECREATIONAL FACILITIES

The applicant shall maintain a portage trail around the project.

4. LIMITS OF APPROVAL

This approval is limited to and includes 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 DEP prior to implementation.

5. 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 in a

APPENDIX B

U.S. Department of the Interior Section 18 Prescriptions

The Department included specific requirements for fishways at the Orono Project in its May 20, 1997 prescription in the Basin Mills Project proceeding (Project no. 10891). The Commission has yet to issue a subsequent long-term license for the Orono Project. In response to PPL Maine's application for a new license for the Orono Project, the Secretary of the Interior, exercising her authority under § 18 of the FPA, hereby provides a preliminary prescription providing for upstream and downstream passage that comply with the specific provisions in the Agreement.

1. The licensee shall provide safe and effective upstream eel passage at the Orono project. The licensee shall assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by the USFWS, MDNR, and PIN, shall complete installation and initial testing, and have the fishway fully operational prior to the beginning of the third upstream eel migration season (approximately May 1) following the effective date of the Agreement.
2. The licensee shall provide downstream fish passage as previously prescribed by the Department in its prescription dated May 20, 1997, within 3 years after the license is issued. If shown to be necessary by studies of the effectiveness of these measures, but in no case before the expiration of the safe harbor period delimited in Attachment A, Section II(c) of the Lower Penobscot River Multiparty Settlement Agreement, the licensee shall institute nightly shut-downs for downstream eel passage for a two-week period during the downstream eel migration period.
3. The Department hereby reserves its authority under § 18 of the FPA to prescribe such fishways as may be necessary and not inconsistent with the Agreement during the term of the license. This specifically includes authority to prescribe a fish trap, as specified in Attachment A to the Agreement, upon acquisition of the Veazie, Great Works, and Howland Projects.

APPENDIX C

National Oceanographic and Atmospheric Administration
Section 18 Prescriptions

(A) The following are prescriptive measures to provide for the safe and effective downstream passage of diadromous fish species.

1. The licensee shall provide downstream fish passage for all species within 3 years after the license is issued. The licensee shall install trashracks with 1-inch clear opening at the powerhouse turbine intake, and a gated surface and bottom bypass discharging up to 70 cfs during the downstream migration period. If shown to be necessary by studies of the effectiveness of these measures, but in no case before the expiration of the safe harbor period delimited in Attachment A, Section II(c) of the MPA, the licensee shall institute nightly shut-downs for downstream eel passage for a two week period during the downstream eel migration season.
2. The downstream migration period is defined as April 1 to June 30 and November 1 to December 15 for Atlantic salmon, July 1 to December 31 for American shad and alewife, August to December 31 for blueback herring, and August 15 to November 15 (or other time periods determined when adequate information is available, and during any spring run that may occur) for American eel. Downstream facilities are to operate whenever generation occurs during the downstream migration period.
3. Fishways shall be maintained and operated to maximize fish passage effectiveness throughout fish migration period(s) defined above. The licensee shall keep the fishways in proper order and shall keep fishway areas clear of trash, logs, and material that would hinder passage. Anticipated maintenance shall be performed in sufficient time before a migratory period such that fishways can be tested and inspected, and will operate effectively prior to and during the migratory periods.
4. Fishway maintenance and operational plans (including schedules) for all downstream fish passage facilities shall be developed by the licensee in consultation and cooperation with NMFS, the USFWS, the Penobscot Indian Nation (PIN), and other fishery agencies, including the Maine Department of Inland Fisheries and Wildlife (IFW), Maine Department of Marine Resources (DMR), and Maine Atlantic Salmon Commission (MASC). Functional design and final design plans for all fishways shall be developed in consultation and cooperation with NOAA Fisheries, USFWS, PIN, and other fishery agencies.
5. Within six months of the order issuing a new license for Orono, the licensee shall file, for Commission approval, detailed design drawings for the surface and bottom bypasses. This filing shall include but not be limited to: (1) the location and design specifications

of the bypasses; (2) a schedule for installing the facilities within 18 months of a Commission order approving the design drawings; and (3) procedures for operating and maintaining the facilities.

6. The licensee shall include with the filings required by the consultations for fishway maintenance and operation plans and design drawings, copies of agency and PIN comments and recommendations on the plans, schedules, and drawings after they have been prepared and provided to the agencies, and specific descriptions of how the agencies' and PIN's comments and recommendations are accommodated by the licensee's facilities. The licensee shall allow a minimum of 30 days for the agencies and PIN to comment and to make recommendations before filing the drawings, plans, and schedule with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

(B) The following are prescriptive measures to provide for the safe and effective upstream passage of diadromous fish species.

1. The licensee shall provide safe and effective upstream eel passage at the Orono project. The licensee shall assess the appropriate location for the siting of the new upstream eel fishway, and upon approval of its proposed location by NMFS, the USFWS, MDMR and PIN, file, for Commission approval, a plan for the fishway. This filing shall include but not be limited to: (1) the location and design specifications of the passage facilities; (2) a schedule for installing the facilities and completing initial testing prior to the third upstream eel migration season following the effective date of the Lower Penobscot River Multiparty Settlement Agreement (approximately May 1, 2007); and (3) procedures for operating and maintaining the facilities.

2. The upstream migration period shall be defined as April 1 to November 30 for American eel.

3. Fishways shall be maintained and operated to maximize fish passage effectiveness throughout fish migration period. The licensee shall keep the fishways in proper order and shall keep fishway areas clear of trash, logs, and material that would hinder passage. Anticipated maintenance shall be performed in sufficient time before a migratory period such that fishways can be tested and inspected, and will operate effectively prior to and during the migratory periods.

4. Upstream fish passage for species other than American eel is contingent on actions taken under the Settlement Accord.

(a) If Veazie (P-2403), Great Works (P-2312), and Howland (P-2721) Projects are acquired and removed,³⁸ the licensee shall file an amendment to authorize installation and operation of a fish trapping facility at the Orono project's spillway, as outlined in Attachment A of the MPA. The licensee shall consult with and receive approval from the resource agencies and PIN on the design plans prior to filing with the Commission. Trapped fish will be transferred a short distance (i.e., tailwater below the Orono Dam, main stem Penobscot River at the confluence of the Stillwater Branch).

(b) If Veazie, Great Works, and Howland are not acquired, the licensee will implement the existing NMFS (1995) and DOI (1997) prescription for upstream passage by filing the appropriate license amendments. No later than June 25, 2010, as outlined in Attachment A of the MPA, the licensee shall file for approval by the Commission drawings of permanent upstream fish passage. As part of the filing, the licensee shall include plans to have the facility fully operational within 18 months of the Commission's approval of the design drawings.

5. Fishway design, maintenance, and operational plans (including schedules) for all upstream fish passage facilities shall be developed by the licensee in consultation and cooperation with NMFS, USFWS, PIN, and other fishery agencies (IFW, DMR, and MASC). Functional design and final design plans for all fishways shall be developed in consultation and cooperation with NMFS, USFWS, PIN, and other fishery agencies.

6. The licensee shall include with all fishway plans and schedules, documentation of consultation, copies of agency and PIN comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' and PIN's comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and PIN to comment and to 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.

(C) The following are requirements for monitoring the effectiveness of the fish passage facilities at Orono:

1. Within 12 months of the deadline established for filing design drawings or a plan for a fish passage device, the licensee shall file with the Commission, for approval, a plan to monitor the effectiveness of all the facilities and flows provided pursuant to the above license conditions that will enable the efficient and safe passage of diadromous fish migrating upstream and downstream. The licensee shall prepare the monitoring plan

³⁸ The Howland Project may be partially removed or a fish bypass constructed under the Settlement Accord.

after consultation with NMFS, USFWS, Maine Fisheries Agencies (IFW, DMR, MASC), the Maine Department of Environmental Protection, and PIN. The results of these monitoring studies shall be submitted to the listed agencies and shall provide a basis for recommending future structural or operational changes at the project.

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

3. The licensee shall include with the plan documentation of agency consultation, copies of agency and PIN comments and recommendations on the plan after it has been prepared and provided to them, and specific descriptions of how the agencies' and PIN's comments are accommodated by the licensee's plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to 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.

4. If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases, are necessary to protect fish resources, the licensee shall first consult with the agencies to develop recommended measures for amelioration and then file its proposal with the Commission for approval. Any such changes will be subject to provisions of Attachment A to the MPA.

(D) Last, the Department hereby reserves its authority under Section 18 of the FPA to prescribe such fishways as may be necessary and consistent with Attachment A of the Lower Penobscot River Multiparty Settlement Agreement during the term of the license. This specifically includes authority to prescribe a fish trap, as specified in Attachment A to the MPA upon acquisition of the Veazie, Great Works, and Howland Projects.

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 any 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.

140 FERC ¶ 62,194
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Black Bear Hydro Partners, LLC

Project No. 2710-057

ORDER AMENDING LICENSE AND REVISING ANNUAL CHARGES

(Issued September 14, 2012)

1. On May 18, 2011, Black Bear Hydro Partners, LLC (licensee), filed an application to amend its license for the Orono Project (No. 2710) in order to construct a second powerhouse, raise the impoundment by 0.6 feet, and extend the license term of the project. In addition, the licensee proposes to construct a new downstream fish passage facility and relocate the existing upstream eel passage facility. The application was supplemented on October 7, 2011; January 20, 2012; March 7, 2012; March 14, 2012; and June 5, 8, and 21, 2012. The project is located on the Stillwater Branch of the Penobscot River in Penobscot County, Maine.

Background

2. The license for the Orono Project was issued December 8, 2005.¹ The project consists of: (a) an existing 1,178-foot-long by 15-foot-high dam including a 320-foot-long spillway topped with 2.4-foot-high flashboards; (b) an existing 2.3-mile-long reservoir, which has a surface area of 175 acres at the normal full pond elevation of 72.4 feet National Geodetic Vertical Datum (NGVD); (c) an 866-foot-long concrete penstock; (d) a powerhouse (Powerhouse A) containing four generating units with a total installed generating capacity of 2,780 kW; (e) three existing 325-foot-long, 2.4 kilovolt transmission lines; and (f) appurtenant facilities.

¹ See Order on Offer of Settlement and Issuing New License, 113 FERC ¶ 62,181. The license authorized three 800 to 900-foot-long, 10-foot-diameter penstocks and an installed capacity of 2.332 megawatts. As required by Article 305, the licensee filed revised exhibits to show as-built conditions on April 13, 2009. Although the as-built Exhibit F drawings were approved, the associated Exhibit A was overlooked and the project description and authorized installed capacity were never updated to show as-built project conditions. In this order we consider the as-built project to be existing conditions and revise the project description and annual charges accordingly.

Proposed Action

3. In June 2004, the licensee entered into the Lower Penobscot River Multi-Party Settlement Agreement (Settlement Agreement) with federal and state resource agencies, the Penobscot Indian Nation, several non-governmental organizations, and others. The Settlement Agreement stipulated that three projects within the Penobscot River basin would be decommissioned² and provided the opportunity to increase generation capacity at several other projects in the river basin to make up for the generation capacity lost in the decommissioning of the three projects. The licensee's proposed amendment at the Orono Project is based on the terms of the Settlement Agreement. The licensee simultaneously filed a similar application for a capacity amendment at the Stillwater Project (No. 2712) which is being addressed in a separate order issued today.

A. Proposed Facilities

4. The licensee proposes to construct a second 56-foot-long, 40-foot-wide, 60-foot-high reinforced concrete, corrugated tin, and beam and girder powerhouse enclosing three new 1,246 kW turbine/generator units. The new powerhouse (Powerhouse B) would be located within the existing bypassed reach about 420 feet downstream of the dam and be supplied by a 292-foot-long, 25-foot-wide, 12-foot-high concrete penstock including a surge chamber just upstream of the powerhouse. A new 84-foot-wide, 20-foot-high intake for the proposed powerhouse would be integrated into the existing intake and would share a single 156-foot-wide, 20-foot-high trashrack with 1 inch clear spacing. Powerhouse B would be connected to the distribution system near the existing powerhouse through a new 12.5 kilovolt, 600-foot-long overhead transmission line. The licensee would replace the existing downstream fish passage facility with a new facility that includes bottom and surface entrances and would accommodate a total flow of 153 cubic feet per second (cfs). Finally, the licensee plans to install an upstream trap-and-truck facility, required by ordering paragraphs (D) and (E) of the December 8, 2005 license, while modifying the Orono Project's intake.

B. Proposed Operations

5. The licensee proposes to raise the normal elevation of the Orono Project's reservoir by 0.6 feet, from an elevation of 72.4 to 73 feet NGVD by installing taller flashboards. The impoundment raise would increase the gross storage capacity by 105 acre-feet and would inundate about 4.4 additional acres. The designed failure point of the flashboards would remain at an impoundment elevation of 74.4 feet NGVD to maintain existing elevation conditions during high flows.

² See Order Accepting Surrender of Licenses with Dam Removal and Dismissing Applications for New Licenses, 131 FERC ¶ 62,238 (issued June 16, 2010).

6. The licensee proposes to operate the project in a run-of-river mode and to maintain the reservoir within one foot of the revised normal full pond elevation of 73 feet NGVD. The licensee would reallocate flows between the main stem of the Penobscot River and the Stillwater Branch through operation of its Milford Project (No. 2534), resulting in more water flowing through the Stillwater Branch in order to increase the power generation that would be realized by the proposed amendments at the Stillwater and Orono Projects. The flow reallocation is within the range of operations allowed by the current licenses for the Milford, Stillwater, and Orono Projects.

7. The licensee proposes to continue to maintain the minimum flow required by Article 401 of the license which is 200 cfs. Up to 153 cfs of the minimum flow requirement would be maintained via flow through fish passage facilities. The licensee states that the remainder would be provided through the flashboards or in a manner recommended by the resource agencies. High flows in excess of the hydraulic capacity of the project would spill over the existing flashboards that would be designed to fail when they are overtopped by 1.4 feet of water.

C. License Term Extension

8. As contemplated in the Settlement Agreement, the licensee also proposes to extend the term of the Orono Project license by 3 years so that it would expire in 2048.

D. Proposed Environmental Measures

9. The licensee proposes to construct and operate the project with the following environmental protection, mitigation, and enhancement measures: (1) develop and implement a soil erosion and sediment control plan; (2) develop and implement a blasting plan to address potential effects of construction on fish and aquatic species; (3) implement the Species Protection Plan for Atlantic salmon and the corresponding Atlantic Salmon Passage Study Plan filed June 8, 2012; (4) implement the Sturgeon Handling Plan filed March 7, 2012; (5) implement the Mussel Relocation Plan filed with the amendment application; (6) construct and operate a new downstream fish passage facility consisting of full-depth trashracks with 1-inch-clear spacing and a bypass adjacent to the intake for the proposed new powerhouse which would include surface and bottom entrances; and (7) relocate the upstream eel passage facility adjacent to the new powerhouse.

Consultation

10. Prior to filing its application with the Commission, the licensee consulted with the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs, U.S. Army Corps of Engineers, National Park Service, Penobscot Indian Nation, Maine Department of Environmental Protection (Maine DEP), Maine Department of Conservation, Maine State Historic Preservation Officer (Maine

SHPO), Maine Department of Marine Resources (Maine DMR), Maine Department of Inland Fisheries and Wildlife (Maine DIFW), Maine State Planning Office, Town of Orono, City of Old Town, Penobscot River Restoration Trust, Trout Unlimited, Atlantic Salmon Federation, The Nature Conservancy, Natural Resources Council of Maine, Maine Audubon Society, and American Rivers. The licensee provided these entities with copies of the draft application for comment on October 5, 2010. On October 26, 2010, the licensee held a meeting with the consulted parties to provide them with information and to answer any questions about the proposed amendments.

11. The licensee received comments on its draft application from NMFS, FWS, Penobscot Indian Nation, Maine SHPO, Maine DMR, Maine DEP, and Maine Department of Conservation. The licensee discussed the comments and study requests it received with these entities between October 2010 and April 2011, and addressed comments and recommendations in the final amendment application.

Public Notice and Environmental Assessment

12. On March 30, 2012, the Commission issued public notice that the amendment application was accepted for filing, that the project was ready for environmental analysis, and soliciting comments, recommendations, terms and conditions, and prescriptions. In response, notices of intervention were filed by the Department of the Interior, NMFS, Maine DMR, and Maine DIFW. Motions to intervene were filed by the Penobscot Indian Nation and Douglass H. Watts.³ Comments were filed by the Department of the Interior, NMFS, the Penobscot Indian Nation, the licensee, the Town of Orono, the City of Old Town, Maine Audubon, Trout Unlimited, American Rivers, The Nature Conservancy, the Penobscot River Restoration Trust, as well as several congresspersons. The majority of the commenters expressed support for the amendment application as being consistent with the Settlement Agreement. No entity opposed the licensee's proposed amendment application.

13. On July 25 and 26, 2012, Commission staff visited the projects and met with the licensee, FWS, NMFS, Penobscot Indian Nation, and the Penobscot River Restoration Trust. On July 9, 2012, Commission staff issued an Environmental Assessment (EA) for the proposed amendments at the Stillwater and Orono Projects. Comments on the EA were filed by NMFS, FWS, Maine DMR, and the licensee.

14. Both NMFS and FWS generally had concerns that some staff conclusions in the EA regarding fisheries resources were unsubstantiated due to a lack of information and ongoing concerns about fish passage effectiveness. NMFS and FWS stated that any conclusions regarding the effectiveness or adequacy of the fish passage facilities can only

³ Mr. Watts' late intervention was granted by notice issued June 15, 2012.

be made after effectiveness studies have been completed. Maine DMR stressed the importance of the monitoring studies to determine whether fish passage is effective.

15. NMFS commented that the results of the computational fluid dynamics modeling conducted by the licensee should be taken into account in the design of the fish passage facilities at the Orono Project. NMFS and Maine DMR state that the facilities need to provide a sweeping velocity and a better attraction flow field to enable fish to find the downstream passage entrance.

16. NMFS stated that the finding of no significant impact should be better documented in the analysis and that the EA should address the effects of climate change. NMFS also expressed other concerns regarding project operations and how the license would monitor run-of-river operations and minimum flow requirements.

17. In addition to its comments regarding fish passage, FWS stated that the licensee would have to consult with FWS for any required blasting in the tailrace.

18. In its comments on the EA, the licensee stated that the construction and operation of the upstream trap-and-truck facility is only required if three other projects within the basin have been acquired and removed or bypassed by the Penobscot River Restoration Trust per NMFS' section 18 fishway prescriptions included in the project's license. As all of these projects have not yet been removed or bypassed, the licensee stated that it is not yet required to install the trap-and-truck facility at this project and ongoing consultation regarding the final design of the upstream fish passage facility should not delay Commission action on the proposed amendment.

19. All comments, recommendations, and motions to intervene have been fully considered in determining whether, and under what conditions, to issue this amendment of license.

Water Quality Certification

20. Under section 401(a) of the Clean Water Act (CWA),⁴ the Commission may not authorize construction or operation of a hydroelectric project that may result in a discharge from the project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.⁵

⁴ 33 U.S.C. § 1341(a) (2006).

⁵ 33 U.S.C. § 1341(d) (2006).

21. On May 19, 2011, the licensee applied to the Maine DEP, under section 401 of the CWA, for a water quality certification for the proposed amendment. The Maine DEP issued an amended section 401 water quality certification which was filed with the Commission on August 23, 2011. The amended water quality certification is incorporated into the license by ordering paragraph (F) and attached to this order as Appendix A.

Threatened and Endangered Species

22. Section 7(a)(2) of the Endangered Species Act of 1973,⁶ 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 their designated critical habitat. Listed species in the project area include: the Gulf of Maine Distinct Population Segment of Atlantic salmon; shortnose sturgeon; and Atlantic sturgeon.

23. On March 7, 2012, the licensee provided the Commission with its Biological Evaluation (BE) regarding the effects of the proposed amendment on these species. The licensee filed a revised BE on June 8, 2012, which included a revised Species Protection Plan and an Atlantic Salmon Passage Study Plan. The BE determined that the actions proposed at the Orono Project are likely to adversely affect Atlantic salmon due to the potential for causing injury or mortality to a small number of downstream migrating smolts. The BE concluded that the proposed Species Protection Plan and Atlantic Salmon Passage Study Plan would minimize any adverse impacts.

24. The BE also determined that the actions required at the Orono Project are likely to adversely affect shortnose and Atlantic sturgeon due to potential harassment associated with the handling and relocation of sturgeon collected at the trap-and-truck facility or when flows in the bypassed reach are reduced when flashboards are being reinstalled. The BE concluded that these effects would be minimized by the proposed Sturgeon Handling Plan.

25. By letter issued April 27, 2012, Commission staff adopted the licensee's BE as its biological assessment and requested that NMFS initiate formal consultation on the actions contained in the licensee's proposed amendment application. NMFS received the request and initiated formal consultation on May 3, 2012. In addition, on June 27, 2012, Commission staff forwarded the Atlantic Salmon Passage Study Plan to NMFS for inclusion in the formal consultation process.

⁶ 16 U.S.C. § 1536(a) (2006).

26. On August 31, 2012, NMFS filed its Biological Opinion (Opinion) for the proposed amendment application which concluded that the proposed actions in the amendment application may adversely affect but are not likely to jeopardize the continued existence of the Gulf of Maine Distinct Population Segment of Atlantic salmon, shortnose sturgeon, and Atlantic sturgeon. Furthermore, the Opinion concluded that the proposed action would not adversely modify or destroy critical habitat designated for Atlantic salmon. In its Opinion, NMFS issued an incidental take statement and included reasonable and prudent measures and terms and conditions to minimize and monitor incidental take of Atlantic salmon, shortnose sturgeon, and Atlantic sturgeon. The terms and conditions include measures regarding: construction activities; erosion and sedimentation control; fish salvage; reporting of interactions with endangered species; fish passage design; fish passage performance standards and effectiveness monitoring; and access to project facilities. The terms and conditions, as they pertain to the Orono Project, are incorporated into the license by ordering paragraph (G), attached to the license as Appendix B, and referenced in specific articles, where appropriate.

National Historic Preservation Act

27. Under section 106 of the National Historic Preservation Act,⁷ and its implementing regulations,⁸ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects. In the event that Indian tribe properties are identified, section 106 requires that the Commission consult with any potentially interested Indian tribes that might attach religious or cultural significance to such properties.

28. The licensee consulted with the Maine SHPO and Penobscot Indian Nation and by letter dated October 13, 2010 (filed with the amendment application), the Maine SHPO stated that no historical or archeological properties would be affected by the proposed action. The Penobscot Indian Nation did not identify any concerns regarding historic properties in the project area.

29. Article 405 of the license contains a discovery provision. Although no cultural resources have been previously identified in the vicinity of the proposed project area,⁹ the

⁷ 16 U.S.C. § 470 (2006) *et seq.*

⁸ 36 C.F.R. Part 800 (2012).

⁹ *See* EA at 8 and 88-90.

potential does exist for the discovery of cultural resources during the proposed construction, operation, and maintenance activities. If a previously undiscovered cultural resource site is identified during construction, operation, and/or maintenance of the facilities, the licensee is reminded that it should immediately cease all work at the site and follow the provisions as set forth in Article 405.

Section 18 Fishway Prescriptions

30. Section 18 of the Federal Power Act (FPA)¹⁰ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate.

31. Ordering paragraph (E) of the December 8, 2005 Orono Project license requires the implementation of fishway prescriptions from NMFS and Interior which include: downstream passage of all fish species, upstream passage of American eel, and upstream passage for species other than American eel. These existing prescriptions would remain requirements of the license.

32. For the proposed amendment, NMFS and FWS, by letters filed May 23, 2012, and May 29, 2012, respectively, request that a reservation of authority to prescribe fishways under section 18 be included in any license amendment issued for the project. Consistent with Commission policy, existing Article 402 reserves the Commission's authority to require fishways that may be prescribed by the Secretaries of Interior or Commerce for the Orono Project in the future.

Magnuson-Stevens Fishery Conservation and Management Act

33. The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with NMFS on all actions that may adversely affect Essential Fish Habitat (EFH).

34. The licensee filed its assessment of effects on EFH on October 7, 2011. Commission staff concluded that amending the project licenses would not likely adversely affect EFH for Atlantic salmon. In comments filed August 8, 2012, NMFS stated that it disagrees with staff's conclusion because the construction and operation of the new powerhouse would result in adverse alteration of essential fish habitat; however, NMFS found that the proposed mitigation measures are sufficient and indicated that no further consultation is required.

¹⁰ 16 U.S.C. § 811 (2006).

Recommendations Pursuant to Section 10(j) of the FPA

35. Section 10(j) of the FPA¹¹ requires the Commission to include license conditions based upon recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,¹² to "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project. In response to the Commission's March 30, 2012 notice, NMFS and Interior filed on May 23, 2012, and May 29, 2012, respectively, a total of six recommendations under section 10(j) of the FPA. These recommendations include: (1) operate the project run-of-river; (2) develop fish passage effectiveness plans; (3) provide for agency review of fishway design, effectiveness plans, and operation and maintenance plans; (4) provide project access to NMFS to monitor the construction and operation of fish passage facilities; (5) monitor flows in the Stillwater Branch of the Penobscot River; and (6) define the downstream migration seasons for various fish species. Of NMFS' and Interior's six recommendations, we consider the first two of them to fall within the scope of section 10(j). Recommendations (3) through (6) fall outside the scope of section 10(j) because they are not specific measures to protect, mitigate, or enhance fish and wildlife resources and, therefore, we consider them below under section 10(a) of the FPA.

36. NMFS and FWS recommend the project operate in run-of-river mode. Run-of-river operation is a condition of the amended water quality certification and, therefore, a condition of the license as incorporated by ordering paragraph (F).

37. NMFS and FWS recommend the licensee develop an upstream and downstream fish passage effectiveness plan at the project. Article 410 requires the license to revise and implement the proposed Species Protection Plan and Atlantic Salmon Passage Study Plan which include the monitoring and evaluation of the upstream and downstream fish passage effectiveness for Atlantic salmon (see discussion below). We also add Articles 411 and 412 which require the monitoring and evaluation of fish passage effectiveness for other species.

Recommendations Pursuant to Section 10(a) of the FPA

38. Section 10(a) of the FPA¹³ requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or

¹¹ 16 U.S.C. § 803(j) (2006).

¹² 16 U.S.C. §§ 661 (2006) *et seq.*

¹³ 16 U.S.C. § 803(a)(1) (2006).

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, recreation, and other purposes.

39. The licensee's proposed environmental measures are described above. Below we discuss modifications to these measures as well as measures recommended by agencies, commenters, stakeholders, and Commission staff. We also address the four remaining recommendations made by NMFS under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. These four recommendations are discussed and adopted in sections A, B, D, and F.

A. Agency Review of Plans

40. NMFS recommends the licensee allow at least 30 days for the resource agencies to review draft fishway designs, effectiveness plans, and operation and maintenance plans. This recommendation is implemented through the consultation specifications in each article requiring the particular plan.

B. Operation and Flow Compliance Monitoring

41. The proposed amendment would change the means by which the licensee complies with the operating requirements of the license. NMFS recommended that the licensee monitor flow in the Stillwater Branch of the Penobscot River. In addition, in NMFS' comments on the EA, questions arose regarding how the licensee would comply with the flow and operational requirements of the license during maintenance activities;¹⁴ requirements for reporting deviations from the flow and operational requirements; and how minimum flow volumes are calculated and/or verified. In the EA, Commission staff found that revising the Operation and Flow Compliance Monitoring Plan¹⁵ required by Article 401 would enable the Commission to determine compliance with license requirements.¹⁶ A revised plan would also address NMFS' recommendations and the

¹⁴ Staff notes that while the Water Quality Certification allows for the temporary modification of run-of-river operations during "approved maintenance activities," no such modification is permitted for the minimum flow requirement or fish passage flow requirements during the defined migration periods.

¹⁵ See Order Approving Operation and Flow Compliance Monitoring Plan Pursuant to Article 401, 117 FERC ¶ 62,004 (issued October 3, 2006).

¹⁶ See EA at 38-39.

concerns mentioned above. Consequently, ordering paragraph (E) amends Article 401 to require the licensee to file a revised Operation and Flow Compliance Monitoring Plan to replace the project's approved plan.

C. Dissolved Oxygen Monitoring

42. In the EA, Commission staff concluded that increasing the hydraulic capacity of the generating facilities at the Orono Project would reduce spill volumes (even with increased flow in the Stillwater Branch). Reduced spill volumes could contribute to dissolved oxygen (DO) concentrations downstream of the project being below the state water quality standards during the summer and early fall.¹⁷ Article 408 requires the licensee to develop and implement a plan to conduct DO monitoring downstream of the Orono Project for at least the first year of project operation under the amended license.

D. Final Design of Fish Passage

43. The licensee stated that final fish passage designs would be completed in consultation with the resource agencies and Penobscot Indian Nation. NMFS recommended that the downstream migration period be defined as April 1 to June 30 and November 1 to December 15 for Atlantic salmon, July 1 to December 31 for American shad and alewife, August to December 31 for blueback herring, and August 15 to November 15 (or other time periods determined when adequate information is available, and during spring runs that may occur) for American eel. In addition, the terms and conditions of NMFS' Opinion require the licensee to consult with NMFS on fish passage design plans at the 30, 60, and 90 percent design phases.

44. The fish migration periods recommended by NMFS are defined in license Article 406 and required by the existing Section 18 fishway prescriptions. The licensee does not propose any change to these migration periods.

45. Article 409 requires the licensee to finalize the design of the downstream fishway and upstream trap and truck facilities in consultation with NMFS, FWS, Maine DMR, Maine DIFW, and Penobscot Indian Nation on fish passage design plans at the 30, 60, and 90 percent design phases. In addition we require the licensee to finalize the fish passage facilities design in consultation with these entities and allow them a minimum of 30 days to review and comment prior to filing the final designs for Commission approval.

46. Article 409 also requires the licensee to provide a report on the computational fluid dynamics modeling that was conducted to agencies within 30 days from the date of this order. The licensee's final design should be based on the results of the modeling and

¹⁷ See EA at 39-42.

consider alternative measures to improve flow velocities and attraction to the downstream bypass as recommended by NMFS and Maine DMR.

47. In its comments on the EA, the licensee stated that the construction of the upstream trap-and-truck facility is not yet required. Because the facility would be integrated into the intake of Powerhouse B, and is a measure to protect and mitigate impacts of the new and existing powerhouses on fisheries resources, we are requiring the licensee to construct the facility so that it is operational beginning the first upstream passage season following commencement of operation of Powerhouse B.

E. Fish Passage Effectiveness

48. Many of the comments on Commission staff's EA stressed the importance of monitoring and evaluating the effectiveness of the fish passage facilities to ensure the safe and effective passage of fish at the project. In addition, the terms and conditions of the Opinion require certain measures regarding fish passage effectiveness.

49. Conditions of the Water Quality Certification and existing fishway prescriptions (incorporated into the December 8, 2005 license by ordering paragraphs (D) and (E) respectively) require the licensee to file a plan to monitor the effectiveness of the required fish passage facilities and flows. The plan must be developed in consultation with the resource agencies and Penobscot Indian Nation.

50. The Species Protection Plan and corresponding Atlantic Salmon Passage Study Plan, filed June 8, 2012, were proposed by the licensee to establish performance standards for fish passage facilities and to monitor and evaluate the effectiveness of fish passage facilities with respect to Atlantic salmon. The proposed plans are inconsistent with several terms and conditions of the Opinion including the requirements to (1) develop a plan to study downstream kelt passage for three years and (2) meet the fish passage performance standards on an annual basis (rather than on an average of three years as proposed by the licensee). Therefore, we are adding Article 410¹⁸ to the license to require the licensee to revise the above plans to incorporate the terms and conditions of the Opinion. The plans should be revised in consultation with the resource agencies and Penobscot Indian Nation and filed for Commission approval.

¹⁸ On March 7, 2012, the licensee filed proposed license articles which correspond to the provisions of the Species Protection Plan. We note that an article requiring the implementation of the plan serves the same purpose as the proposed articles; in addition, we are requiring the licensee to revise the plans. Therefore, we are not including the proposed articles in this order.

51. In addition, we add Article 411 to require the licensee to file a plan to monitor the effectiveness of the new fishways for diadromous species other than Atlantic salmon.

52. In the EA, Commission staff concluded that the proposed new powerhouse would change the location of the existing upstream eel passage facility and has the potential to change the location where upstream migrating eels would congregate.¹⁹ Therefore, we add Article 412 to require the licensee to develop an Eel Passage Location Study Plan, in consultation with the resource agencies and the Penobscot Indian Nation, to study and verify where eels are congregating in order to locate the new upstream eel passage facility and ensure successful upstream passage. Article 412 also requires the licensee to develop a plan for the design, location, and operation of the fishway based on the results of the location monitoring. In addition, Article 412 requires the licensee to revise the approved American Eel Upstream Assessment Plan,²⁰ as it pertains to the Orono Project, in order to evaluate the effectiveness of the upstream American eel passage facility.

F. Project Access

53. The NMFS also recommends that one of its engineers be allowed access to monitor the construction of fish passage facilities. This is being implemented through Article 413.

G. Bald Eagles

54. In the EA, Commission staff concluded that there are bald eagles that use habitat and are nesting in the project area and therefore, could be harmed (electrocuted) by the proposed new transmission lines.²¹ Article 414 requires the licensee to construct new transmission lines in accordance with Avian Power Line Interaction Committee guidelines in order to minimize raptor electrocutions.

H. Revegetate following Construction

55. Because much of the construction would take place along previously disturbed areas or areas used in construction would become permanent project features, the licensee does not anticipate the need to revegetate any areas following construction. However, in the EA, Commission staff concluded that the disturbance caused by construction activities could create ideal conditions for the colonization and spread of invasive plant

¹⁹ See EA at 57-58.

²⁰ See Order Approving American eel Upstream Assessment Plan under Articles 408, 409, 46 and Paragraph (E), 125 FERC ¶ 62,060, (issued October 16, 2008).

²¹ See EA at 77-78.

species. Staff concluded that measures should be taken to prevent the introduction and spread of invasive species in areas disturbed by construction activities. Article 416 requires the licensee to develop and implement a plan to prevent the spread of invasive species and, if necessary, to revegetate disturbed areas with native species. The plan should be developed in consultation with Maine DIFW and Maine Department of Conservation and filed with the Commission prior to commencing construction activities.

I. Sensitive Species Protection

56. In the EA, Commission staff concluded that a state-listed species of concern, the hyssop-leaved fleabane, occurs in the project area and has the potential to be adversely impacted during construction.²² Article 417 requires the licensee to develop a Sensitive Species Protection Plan to protect these plants.

J. Blasting Plan

57. The licensee proposes to develop and implement a blasting plan in order to avoid and minimize the potential effects of construction on fish and wildlife resources. However, the licensee did not indicate whether it would consult with the resource agencies while developing the plan. Article 306 requires the license to consult with Maine DIFW, Maine Department of Conservation, and FWS in the preparation of a blasting plan to avoid or minimize any adverse impacts to fish and wildlife resources, including bald eagles.

K. Fish Salvage during Construction

58. In the EA, Commission staff concluded that fish could potentially become trapped and stranded within the cofferdams and dewatered areas during construction.²³ In addition, the terms and conditions of NMFS' Opinion require the licensee to consult with NMFS regarding fish salvage prior to commencing construction. Article 415 requires the licensee to develop a Fish Salvage Plan to be implemented during construction activities. Cofferdam construction or dewatering of areas should not begin until the plan is filed with the Commission.

L. Sturgeon Handling Plan

59. The licensee filed a Sturgeon Handling Plan on March 7, 2012, which includes measures for the handling of any sturgeon that are found in the trap-and-truck facility. Ordering paragraph (I) approves the plan and requires the licensee to incorporate the

²² See EA at 75-76.

²³ See EA at 48.

relevant incidental take terms and conditions of the Biological Opinion. In addition, the licensee is required to file the annual reports described in the plan with the Commission by December 31 of each year.

M. Mussel Relocation Plan

60. The licensee filed a Mussel Relocation Plan with its application to detail methods for the salvage and relocation of mussels found in dewatered areas. Ordering paragraph (J) approves this plan and requires its implementation.

Other Issues

61. Most of the comments received in response to the EA are resolved in the requirements and discussion above. Outstanding comments are addressed in this section.

62. NMFS and FWS state that absent monitoring results, it is unclear how staff can conclude (in the EA) that the fish passage facilities would ensure minimal delay, mortality, or other adverse effects to fisheries as a result of the proposed amendments. While staff agrees that the rate of mortality, delay, passage, etc, would not be fully known until monitoring and effectiveness studies are complete, the license and this order require these facilities to be effective. If the studies identify that these facilities are not effective, the license and this order require the licensee, in consultation with the resource agencies and Penobscot Indian Nation, to determine what actions are necessary to remedy the issue. Therefore, staff can reasonably conclude that the facilities and associated requirements to monitor the effectiveness and to take action if facilities are found to be ineffective would ensure that these facilities minimize fisheries-related impacts of the project.

63. NMFS states that the EA should address climate change effects and specifically how flow allocations and water temperature may be affected by these changes and any implications for fish passage. Attempting to predict future flow scenarios that may occur due to climate change would be too speculative given the state of the science at this time. The licensee is required to maintain certain minimum flows and fish passage flows and develop a plan to monitor those flows. The plan must include a provision to timely report any deviation from those flows to the resource agencies and the Commission. In addition, the licensee is required to monitor fish passage effectiveness over the life of the license. If there is a future need to modify project operations or facilities to accommodate changes to the flow regime or fish passage facilities because of climate change or other factors, it would be identified in the context of these requirements and the licensee would be required to file an application to amend the project license to modify any approved project facilities or operations.

Comprehensive Plans

64. Section 10(a)(2)(A)²⁴ 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 waterways affected by the project.²⁵ Five plans address resources relevant to the Orono Project.²⁶ No conflicts were found.

Applicant's Plans and Capabilities

A. Conservation Efforts

65. Section 10(a)(2)(C) of the FPA requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost effectively, taking into account the published policies, restriction, and requirements of state regulatory authorities.

66. The licensee is an independent power producer, not an electric utility, and, as such, is not required to address the energy efficiency improvement programs as required by Section 10(a)(2) of the FPA.

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

67. Commission staff has reviewed the licensee's management, operation and maintenance of the Orono Project pursuant to the requirements of 18 C.F.R. Part 12 of the Commission's regulations and the Commission's Engineering Guidelines and periodic Independent Consultant Safety Inspection Reports. We have determined that the proposed amendment should not prevent the licensee from safely managing, operating, and maintaining the project.

Project Economics

68. In determining whether to grant the license amendment, which would increase the project's total installed capacity, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead*

²⁴ 16 U.S.C. § 803(a)(2)(A) (2006).

²⁵ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2012).

²⁶ See EA at 104 for a list of relevant comprehensive plans.

Corporation,²⁷ the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license amendment issuance date. The basic 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 of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license amendment.

69. Commission staff applied this analysis to the proposed Orono amendment. The proposed changes would result in an increase in annual generation of approximately 32,000 megawatt-hours (MWh). When the estimate of average annual generation increase is multiplied by the regional estimated alternative energy value of \$35.68/MWh, the total value of the Orono Project's additional energy would be \$1,728,970 annually. As proposed by the licensee with staff recommended measures and mandatory conditions, the levelized annual cost of implementing the proposed actions would be \$1,653,050.²⁸ To determine whether the proposal is economically beneficial, the cost of the proposal is subtracted from the value of the energy gains. Therefore, the benefit of the licensee's proposal, including total capital costs and generation benefits, would be approximately \$75,920 annually.

Comprehensive Development

70. Sections 4(e) and 10(a)(1) of the FPA,²⁹ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment would be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to issue this license amendment, and the terms and conditions included herein, reflect such consideration.

71. The EA for the licensee's proposal contains background information, analysis of impacts, and support for related license articles. The project would be safe if operated and maintained in accordance with the requirements of the license.

²⁷ 72 FERC ¶ 61,027 (1995).

²⁸ Assuming a 20 year financing period with an interest rate of six percent.

²⁹ 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

72. Based on staff's independent review and evaluation of the project, recommendations from resource agencies, and the no-action alternative, as documented in the EA, we have selected the licensee's proposal, with the staff-recommended measures, and find that it is best adapted to a comprehensive plan for improving or developing the Penobscot River.

73. We selected this alternative because: (1) issuance of the amendment would serve to maintain a beneficial and dependable source of electric energy; (2) the project with an increased installed capacity of 3,738 kW, would eliminate the need for an equivalent amount of fossil fuel produced energy and capacity, which helps conserve these nonrenewable resources and decreases atmospheric pollution; and (3) the proposed and staff-recommended environmental measures would protect project resources.

Administrative Conditions

A. Annual Charges

74. The licensee proposes to increase the installed capacity at the Orono Project by 3,738 kW. The Commission collects annual charges from licensees for administration of Part I of the FPA. These charges are based on the project's authorized installed capacity and the amendment of such requires the revision of the project's annual charges under Article 201 in each license. In accordance with 18 C.F.R section 11.1(c)(5) of the Commission's regulations, the assessments of annual charges for the additional capacity starts on the date of commencement of construction of such capacity. As such, Article 310 requires the licensee to file a report stating the date of commencement of construction of the authorized additional capacity.

B. Project Description

75. The licensee submitted, with its May 18, 2011 amendment application, a revised Exhibit A that describes the project. The revised Exhibit A conforms to the Commission's rules and regulations and is approved in ordering paragraph (H).

C. Exhibit Drawings

76. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. The licensee included two revised and five new Exhibit F drawings with the amendment application. These drawings show the proposed powerhouse, intake, penstock, and fish passage facilities. Staff has reviewed these Exhibit F drawings and determined that they conform to the Commission's regulations and will be approved by ordering paragraph (K). Article 206 will require the licensee to file the approved drawings in electronic and aperture card format.

77. The licensee did not submit a revised Exhibit G drawing with the application as it determined it to be unnecessary because the project boundary was not changing. However, the Commission's regulations state an Exhibit G must show the relative locations and physical interrelationships of principal project works and other features described in the Exhibit A. The proposed powerhouse and associated structures are principal project works, described in the Exhibit A, and should accordingly be shown on the Exhibit G drawings. Therefore, Article 207 will require the licensee to file, for Commission approval, a revised Exhibit G drawing(s) showing the proposed structures.

78. In addition, Article 308 requires the licensee to submit as-built Exhibits A, F and G, as appropriate, to reflect the construction of the facilities approved in this order, within 90 days following the completion of construction activities.

D. Review of Final Plans and Specifications

79. Article 306 requires the licensee to provide the Commission's Division of Dam Safety & Inspections-New York Regional Office (D2SI-NYRO) with final contract drawings and specifications – together with a supporting design report consistent with the Commission's engineering guidelines. Article 307 requires the licensee to provide the Commission's D2SI-NYRO with cofferdam construction drawings. Article 309 requires the licensee to notify the Commission's D2SI-NYRO as soon as possible if changes to project facilities or operations are being proposed as a result of environmental requirements.

E. License Term

80. Section 15(e) of the FPA³⁰ provides that a license should be issued for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.

81. A new license was issued for the Orono Project on December 8, 2005, for a period of 40 years because it required a moderate amount of construction and environmental measures. In its application, the licensee proposes to extend the term of the Orono Project license by 3 years so that it would expire in 2048. Adding 3 years to the license term would result in a total license term of 43 years. As described above, the proposed amendment constitutes significant construction and environmental measures.

³⁰ 16 U.S.C. § 808(e).

82. In addition, a 3-year extension will serve to coordinate the expiration of this license with the expiration of the Stillwater Project license. This is consistent with Commission policy regarding the coordination of expiration dates of licenses of projects located in the same river basin.³¹ Coordination of the expiration dates of the Stillwater and Orono Projects will make it possible to maximize future consideration of cumulative impacts of the two projects at the time of license expiration. Therefore, the license term is being extended by 3 years.

Conclusion

83. Commission staff concludes that the proposed amendment for the Orono Project, with the mitigation measures required by this order, would not constitute a major federal action significantly affecting the quality of the human environment. Therefore, the amendment application will be granted, as considered herein.

The Director orders:

(A) The license for the Orono Project No. 2710 is amended as provided by this order, effective the day this order is issued.

(B) The term of the license for the Orono Project No. 2710 is extended to March 31, 2048.

(C) Ordering paragraph (B) of the license is revised, in part, to read as follows:

(2) Project works consisting of: (1) an existing 1,178-foot-long by 15-foot-high dam including a 320-foot-long spillway topped with 3-foot-high flashboards; (2) an existing 2.3-mile-long reservoir, which has a surface area of 180 acres at the normal full pond elevation of 73 feet National Geodetic Vertical Datum; (3) one 866-foot-long, 20-foot-wide, 12-foot-high concrete penstock supplying water to Powerhouse A; (4) one 292-foot-long, 25-foot-wide, 12-foot-high concrete penstock supplying water to Powerhouse B; (5) Powerhouse A containing four generating units with a total installed generating capacity of 2,780 kW; (6) Powerhouse B containing three generating units with a total installed capacity of 3,738 kW (7) three 325-foot-long, 2.4-kilovolt and one 600-foot-long, 12.5-kilovolt transmission lines; and (6) appurtenant facilities.

(D) Article 201 of the license is revised to read as follows:

The licensee shall pay the United States the following annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the

³¹ 18 C.F.R. § 2.23.

purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is as follows:

- a. 2,780 kilowatts based upon the currently existing capacity.
- b. 6,518 kilowatts upon commencement of construction of the additional capacity authorized in this order.

(E) Article 401 is deleted and replaced in its entirety with the following:

Article 401. Operation and Flow Compliance Monitoring Plan. Within 9 months of issuance of this order, the licensee shall file, for Commission approval, a revised Operation and Flow Compliance Monitoring Plan to replace the existing approved plan. The Operation and Flow Compliance Monitoring Plan shall be developed in consultation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Department of Environmental Protection.

The plan shall include the following: (1) a detailed description of how the impoundment level, minimum flows, generation flows, and inflows will be measured or calculated in order to comply with the requirements of the license; (2) a maintenance plan to ensure that the methods remain accurate over time; (3) a provision to make flow and impoundment elevation data publicly available; (4) a description of how minimum flows will be maintained at all times and at all impoundment elevations; (5) a description of how fish passage flows will be provided during the passage seasons and at all impoundment elevations; (6) a list and description of maintenance activities which may result in the temporary modification of run-of-river operation, including estimates for the timing, frequency and duration that these activities occur; (7) a provision to notify the Commission, resource agencies, and Penobscot Indian Nation when deviations from license requirements occur; and (8) a provision to provide reports and data to the resource agencies and the Penobscot Indian Nation, the level of detail and timing/frequency of reporting to be determined in consultation with these entities.

Following the development of the plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and protect environmental resources.

The licensee shall continue to implement the approved Operation and Flow Compliance Monitoring Plan until the revised plan is approved by the Commission.

(F) The license shall be subject to the conditions submitted on August 23, 2011, by the Maine Department of Environmental Protection under section 401(a)(1) of the Clean Water Act, 33 U.S.C. §1431(a)(1) (2006), as those conditions are set forth in Appendix A to this order.

(G) The license shall be subject to the incidental take terms and conditions of the Biological Opinion, filed on August 31, 2012, as they pertain to the Orono Project, submitted by the National Marine Fisheries Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix B to this order.

(H) The Exhibit A filed with the amendment application on May 18, 2011, superseding the previous Exhibit A, is approved and made part of the license.

(I) The licensee shall implement the Sturgeon Handling Plan, filed March 7, 2012, incorporating the relevant incidental take terms and conditions of the Biological Opinion. The licensee shall file the annual reports described in the plan and required by the Biological Opinion, with the Commission by December 31 of each year.

(J) The licensee's Mussel Relocation Plan, filed with the amendment application on May 18, 2011, is approved and shall be implemented upon commencement of construction.

(K) The following exhibit drawings filed on May 18, 2011, for the Orono Project conform to the Commission's rules and regulations and are approved and made part of the license. The superseded drawings are deleted from the license.

EXHIBIT	FERC DRAWING No.	SUPERSEDED FERC DRAWING No.	FERC DRAWING TITLE
F-1A	P-2710-1010	P-2710-1009	General Plan
F-1B	P-2710-1011	P-2710-1009	Dam Sections
F-4	P-2710-1012	---	Penstock B Plan and Profile
F-5	P-2710-1013	---	New Intake Plan
F-6	P-2710-1014	---	New Intake Section (Looking West)
F-7	P-2710-1015	---	New Intake Section (Looking East)
F-8	P-2710-1016	---	Powerhouse Mill B Plan and Section

(L) The license is subject to the following additional articles:

Article 206. Approved Exhibit Drawings. Within 45 days of the date of issuance of this order, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

- a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" x 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-2710-1010, etc) shall be shown in the margin below the title block of the approved drawings. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1A etc.), Drawing Title, and date of this order shall be typed on the upper left corner of each aperture card (See Figure 1).

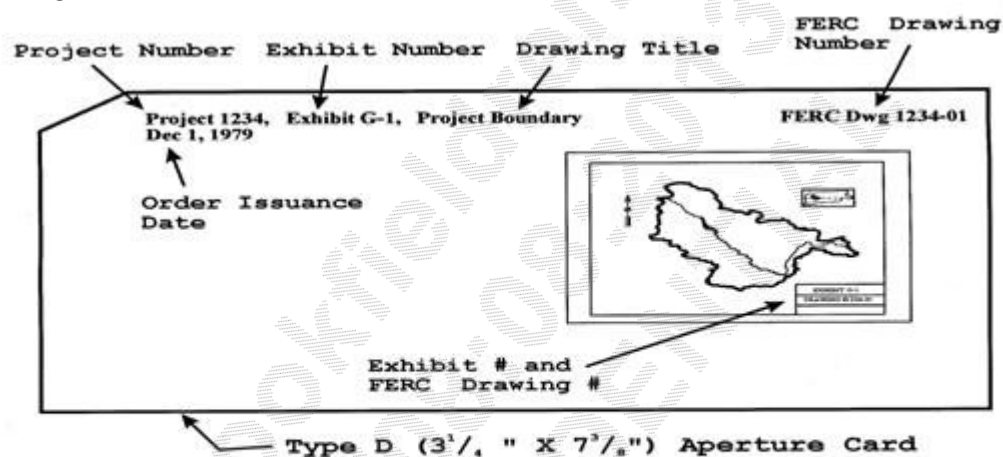


Figure 1 Sample Aperture Card Format

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office.

- b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. Exhibit F drawings must be identified as Critical Energy Infrastructure Information material under 18 C.F.R. § 388.113(c)(2012). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this order, and file extension in the following format [2710-1010, F-1A, General Plan, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
 FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
 RESOLUTION – 300 dpi desired, (200 dpi min)
 DRAWING SIZE FORMAT – 24” x 36” (min), 28” x 40” (max)
 FILE SIZE – less than 1 MB desired

Article 207. Revised Exhibit G Drawings. Within 60 days of the date of this order, the licensee shall file, for Commission approval, revised Exhibit G drawings showing all principal project works. The drawings must conform to 18 C.F.R. §§ 3.39 and 4.41(h).

Article 306. Contract Plans and Specifications. At least 60 days prior to start of construction, the licensee shall submit one copy of its final contract plans and specifications and supporting design report to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, Soil Erosion and Sediment Control Plan, and Blasting Plan. The Soil Erosion and Sediment Control Plan shall be in compliance with the terms and conditions of the Water Quality Certification and the Biological Opinion. The licensee shall develop the Blasting Plan in consultation and cooperation with the Maine Department of Inland Fisheries and Wildlife, Maine Department of Conservation, and the U.S. Fish and Wildlife Service. The plan shall include measures to avoid or minimize any adverse impacts to fish and wildlife resources, including bald eagles. Following the development of the Blasting Plan in consultation and cooperation with the resource agencies, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan shall be filed with the Commission and must include documentation of consultation including copies of any comments received. The licensee may not begin construction until the D2SI – New York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 307. Cofferdam Construction Drawings and Deep Excavations. Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) - New York Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 308. As-Built Drawings. Within 90 days of completion of all construction activities authorized by this license, the licensee shall file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Article 309. Project Modification Resulting From Environmental Requirements. The planning and design of any permanent or temporary modification which may affect the project works or operations shall be coordinated as early as feasible with the Commission's Division Dam Safety and Inspections New York Regional Office (D2SI-NYRO). This includes those modifications resulting from license environmental requirements. The licensee shall notify the D2SI-NYRO of the proposed modification at the beginning of the planning and design phase. This schedule is to allow sufficient review time for the Commission to insure that the proposed work does not adversely affect the project works, dam safety or project operation.

Article 310. Commencement of Construction of Additional Capacity. The licensee shall file a report stating the date of commencement of construction of the additional authorized capacity, within 90 days of such date. Such commencement date will be the effective date for the annual charges under license Article 201b.

Article 408. Dissolved Oxygen Monitoring Plan. Within 1 year of issuance of this order, the licensee shall file, for Commission approval, a Dissolved Oxygen Monitoring Plan. The licensee shall develop the plan in consultation and cooperation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, and Maine Department of Environmental Protection. The plan shall include, but is not limited to, the following: (1) a provision to monitor dissolved oxygen concentrations downstream of the Orono Project from June 1 through September 30 for at least the first year of operation of the new powerhouse; (2) a description of the monitoring location(s) and equipment to be used; and (3) a schedule for providing the data and a report to the resource agencies and the Commission. If the monitoring results indicate that dissolved oxygen standards are not being met, the report shall include measures for addressing low dissolved oxygen conditions.

Following the development of the plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based

on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and to protect environmental resources.

Article 409. Fish Passage Design. The licensee shall construct and operate a new downstream fishway integrated into the new combined intake for the two powerhouses. The licensee shall operate the fishway during the migration seasons defined in the section 18 fishway prescriptions incorporated into the license by ordering paragraph (E) of the December 8, 2005 license order. The licensee shall construct the trap-and-truck facility, required by the section 18 fishway prescriptions and water quality certificate concurrently with the new powerhouse such that both fishways are operational beginning the first passage season following commencement of operation of Powerhouse B. The licensee shall prepare the design and operations and maintenance plan of the new downstream fishway and the trap-and-truck facility in consultation and cooperation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources.

Within 30 days of issuance of this order, the licensee shall provide a report on the computational fluid dynamics modeling to the consulted entities and the Commission. The licensee's final fish passage designs shall take into consideration the results of the modeling and consider alternative measures to improve flow velocities and attraction to the downstream bypass as recommended by the National Marine Fisheries Service and Maine Department of Marine Resources.

Within 4 months of issuance of this order, the licensee shall file, for Commission approval: (1) detailed design drawings for the downstream fishway and trap-and-truck facility; (2) a schedule for installing the facilities so that they are operational during the first passage season that the new powerhouse is operational; and (3) procedures for operating and maintaining the facilities.

The licensee shall consult with the entities identified above at the 30, 60, and 90 percent design phases. After developing the design, schedule, and operations and maintenance procedures in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the final design, schedule, and operations and maintenance procedures to these entities and allow a minimum of 30 days to review and comment. The final design drawings, schedule, and operations and maintenance procedures filed with the Commission shall include documentation of consultation including the modeling report and copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves

the right to make changes to the proposed facilities and schedule in order to ensure compliance with license requirements and protect environmental resources.

The licensee shall not commence construction of the fish passage facilities until the designs have been approved by the Commission. The licensee shall make any modification to constructed facilities required by the approved designs.

Article 410. Species Protection Plan. Within 1 year of issuance of this order, the licensee shall file, for Commission approval, a revised Species Protection Plan, including the Atlantic Salmon Passage Study Plan. The revised plan shall incorporate the terms and conditions of the National Marine Fisheries Service's Biological Opinion and include a schedule for providing data and reports to the consulted entities. The plan shall be revised in consultation with the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, the Penobscot Indian Nation, the Maine Department of Inland Fisheries and Wildlife, and the Maine Department of Marine Resources.

Following the revision of the plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves its authority to require the licensee to modify the plan, project structures, or operations in order to protect and enhance aquatic resources.

Article 411. Fish Passage Effectiveness Plan. Within 1 year of issuance of this order, the licensee shall file, for Commission approval, a plan to monitor and evaluate the effectiveness of the fish passage facilities and flows required by Article 409 for the following species: American shad, alewife, blueback herring, and American eel. The results of these monitoring studies shall provide a basis for recommending future structural or operational changes at the project.

The plan shall be developed in consultation and cooperation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, the Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources. The plan shall include, but not be limited to: (1) the methods, locations, and equipment used for the monitoring; (2) how effectiveness will be quantified and evaluation criteria for determining if passage is adequate; (3) a provision to provide the data and a report to the consulted entities and a schedule for consultation regarding the results; and (4) a schedule for implementing the plan.

Following the development of the plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and protect environmental resources.

If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases, are necessary to protect fish resources, the licensee shall first consult with the entities listed above to develop recommended measures, and then file its proposal with the Commission, for approval. The Commission reserves its authority to require the licensee to modify project structures or operations to protect and enhance aquatic resources.

Article 412. Upstream American Eel Passage. Within 1 year of issuance of this order, the licensee shall file, for Commission approval, an Eel Passage Location Study Plan to assess the appropriate location for the siting of the upstream eel fishway. The plan shall be developed in consultation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources. The plan shall include, but not be limited to: methods for monitoring the river reach immediately below the project for congregating American eel during at least one full upstream migration season following commencement of Powerhouse B operation; and a provision for reporting the results to the consulted entities within 60 days of completing the study.

Within 6 months of completion of the location study, the licensee shall file, for Commission approval, a Fishway Plan. The Fishway Plan shall include but not be limited to: (1) the location and design specifications of the passage facility based on results of the location monitoring study; (2) a schedule for installing the facility so that it is operational as soon as possible, but no later than prior to the third upstream migration season following commencement of operation of the new powerhouse; and (3) procedures for operating and maintaining the facility. No construction of the upstream American eel fish passage facilities shall begin until the licensee is notified by the Commission that the plan is approved.

Within 90 days of a Commission order approving the Fishway Plan the licensee shall file, for Commission approval, a revised American eel Upstream Assessment Plan, to include a provision to monitor and evaluate the effectiveness of the relocated upstream American eel passage facility.

Following the development of the Eel Passage Study Location Plan, Fishway Plan, and revised American eel Upstream Assessment Plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plans to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plans filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filings. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plans in order to ensure compliance with license requirements and protect environmental resources.

Article 413. Project Access. The licensee shall provide access to project lands and project works, including fish passage facilities, to representatives of the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources.

Article 414. Raptor Electrocution Protection. The licensee shall construct new transmission lines in accordance with Avian Power Line Interaction Committee guidelines, “*Suggested Practices for Raptor Protection – State of the Art in 2006*,” in order to minimize raptor electrocutions.

Article 415. Fish Salvage Plan. Prior to commencing construction of the cofferdams or dewatering of any areas, the licensee shall file, with the Commission, a Fish Salvage Plan to be implemented during construction activities. The plan shall be developed in cooperation and consultation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Marine Resources. Cofferdam construction or dewatering of areas shall not begin until the plan is filed with the Commission.

The plan shall incorporate relevant terms and conditions from the National Marine Fisheries Service’s Biological Opinion and include, but is not limited to: (1) procedures for monitoring dewatered areas for stranded fish; (2) procedures for salvaging any stranded fish and transferring them to a safe area for release; and (3) a provision to report any stranded fish and actions taken to the resource agencies and the Penobscot Indian Nation.

Following the development of the plan in consultation with the resource agencies and Penobscot Indian Nation, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation

including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies or Penobscot Indian Nation, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and protect environmental resources.

Article 416. *Revegetation and Invasive Species Control Plan.* Prior to commencing construction activities, the licensee shall file, with the Commission, a Revegetation and Invasive Species Control Plan. The plan shall be developed in consultation with Maine Department of Inland Fisheries and Wildlife and Maine Department of Conservation and shall include, but is not limited to: (1) a provision to revegetate disturbed areas using native species; (2) a provision to use weed-free materials for erosion prevention and sediment control measures; (3) measures to prevent the transportation of weeds into the project area on construction vehicles and; (4) conducting post-construction surveys to identify invasive species in areas disturbed by construction activities and implementing measures to control any if found.

Following the development of the plan in consultation with the resource agencies, the licensee shall provide a copy of the proposed plan to these entities and allow them a minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and protect environmental resources. Construction may not begin until the plan is filed with the Commission.

Article 417. *Sensitive Plant Protection Plan.* Prior to commencing construction activities, the licensee shall file, with the Commission, a Sensitive Species Protection Plan in order to protect the hyssop-leaved fleabane. The plan shall be developed in consultation with the Maine Department of Inland Fisheries and Wildlife and the Maine Department of Conservation and shall include measures to: (1) identify and mark areas to be avoided during construction; (2) educate construction contractors and workers to avoid sensitive areas; (3) consult with Maine Department of Inland Fisheries and Wildlife and Maine Department of Conservation to determine if there are low-cost, effective means to recover/transplant affected plants; (4) conduct a post-construction survey for sensitive plants one year following project completion; and (5) determine whether, and at what threshold, additional mitigation would be necessary.

Following the development of the plan in consultation with the resource agencies, the licensee shall provide a copy of the proposed plan to these entities and allow them a

minimum of 30 days to review and comment on the plan. The final plan filed with the Commission shall include documentation of consultation including copies of any comments received. The licensee shall address all comments and recommendations in its filing. If the licensee does not adopt a recommendation from the resource agencies, the licensee shall include its reasons based on project-specific information. The Commission reserves the right to make changes to the plan in order to ensure compliance with license requirements and protect environmental resources. Construction may not begin until the plan is filed with the Commission.

(M) 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.

(N) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2012). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Steve Hocking
Chief, Environmental Review Branch
Division of Hydropower Administration
and Compliance

APPENDIX A

STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

401 WATER QUALITY CERTIFICATION AMENDMENT FOR THE ORONO PROJECT (FERC NO. 2710)

Filed August 23, 2011

1. STANDARD CONDITIONS

The Standard Conditions of Approval for projects under the Maine Waterway Development and Conservation Act, a copy attached.

2. EXISTING CERTIFICATION CONDITIONS

All existing conditions in the water quality certification for the rehabilitation and operation of the Orono Hydroelectric Project, as contained in Department Order #L-21917-33-A-N dated December 14, 2004, including any subsequent amendments, modifications and condition compliances, shall remain in effect, except for Condition 1(A) which is modified to read as follows:

A. Except as temporarily modified by (1) approved maintenance activities, (2) extreme hydrologic conditions, as defined below, or (3) emergency electrical system conditions, as defined below, or (4) agreement between the applicant, appropriate state and/or federal agencies, and the Penobscot Indian Nation, beginning within 60 days of FERC approval of the flow and water level monitoring plan described in Condition I (E) below, or upon such other schedule as established by FERC, the Orono Project shall be operated in a run of river mode, with outflow approximately equal to inflow on an instantaneous basis except for flashboard failure or replacement, and impoundment levels maintained within one foot of full pond (elevation 73.0 feet msl). During times of flashboard failure, the applicant will maintain water levels at or above the spillway crest. During those times when flashboards are being replaced, the applicant will maintain water levels within one foot of the spillway crest.

3. EROSION CONTROL

A. The applicant shall prepare, submit, and implement a final erosion and sedimentation control plan for all approved construction activities. This plan shall

be reviewed by and must receive approval of the Department prior to the initiation of in-stream activities.

- B. In addition to any specific erosion and sedimentation control measures that are included in the plan approved by the Department under Part A of this condition, the applicant and its agents shall take all necessary measures to ensure that their activities do not result in erosion or sedimentation into the river during or following the approved activities.

4. SPOILS DISPOSAL

All spoils removed from the construction area shall be reused or otherwise disposed of in accordance with the Maine Solid Waste Management Regulations.

5. CONCRETE CURING

Concrete shall be precast and cured at least three weeks before placing in the water, or where necessary, shall be placed in forms and shall cure at least one week prior to contact with surface water. No washing of tools, forms, etc. shall occur in or adjacent to the waterway.

6. TEMPORARY FILL SPECIFICATIONS

Temporary fill placed in the waterway or within the 100-year floodway boundaries of the waterway to provide temporary equipment access shall consist of clean granular material free from vegetable matter, lumps or balls of clay and other deleterious substances. That portion passing a 3-inch (No. 200) sieve shall not exceed 10% fines, by weight. Those portions of the fill that come into contact with moving water shall be protected by filter fabric and/or riprap. All temporary fill shall be removed from the waterway following completion of the approved construction activities.

7. MINIMUM FLOW RELEASES

The minimum flow release stipulated in the Department's water quality certification for the Orono Hydroelectric Project (Department Order #L-21917-33-A-N dated December 14, 2004) shall be maintained at all times during and following the approved construction activities.

MAINE WATERWAY DEVELOPMENT AND CONSERVATION ACT
STANDARD CONDITIONS OF APPROVAL APPLICABLE TO ALL PERMITS

1. Limits of Approval. This approval is limited to and includes 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 the review and approval of the Department of Environmental Protection prior to implementation.
2. Noncompliance. Should the project be found, at any time, not to be in compliance with any of the conditions of this approval, or should the permittee construct or operate this project in any way other than specified in the application or supporting documents, as modified by the conditions of this approval, then the terms of this approval shall be considered to have been violated.
3. Compliance with all Applicable Laws. The permittee shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation.
4. Inspection and Compliance. Authorized representatives of the Department of Environmental Protection or the Attorney General shall be granted access to the premises of the permittee at any reasonable time for the purpose of inspecting the construction or operation of the project and assuring compliance by the permittee with the conditions of this approval.
5. Initiation and Completion of Construction. If construction is not commenced within 3 years and completed within 7 years from the date of issuance of this permit, this approval shall lapse, unless a request for an extension of these deadlines has been approved by the Department of Environmental Protection.
6. Construction Schedule. Prior to construction, the permittee shall submit a final construction schedule for the project to the Department of Environmental Protection.
7. Approval Included in Contract Bids. A copy of this approval must be included in or attached to contract bid specifications for the project.
8. Approval Shown to Contractor. Work done by a contractor pursuant to this approval shall not begin before a copy of this approval has been shown to the contractor by the permittee.
9. Notification of Project Operation. The permittee shall notify the Department of Environmental Protection of the commencement of commercial operation of the project within 10 days prior to such commencement.

10. Assignment or Transfer of Approval. This approval shall expire upon the assignment or transfer of the property covered by this approval unless written consent to transfer this approval is obtained from the Department of Environmental Protection. A "transfer" is defined as the sale or lease of property which is the subject of this approval, or the sale of 50 percent or more of the stock of or interest in a corporation or a change in a general partner of a partnership which owns the property subject to this approval.

APPENDIX B

DEPARTMENT OF COMMERCE NATIONAL MARINE FISHERIES SERVICE

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS OF THE INCIDENTAL TAKE STATEMENT AS PART OF THE BIOLOGICAL OPINION FOR THE ORONO PROJECT (FERC NO. 2710)

Filed August 31, 2012

Reasonable and Prudent Measures

1. FERC must ensure, through enforceable conditions of the project licenses, that Black Bear minimize incidental take from all in-water and near-water activities by applying best management practices to the proposed action that avoid or minimize adverse effects to water quality and aquatic resources.
2. To minimize incidental take from project operations, FERC must require that Black Bear measure and monitor the performance standards contained in the June 7, 2012 Species Protection Plan (SPP) in a way that is adequately protective of listed Atlantic salmon.
3. FERC must ensure, through enforceable conditions of the project licenses, that Black Bear complete an annual monitoring and reporting program to confirm that Black Bear is minimizing incidental take and reporting all project-related observations of dead or injured salmon or sturgeon to NMFS.
4. If the new Milford upstream fish lift is not operational prior to the Veazie Dam removal, or if it is proven ineffective during upstream monitoring studies, FERC must require Black Bear to install a broodstock collection device at the existing Denil fishway.

Terms and Conditions

1. To implement reasonable and prudent measure #1, FERC and ACOE must require Black Bear to do the following:
 - a. Hold a pre-construction meeting with the contractor(s) to review all procedures and requirements for avoiding and minimizing impacts to Atlantic salmon and to emphasize the importance of these measures for protecting salmon.

- b. Black Bear must notify NMFS one week before in-water work begins.
- c. Use Best Management Practices that will minimize concrete products (dust, chips, larger chunks) mobilized by construction activities from entering flowing or standing waters. Best practicable efforts shall be made to collect and remove all concrete products prior to rewatering of construction areas.
- d. Employ erosion control and sediment containment devices at the Stillwater, Orono and Milford Dams construction sites. During construction, all erosion control and sediment containment devices shall be inspected weekly, at a minimum, to ensure that they are working adequately. Any erosion control or sediment containment inadequacies will be immediately addressed until the disturbance is minimized.
- e. Provide erosion control and sediment containment materials (e.g., silt fence, straw bales, aggregate) in excess of those installed, so they are readily available on site for immediate use during emergency erosion control needs.
- f. Ensure that vehicles operated within 150 feet (46 m) of the construction site waterways will be free of fluid leaks. Daily examination of vehicles for fluid leaks is required during periods operated within or above the waterway.
- g. During construction activities, ensure that BMPs are implemented to prevent pollutants of any kind (sewage, waste spoils, petroleum products, etc.) from contacting water bodies or their substrate.
- h. In any areas used for staging, access roads, or storage, be prepared to evacuate all materials, equipment, and fuel if flooding of the area is expected to occur within 24 hours.
- i. Perform vehicle maintenance, refueling of vehicles, and storage of fuel at least 150 feet (46 m) from the waterway, provided, however, that cranes and other semi-mobile equipment may be refueled in place.
- j. At the end of each work shift, vehicles will not be stored within, or over, the waterway.
- k. Prior to operating within the waterway, all equipment will be cleaned of external oil, grease, dirt, or caked mud. Any washing of equipment shall be conducted in a location that shall not contribute untreated wastewater to any flowing stream or drainage area.

- l. Use temporary erosion and sediment controls on all exposed slopes during any hiatus in work exceeding seven days.
 - m. Place material removed during excavation only in locations where it cannot enter sensitive aquatic resources.
 - n. Minimize alteration or disturbance of the streambanks and existing riparian vegetation to the greatest extent possible.
 - o. Remove undesired vegetation and root nodes by mechanical means only. No herbicide application shall occur.
 - p. Mark and identify clearing limits. Construction activity or movement of equipment into existing vegetated areas shall not begin until clearing limits are marked.
 - q. Retain all existing vegetation within 150 feet (46 m) of the edge of the bank to the greatest extent practicable.
2. To implement reasonable and prudent measure #2, FERC and ACOE must require Black Bear to do the following:
 - a. Contact NMFS within 24 hours of any interactions with Atlantic salmon, Atlantic sturgeon or shortnose sturgeon, including non-lethal and lethal takes (Jeff Murphy: by email (Jeff.Murphy@noaa.gov) or phone (207) 866-7379 and the Section 7 Coordinator (incidental.take@noaa.gov))
 - b. In the event of any lethal takes, any dead specimens or body parts must be photographed, measured, and preserved (refrigerate or freeze) until disposal procedures are discussed with NMFS.
 - c. Notify NMFS of any changes in project and fishway operations (including maintenance activities such as flashboard replacement and draft tube dewatering) at the Orono, Stillwater, Milford, West Enfield, and Medway Projects.
 - d. Submit a fish evacuation protocol to NMFS at least two weeks prior to the commencement of in-water work. Daily visual surveys will be conducted by qualified personnel to verify that there are no Atlantic salmon within the project area during the installation and removal of any in-water cofferdam or bypass structure. If cofferdams overtop due a high flow event, the

cofferdam will be resurveyed for adult Atlantic salmon prior to dewatering. If any Atlantic salmon are observed within the enclosed cofferdam they should be removed, either by herding or by capture. Handling should be minimized to the extent possible.

3. To implement reasonable and prudent measure #3, the FERC must require that Black Bear do the following:
 - a. Require Black Bear to measure the survival performance standard for downstream migrating Atlantic salmon smolts and kelts at the Orono, Stillwater, Milford, and West Enfield Projects of 96% (within the lower and upper 75% confidence limit) using a scientifically acceptable methodology.
 - i. That is, 96% of downstream migrating smolts and kelts approaching the dam structure survive passing the project, which would include from 200 meters upstream of the trashracks and continuing downstream to the point where delayed effects of passage can be quantified. Black Bear must coordinate with NMFS in selecting an adequate location for the downstream receivers.
 - ii. Passage must occur within 24 hours of a smolt or kelt approaching within 200 meters of the trashracks for it to be considered a successful passage attempt that can be applied towards the performance standard.
 - iii. The survival standard is considered achieved if each year of a three year study period achieves at least 96%, based on a 75% confidence interval, at each project. A Cormack-Jolly-Seber (CJS) model must be used to determine if the survival standard has been achieved and present 75% error bounds around survival estimates.
 - iv. Black Bear must consult with NMFS concerning the application of appropriate statistical methodology and must provide an electronic copy of the CJS model(s) and data to NMFS.
 - b. All tags released in the system should have codes that are not duplicative of tags used by other researchers in the river, including university, state, federal and international tagging programs.
 - c. Submit a study plan for a one year adult upstream study at the West Enfield Project to be conducted ten years post implementation of the SPP.
 - d. Submit a study plan for a three year downstream kelt study at the Orono, Stillwater, Milford, and West Enfield Projects.
4. To implement reasonable and prudent measure #4, the FERC must require that Black Bear do the following:

- a. Require that Black Bear seek comments from NMFS on any fish passage design plans at the 30%, 60%, and 90% design phase. Also, allow NMFS to inspect fishways at the projects at least annually.
- b. Submit annual reports at the end of each calendar year summarizing the results of proposed action and any takes of listed sturgeon or Atlantic salmon to NMFS by mail (to the attention of the Section 7 Coordinator, NMFS Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 and to incidental.take@noaa.gov).

Document Content(s)

P-2710-057.DOC.....1-40

Jon.elmer@brookfieldrenewable.com
Black Bear/08:08:2013 12:28
CONFIDENTIAL



July 15, 2014

VIA E-FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Compliance Filings for License Articles
Article 308 Filing for Orono Hydroelectric Project (FERC No. 2710)

Dear Secretary Bose:

Pursuant to the Commission's September 14, 2012 Order Amending License and Revising Annual Charges for the above-referenced Orono (FERC No. 2710) Hydroelectric Project, Kleinschmidt Associates (Kleinschmidt) hereby submits, on behalf of our client, Black Bear Hydro Partners, LLC (BBHP), the As-Built Drawings for Exhibits A and F in compliance with Article 308.

Article 308 requires BBHP to file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built within 90 days of completion of all construction activities authorized by this license. The Orono Powerhouse B was placed in service on November 22, 2013 and the required fish passage facilities were completed and operational by April 15, 2013. The Exhibit A provides the single-line diagram for Powerhouse B; the single-line diagram for Powerhouse A is already on file with the FERC. Exhibit F is being filed as Critical Energy Infrastructure Information (CEII). There are no changes to the previously approved Exhibit G.

By copy of this letter we are also filing courtesy copies with the FERC's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Please do not hesitate to let me know if you have further questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Kelly Maloney". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Kelly Maloney
Project Licensing Coordinator

KOM:TMJ

Enclosures: Exhibit A
Exhibit F (filed CEII)

cc: D2SI, FERC NYRO Engineer
D2SI, Director
Division of Hydropower Administration and Compliance, Director
Scott Hall, BBHP

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001 As-Built Filings Cover Letter OR (7-15-14).docx

EXHIBIT A
PROJECT DESCRIPTION

BLACK BEAR HYDRO PARTNERS, LLC
ORONO HYDROELECTRIC PROJECT
(FERC NO. 2710)

CAPACITY-RELATED AMENDMENT APPLICATION
FOR MAJOR PROJECT OVER 5 MW

EXHIBIT A
PROJECT DESCRIPTION

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PROJECT DESCRIPTION..... 3

 2.1 Dam..... 3

 2.2 Generating Facilities 4

 2.3 Fish Passage Facilities 5

3.0 PROJECT WATERS 9

4.0 TRANSMISSION LINES..... 10

5.0 ANCILLARY EQUIPMENT 12

6.0 DESCRIPTION OF LANDS OF THE U.S. 13

7.0 REFERENCES 14

LIST OF TABLES

Table A-2-1. Existing Structures 6

LIST OF FIGURES

Figure A-4-1. Single Line Diagram for Powerhouse B..... 11

BLACK BEAR HYDRO PARTNERS, LLC**ORONO HYDROELECTRIC PROJECT
(FERC NO. 2710)****CAPACITY-RELATED AMENDMENT APPLICATION
FOR MAJOR PROJECT OVER 5 MW****EXHIBIT A
PROJECT DESCRIPTION*****1.0 INTRODUCTION***

Black Bear Hydro Partners, LLC, Black Bear Development Holdings, LLC, and Black Bear SO, LLC (collectively Black Bear) are the owners and operators of the existing 6.518 MW Orono Hydroelectric Project (FERC No. 2710) (Project). Pursuant to FERC's December 8, 2005 Order Issuing New License, September 14, 2012 Order Amending License and March 4, 2013 Order Approving Revisions to Exhibit A, the Orono Project is described as follows (FERC, 2005; FERC, 2012; FERC, 2013): an existing 1,178-foot-long by 15-foot-high dam including a 320-foot-long spillway topped with 3-foot-high flashboards; an existing 2.0-mile-long reservoir, which has a surface area of 140 acres at the normal full pond elevation of 73 feet National Geodetic Vertical Datum (NGVD); one 866-foot-long, 20-foot-wide, 12-foot-high concrete penstock supplying water to Powerhouse A; one 292-foot-long, 25-foot-wide, 12-foot-high concrete penstock supplying water to Powerhouse B; Powerhouse A containing four generating units with a total installed generating capacity of 2,780 kW; Powerhouse B containing three generating units with a total installed capacity of 3,738 kW; transmission lines; appurtenant facilities.. The Project is located on the Stillwater Branch of the Penobscot River in the town of Orono in Penobscot County, Maine at the outlet of the Stillwater Branch into the mainstem of the Penobscot River. The Stillwater Branch is 10.5 miles (mi) long and serves as a channel of the Penobscot River as it flows around the western side of Orson and Marsh Islands.

The Orono Hydroelectric Project is part of the Lower Penobscot River Multiparty Settlement Agreement (Settlement Agreement), the goal of which is to restore self-sustaining populations of 11 native species of sea-run fish along the Penobscot River in Maine. The Settlement Agreement involves the purchase and removal of the lower-most dams on the Penobscot River, Veazie (FERC No. 2403) and Great Works (FERC No. 2312), and the

decommissioning of the Howland dam (FERC No. 2721) on the Piscataquis River, tributary of the Penobscot River. As part of the Settlement Agreement, the signatories agreed to support a series of generation increases at other hydroelectric projects, including at the Orono Project, to offset the generation lost at the Veazie, Great Works, and Howland Projects. On November 1, 2009, PPL Maine LLC (PPL) transferred ownership of the Orono and Stillwater Projects to BBHP, along with the applicable rights, obligations, and opportunities associated with the Settlement Agreement.

2.0 PROJECT DESCRIPTION

2.1 Dam

Pursuant to FERC's December 8, 2005 Order Issuing New License and October 15, 2009 Order Approving As-Built Drawings (FERC, 2005; FERC, 2009b), the Orono Project includes a 1,174-foot-long by 15-foot-high dam, originally reconstructed in 1960, that includes a 320-foot-long spillway topped with 3-foot-high flashboards consisting of the following sections (PPL, 2009):

- 1) left abutment which is a concrete gravity structure approximately 168 feet long with an average height of approximately 20 feet and a top elevation of 80.1 feet NGVD;
- 2) auxiliary spillway which is a concrete gravity structure, 297 feet long and approximately 13 feet high with a permanent crest at elevation 73.2 feet NGVD;
- 3) main spillway which is a concrete gravity structure 320 feet long and approximately 10 feet high (average) with a permanent crest at elevation 70.0 feet NGVD and top of flashboards at elevation 72.4 feet NGVD;
- 4) forebay wall, constructed of concrete, 70 feet long, integral with the upstream fishway structure with a top elevation of 78.3 feet NGVD;
- 5) an intake structure for Powerhouse B constructed of concrete, 84 feet long and approximately 20 feet high with a top elevation of 78.3 feet NGVD and integral to the existing Powerhouse A intake via a singular trashrack measuring approximately 165 feet wide by 20 feet high;
- 6) an intake structure for Powerhouse A constructed of concrete, 57 feet long and approximately 23 feet high with a top elevation of 82.9 feet NGVD; and

- 7) the right abutment constructed of concrete, 209 feet long and approximately 18 feet high with a top elevation of 77.9 feet NGVD (which has been backfilled).

The Project was not operational between 1996 and 2009. . During 2002, the Licensee completed rehabilitation work on the Ambursen-design forebay wall and intake structure. The Orono Project was reactivated after completing rehabilitation work in 2008-2009 that included installation of a new 866-foot long concrete penstock (20 feet wide by 12 feet tall inside diameter) and surge tank to Powerhouse A (PPL, 2009). The Powerhouse B intake and 292 foot-long 25-foot-wide by 12-foot-high concrete box penstock were completed in December, 2013.

The current project boundary encloses the dam; the reservoir up to the 73.0' NGVD elevation; the powerhouse; and the penstocks (FERC, 2005). The project civil works are also currently surrounded by 8-foot-tall, chainlink perimeter fencing (FERC, 2006; FERC, 2009a).

2.2 Generating Facilities

Rehabilitation work at the Project's Powerhouse A, completed in 2009 included rehabilitating the four triple-runner horizontal turbines and the four generators and associated ancillary equipment in Powerhouse A; and replacing the generator controls and switchgear in Powerhouse A. The Powerhouse A penstock delivers water to four turbine-generator units with a total nameplate capacity of 2.78 MW. The powerhouse is a masonry structure approximately 150 feet long, 150 feet wide, and 50 feet high. Turbines No.1 and 2 are each rated at 800 hp and turbines No.3 and 4 are each rated at 1,200 hp. The turbines are direct connected to generators rated at 678 and 720 kVA for units No.1 and 2, respectively, and 1050 each for Units No. 3 and 4 (PPL, 2009). Powerhouse A has a hydraulic capacity range from 100 to 1,740 cfs and an annual generation for 2009 of about 14,505 kWh.

Powerhouse B, completed in December 2013, is a combination reinforced concrete structure with some corrugated tin walls and a beam and girder roof system measuring approximately 56 feet wide by 40 feet long by 60 feet high. Powerhouse B, contains three Canadian Hydro Components (CHC) 1700 mm diameter vertical axial

flow turbine-generating units having a nameplate capacity of 1,355 kW per unit. Powerhouse B has a total rated capacity of approximately 3,738 kW and a total hydraulic capacity of 2,082 cfs and a minimum operating capacity of approximately 175 cfs, with a net head of 26.51 feet (under full station operation). A surge chamber measuring 60 feet long by 25 feet wide, flaring to 44 feet wide at the powerhouse by 32 feet high on three walls and 27 feet high on the spillway wall is installed. Aerial transmission lines are installed from the new powerhouse's generating step-up transformer unit (GSU) to the existing 12.5 kV, local substation near the existing Powerhouse A. Powerhouse B includes six generator leads, a 60 Hertz, 4.16 kV/12.5 kV three phase, GSU transformer and appurtenant facilities. The Powerhouse B intake is 84 feet wide by 20 feet high and integral to the existing Powerhouse A intake via a singular trashrack measuring approximately 165 feet wide by 20 feet high, with bars spaced at 1-3/8 inches (in) on center (1 in clear spacing), and situated at a 14.0 degree slope from vertical (1H:4V+/- slope).

The Orono Project has a total combined maximum hydraulic capacity of 3,822 cfs (1,740 cfs existing capacity at Powerhouse A plus 2,082 cfs capacity at Powerhouse B) and a minimum operating capacity of approximately 100 cfs (minimum operating capacity of one unit at Powerhouse A). In accordance with the existing Operation and Flow Monitoring Plan (117 FERC 62,004), the required minimum flow in the project bypass reach of 200 cfs will be handled by 150 cfs being routed through the upstream/downstream fish passage facility and 50 cfs being leakage through the installed flashboards or an appropriate point source discharge.

2.3 Fish Passage Facilities

The downstream fish passage facility consists of a 8-foot-wide entrance into a 20-foot-long by 12-foot-wide floor screen chamber with a 3-foot wide exit at the downstream end. A downward opening gate controls flow at the entrance and stoplogs are used to control the chamber water level and flow of at the exit. The new downstream fish passage facility allows for a combined attraction flow of approximately 150 cfs. The fish exit the screen chamber into a steel sluice and are conveyed to a plunge pool which discharges into the bypass reach below the dam. The fish passage facility also provides a lower level entrance, which consists of a 4-foot-square opening at the base of the

trashrack with an invert at elevation 58.1 feet NGVD extending to a weir controlled box structure which outlets to the downstream end of the screen chamber. Velocity at the lower entrance is controlled by an orifice plate. The downstream fish passage facility is designed to pass a combined flow of approximately 150 cfs through the surface entrance and lower orifice.

The upstream fish trapping facility is adjacent to and integral with the new downstream fish passage facility. Of the 150 cfs downstream attraction flow entering the screen chamber, approximately 130 cfs passed through the floor screen and is used for upstream attraction flow for the trapping facility, controlled by two submerged gates. The upstream trapping facility consists of a fixed rail system, a blocking screen and an elevating hopper to retrieve the trapped fish. BBHP provides short distance trucking of trapped fish to a location upstream of the dam. The entrance velocity is controlled by a downward opening gate.

Table A-2-1. Existing Structures

Dam	
Type	Concrete Gravity
Height (ft)	15 ft
Length (ft)	1,174 ft
Spillway (ft)	320 ft
Flashboards (height in ft)	3.0 ft
Reservoir	
Reservoir surface area (in acres)	180 ac
Reservoir surface length	2.0 mi
Normal full pond elevation	73.0 ft NGVD
Normal tailwater surface elevation	44 ft NGVD (at full station output)
Gross storage capacity	1, 405 ac-ft
Powerhouse A	
Overall Dimensions	150 ft long, 150 ft wide, 50 ft high
Total Number of Units	4
Total Nameplate Capacity (MW)	2.780 MW
Total Rated Capacity (MW)	2.780 MW
Generating Unit 1	
Turbine Type:	Francis
Capacity (kW)	596 kW
Hydraulic Capacity (cfs)	370 cfs
Rated Net Head	25 ft
Rated Flow	370 cfs
Rated Turbine Output (hp)	800

Unit RPM	225
Generator Type	Synchronous
Rated Generator Capacity (kVA)	678 kVA
Power Factor	0.8-0.95
Voltage (kV)	2,400 kV
Cycles (Hz)	60 Hz
Generating Unit 2	
Turbine Type:	Francis
Capacity (kW)	596 kW
Hydraulic Capacity (cfs)	370 cfs
Rated Net Head	25 ft
Rated Flow	370 cfs
Rated Turbine Output (hp)	800
Unit RPM	220
Generator Type	Synchronous
Rated Generator Capacity (kVA)	720
Power Factor	0.8-.095
Voltage (kV)	2,400 kV
Cycles (Hz)	60
Generating Unit 3	
Turbine Type:	Francis
Capacity (kW)	895 kW
Hydraulic Capacity (cfs)	500 cfs
Rated Net Head	25 ft
Rated Flow	500 cfs
Rated Turbine Output (hp)	1,200
Unit RPM	225
Generator Type	Synchronous
Rated Generator Capacity (kVA)	1,050 kVA
Power Factor	0.8-0.95
Voltage	2,300
Cycles (Hz)	60
Generating Unit 4	
Turbine Type:	Francis
Capacity (kW)	895 kW
Hydraulic Capacity (cfs)	500 cfs
Rated Net Head	25 ft
Rated Flow	500 cfs
Rated Turbine Output (hp)	1,200
Unit RPM	212
Generator Type	Synchronous
Rated Generator Capacity (kVA)	1,050 kVA
Power Factor	0.8-0.95
Voltage	2,300
Cycles (Hz)	60
Powerhouse B	

Overall Dimensions	56 ft wide, 40 ft long, 60 ft high
Total Number of Units	3
Total Nameplate Capacity (MW)	4.065 MW
Total Rated Capacity (MW)	3.738 MW
Generating Units 5-7	
Turbine Type:	Two Vertical Propeller, One Kaplan
Nameplate Capacity (kW)	1,355 kW
Rated Capacity (kW)	1,246 kW
Hydraulic Operating Capacity (cfs)	694 cfs
Rated Net Head:	26.51 ft
Rated Flow	694 cfs each
Rated Nameplate Turbine Output (hp)	1,817 hp
Unit RPM	300
Generator Type	“SAVB” Vertical Brushless Synchronous Generator
Rated Generator Capacity (kVA)	1,389 kVA each
Power Factor	0.9
Voltage (kV)	4.16 kV
Cycles (Hz)	60 Hz
Site Power Production	
Total Maximum Hydraulic Capacity of Powerhouse A (cfs)	1,740 cfs
Estimated Average Annual Generation (MWh) of Powerhouse A	19,000 MWh
Total Maximum Hydraulic Capacity of Powerhouse B (cfs)	2,082 cfs
Estimated Average Annual Generation (MWh) of Powerhouse B	19,000 MWh
Total Maximum Hydraulic Capacity of Project (cfs)	3,822 cfs
Estimated Average Annual Generation (MWh)	50,800 MWh
Powerhouse A Penstock	One 200-ft-long 20-ft-wide by 10-ft-high penstock that transitions to a 866-ft-long by 20-ft-wide by 12-ft-high penstock
Powerhouse B Penstock	One 292-ft-long 25-ft-wide by 12-ft-high penstock that transitions to an open surge chamber at the powerhouse
Transmission Lines	
Powerhouse A	Three 325 ft long aerial transmission lines installed from the powerhouse’s GSU to the existing substation

Powerhouse B	600 ft long and transmits at 12.5 kV. Generators are connected to a 4,160 kV to 12.5 kV GSU transformer via a low side breaker and the GSU transformer is connected to Bangor Hydro Electric Co's local 12.5 kV distribution system via a GSU transformer high side breaker and disconnects.
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3.0 PROJECT WATERS

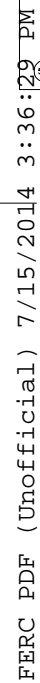
The Orono Project is located on the Stillwater Branch of the Penobscot River in the Town of Orono in Penobscot County, Maine. At 10.5 mi long, the Stillwater Branch functions as a channel of the Penobscot River as it flows around the western side of Orson and Marsh Islands. The Penobscot River and Stillwater Branch drainages above the Orono Project are approximately 7,602 square miles (sq mi) (PPL, 2004).


The existing impoundment is approximately 2.0 miles long, with a surface area of about 140 ac at a normal headwater surface elevation of 73.0 ft NGVD. The Project has a gross storage capacity of 1,405 sc-ft and the usable storage capacity is negligible, being a run-of-river project. The normal headwater surface elevation is maintained when river flows are at or below the hydraulic capacity of the turbines.

4.0 TRANSMISSION LINES

Powerhouse A has 325 ft long aerial transmission lines installed from the powerhouse's GSU to the existing substation. A GSU transformer is situated at Powerhouse B, and overhead 12.5 kV transmission lines of approximately 600 ft in length are interconnected at the Bangor Hydro Electric Company Orono Substation located adjacent to Powerhouse A. The single line diagram for Powerhouse B is provided below.

24-----VOLTS/HERTZ
25-----SYNCH CHECK
25A---AUTO SYNCH.
27-----UNDER VOLTAGE
32-----REVERSE POWER
38-----BEARING THERMAL DEVICE
40-----LOSS OF EXCITATION
43SS---SYNCH SELECTED
46-----NEGATIVE SEQUENCE OVERCURRENT
49-----MACHINE THERMAL DEVICE
51V---VOLTAGE RESTRAINED OVER CURRENT
52-----POWER CIRCUIT BREAKER
59-----OVER VOLTAGE
59N---GROUND FAULT OVERVOLTAGE
81-----FREQUENCY
86G---GENERATOR LOCKOUT RELAY
AMP-----AMP METER
CPT---CONTROL POWER TRANSFORMER
FM-----FREQ. METER
VM-----VOLT-METER
VT-----VOLTAGE TRANSFORMER
KwH---KILO WATT HOUR METER
SS---SYNCHRO SCOPE



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		ENGR IP		DATE 5/06/10		TITLE BLACK BEAR HYDRO-ORONO B PLANT AC ONELINE DIAGRAM			
		SCALE NONE		TYPE 5kV SWITCHGEAR			AC SINGLE LINE		
CAD FILENAME ORONOB1LNAC	PRODUCT CODE	REVISION A				G.O. NA		DWG ORONOB1LNAC	SHEET 1 OF 1

5.0 *ANCILLARY EQUIPMENT*

Powerhouse A contains the following appurtenant facilities: manually operated steel slide gates at the intake structure; control governors; switchgear, electrical leads, circuit breakers, and transformers; and lubrication, motor control, HVAC, and lighting systems.

Powerhouse B contains: manually operated steel slide gates at the intake structure control governors; switchgear, electrical leads, circuit breakers, and transformers; and lubrication, motor control, HVAC, and lighting systems, HPUs, air compressor, ventilation fans, draft tube gate hoist, head gate gate hoist, overhead door and roof hatch.

6.0 DESCRIPTION OF LANDS OF THE U.S.

There are no lands of the United States within the project boundary or affected by current or future project operations.

7.0 REFERENCES

- Federal Energy Regulatory Commission (FERC). 2013. Order Approving Revisions to Exhibit A for the Orono Project (FERC No. 2710). 142 FERC ¶ 62,179. Issued March 4, 2013.
- Federal Energy Regulatory Commission (FERC). 2012. Order Modifying and Approving License Amendment for the Orono Project (FERC No. 2710). 140 FERC ¶ 62,194. Issued September 14, 2012.
- Federal Energy Regulatory Commission (FERC). 2009a. Environmental Inspection Report for the Orono Project (FERC No. 2710). Accession No.: 20091112-0302. Issued November 5, 2009.
- Federal Energy Regulatory Commission (FERC). 2009b. Order approving revised Exhibit F as-built drawings for the Orono Project (FERC No. 2710). Accession No.: 20091007-3033. Issued October 7, 2009.
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- Federal Energy Regulatory Commission (FERC). 2008b. Order Modifying and Approving Design and Plans for Upstream American Eel Passage Facilities Under Articles 408, 407, 406 and Paragraph (E) for the Orono Project (FERC No. 2710). Accession No.: 20080305-3013. Issued March 5, 2008.
- Federal Energy Regulatory Commission (FERC). 2006. Environmental Inspection Report for the Orono Project (FERC No. 2710). Accession No.: 20060203-0604. Issued February 2, 2006.
- Federal Energy Regulatory Commission (FERC). 2005. Order on Offer of Settlement and Issuing New License for the Orono Project (FERC No. 2710). Accession No.: 20051208-3006. Issued December 8, 2005.
- PPL Maine, LLC (PPL). 2009. Revised Exhibit A and F for the Orono Hydroelectric Project (FERC No. 2710). Accession No.: 20090416-0013. Filed April 10, 2009.
- PPL Maine LLC (PPL). 2004. Application for New License for Major Water Power Project Under 5 MW – Existing Dam for the Orono Hydroelectric Project (FERC No. 2710). Accession No.: 20040629-0157. Filed June 25, 2004.
- PPL Maine, LLC, PPL Great Works, LLC, Penobscot Indian Nation, US Department of the Interior, Penobscot River Restoration Trust, Maine State Planning Office, Maine Atlantic Salmon Commission, Maine Department of Inland Fisheries and Wildlife, and Maine Department of Natural Resources, American Rivers, Atlantic Salmon Federation, Maine Audubon Society, Natural Resources Council of Maine, and Trout Unlimited (PPL, *et al*). 2004. The Lower Penobscot River Basin Comprehensive Settlement Accord with Explanatory Statement. June 25, 2004.

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P-2710 As-Built Filings OR 7-15-14.PDF.....1-17