141 FERC ¶ 62,025
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Black Bear Hydro Partners, LLC Project No. 2534-092

ORDER APPROVING FISH PASSAGE DESIGN DRAWINGS
UNDER ARTICLES 407 AND 408

(Issued October 9, 2012)

1. On December 1, 2011, Black Bear Hydro Partners, LLC (licensee), filed fish passage design drawings and related materials pursuant to Articles 407 and 408 of its license for the Milford Project (No. 2534).[1] The project is located on the Penobscot River in Penobscot County, Maine.

Background

2. Articles 407 and 408 of the project license, as amended,[2] require the licensee to install and operate permanent downstream and upstream fish passage facilities, respectively, at the Milford Project.

3. Article 407 requires the downstream passage facilities to include: (1) a downstream fishway as described in the licensee's filing dated January 12, 1990; (2) outer trashracks with 1-inch clear bar spacing over the upper 12 feet of the rack (or 4-inch clear bar spacing on the outer rack and 1-inch clear bar spacing on the inner trashracks with two additional entrance ports installed on the inner trashrack); (3) twin 4-foot-wide (8 feet total) weirs at the outer trashrack, capable of passing up to 280 cubic feet per second (cfs); the location of the weirs is to be west of the edge of the new generation unit (No. 2); (4) attraction flows to the downstream fishway of 280 cfs; (5) a gated bottom intake to the downstream migrant facilities for the downstream passage of American eels; and (6) a downstream migrant conduit designed so that the discharge jet does not impact on any vertical walls.

[1] *See* Order Issuing New License, 83 FERC ¶ 61,037 (issued April 20, 1998).

[2] *See* Order Modifying and Approving Amendment of License, 111 FERC ¶ 62,061 (issued April 18, 2005).

4. Article 408 requires the upstream passage facility to include a "state of the art" upstream anadromous fish passage facility as specified in Attachment A to the Lower Penobscot River Multiparty Settlement Agreement (Settlement Agreement). The Settlement Agreement states the fish passage facility should generally consist of a shore based fish lift with a single entrance immediately downstream from the powerhouse and an exit channel to include a fish counting station and facilities for sorting and trapping-and-trucking. The exit channel would pass through the basement of the powerhouse. This fish lift would have an attraction flow of 210 cfs, an operation control center computer module, and a separate underground viewing facility for public use. The Settlement Agreement states that a rubber dam should be installed along the 390-foot-long section of spillway between the mid-river ledge outcrop and the east abutment to enhance passage at the single fish lift and avoid the need for a west shore fishway. This rubber dam has been installed as approved in a letter issued by the Commission on June 22, 2010. The Settlement Agreement also states the log sluice should be altered and the supporting ledge outcrop removed to enhance attraction to the fish lift entrance within 10 years of the effective date of the Settlement Agreement.

5. Articles 407 and 408 require the licensee to file, for Commission approval, detailed design drawings for the downstream and upstream passage facilities, respectively. The filing must 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. The licensee must develop the design, schedule, and operating procedures in consultation and cooperation with the U.S. Fish and Wildlife Service (FWS), Penobscot Indian Nation, Maine Department of Inland Fisheries and Wildlife (Maine DIFW), Maine Department of Marine Resources (Maine DMR), Maine Atlantic Salmon Commission (incorporated into Maine DMR in 2007), and the National Marine Fisheries Service (NMFS).

6. The licensee must include with the filing, documentation of consultation, copies of comments and recommendations on the drawings, plans, and schedules, after they have been prepared and provided to the agencies, and specific descriptions of how the agencies' and Penobscot Indian Nation's comments and recommendations are accommodated in the licensee's facilities. The licensee must allow a minimum of 30 days for the agencies and Penobscot Indian Nation to comment and make recommendations before filing the drawings, plans, and schedule with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

Licensee's Filing

7. On December 1, 2011, the licensee filed its fish passage design drawings, Operation and Maintenance Plan, and construction schedule pursuant to Articles 407

and 408. The filing also included documentation of consultation with the FWS, NMFS, Maine DIFW, Maine DMR, and Penobscot Indian Nation.

8. The downstream fish passage facilities consist of two new entrance flume extensions passing through the powerhouse wall at the west end and center of the powerhouse. The center downstream passage facility includes a 4-foot-high, 4-foot-wide bottom entrance for American eel capable of passing up to 70 cfs into the bottom of the plunge pool.

9. The upstream fish lift facility would consist of an entrance at the east end of the powerhouse tailrace capable of passing up to 300 cfs of combined attraction and operation flows. The entrance flume would be 10-feet-wide and turn 180 degrees leading to a lifting hopper with crowder braille. The lifting hopper would rise about 20 feet via mechanical hoist to a 10-foot-wide exit flume which would run through the east end of the powerhouse and then terminate in the headpond upstream of the project's trashracks. Fish could continue through the exit flume, past a counting window, and directly to the headpond, or be lifted via a second hopper to sorting facilities. Once sorted, fish could be released into the headpond or transferred into trucks for transport to hatchery and stocking programs.

10. In its Operation and Maintenance Plan, the licensee recognizes that it is the licensee's responsibility to maintain and operate the upstream lift facility. However, the licensee states that it would provide access and office space to staff of Maine DMR who would operate the upstream fish lift for the purposes of collecting data and Atlantic salmon broodstock. The licensee states that it would assume operation, or arrange for the operation of the facilities, in the event that Maine DMR would no longer operate the facilities.

11. The licensee states that its roving operator who visits the project several times a day would observe both upstream and downstream fish passages to inspect for debris and ensure that proper adjustments are made. The licensee states that if it is necessary to shut down either the upstream or downstream fish passage facilities for maintenance purposes, it would consult with the agencies prior to stopping flow. The Operation and Maintenance Plan describes how the generation units would be operated in order to maximize attraction to the upstream and downstream facilities during different passage seasons. The licensee states that the unit sequencing may be refined based on the results of the fish passage effectiveness studies.

12. The licensee's proposed schedule indicated that installation of the fishway could be completed generally within 12 months of Commission approval, depending on the timing of the approval.

13. In addition, in order to address adverse impacts to threatened and endangered species, the licensee proposed to implement the Species Protection Plan for Atlantic

salmon and the corresponding Atlantic Salmon Passage Study Plan filed June 8, 2012, and implement the Sturgeon Handling Plan filed March 7, 2012.

Threatened and Endangered Species

14. Section 7(a)(2) of the Endangered Species Act of 1973,[3] 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.

15. 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 Milford 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.

16. The BE also determined that the actions required at the Milford 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.

17. 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.

18. 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, or Atlantic sturgeon. Furthermore, the Opinion concluded

[3] 16 U.S.C. § 1536(a) (2006).

that the proposed action would not adversely modify or destroy critical habitat designated for Atlantic salmon.

19. 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 Milford Project, are incorporated into the license by ordering paragraph (B), attached to the license as Appendix A, and referenced in specific ordering paragraphs, where appropriate.

Comments from the Agencies and Penobscot Indian Nation

20. Prior to filing the fish passage designs with the Commission, the licensee consulted with the NMFS, FWS, Penobscot Indian Nation, Maine DMR, and Maine DIFW. The licensee met with the agencies and Penobscot Indian Nation on several occasions, modified the designs in response to recommendations, and allowed the consulted parties 30 days to review and comment on the drawings, and operation and maintenance plan, prior to filing them with the Commission.

21. Based on extensive consultation with the resource agencies and Penobscot Indian Nation, the licensee modified the fish passage designs by: widening the exit flume to 10 feet and increasing flow through the flume from 40 to 50 cfs; increasing the size of the hopper; revising the upper design limit to 32,500 cfs of river flow; including a downstream migrant bypass in the exit flume; preserving the existing Denil fishway until after the new upstream fishway is determined to be effective; maximizing daylight to the exit flume; modifying the floor brail configuration; relocating the fishway entrance closer to the powerhouse to improve flow dynamics; and increasing the maximum flow at the entrance to 300 cfs.

22. The resource agencies and Penobscot Indian Nation also suggested several modifications to the facilities that the licensee did not incorporate. These include: the removal or modification of a 180 degree turn in the upstream passage's entrance flume; widening the upstream fish passage facility; installing a flow training wall in the forebay to benefit downstream passage; and increasing the angle of the trashracks to provide a greater sweeping velocity vector across the face of the racks. The licensee states physical constraints of the upstream passage's location and agency requests to include important features, such as an entrance as far upstream as possible, preclude the removal of the 180 degree turn or widening of the fishway. The licensee also states that a flow training wall would not attenuate poor flow conditions at the trashracks while trashrack angle has little bearing on sweeping velocities. The licensee explains that the trashrack angle is inconsequential due to the relative magnitude of flow passing through the trashracks and

the flow vector across the trashracks would be insignificant even if the angle were very large.

Discussion

Review of Agency Comments

23. The licensee's filing provided substantial evidence of consultation with the agencies and Penobscot Indian Nation. As previously described, the licensee incorporated many of the suggestions and modified project facilities to alleviate concerns that had been raised. Where changes to the facilities were either infeasible or unlikely to have a beneficial impact, the licensee justified its reasons for not including the suggestion. We have reviewed the consultation record and have determined that the licensee's justification is reasonable. The license and this order require the fish passage facilities to be effective. If the monitoring and evaluation 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. The licensee acknowledges its responsibility to provide effective fish passage and plans to monitor and evaluate passage effectiveness while modifying passage facilities until that goal is achieved.

Construction Plan and Schedule

24. The licensee's filing did not include any details regarding construction of the proposed modifications. The filing included a broad schedule, but it was based on receiving Commission approval in early 2012. The licensee should file a revised schedule for constructing the facilities and include information regarding the planned construction activities. In particular, the filing should address how construction would be timed to avoid smolt out-migration periods and what, if any, coordination is necessary with other construction/removal activities going on in the basin including the removal of the Veazie dam. Ordering paragraph (C) requires the licensee to file a construction schedule and this information.

Operation and Maintenance Plan

25. The licensee does not include any provision for recording operations and maintenance activities. A record of operation and maintenance activities would provide valuable information in establishing and evaluating the adequacy of routine operation and maintenance activities. In addition, this information would be useful in evaluating the effectiveness of the facilities as required by the license. Therefore, ordering paragraph (D) requires the licensee to maintain a record of operations and maintenance of the passage facilities and provide that information upon request, to the resource agencies, Penobscot Indian Nation, or the Commission. The record should include the time, date, and a description of all operations and maintenance activities including, but not limited

to: facility inspections/visits; changes in flow allocation; debris removal; equipment damage and remedial measures; and agency visits and comments. The information collected should be considered and included in the evaluation of fish passage effectiveness required by the license.

Evaluation of Fish Passage Effectiveness

26. Article 409 of the license requires the licensee to file a plan to monitor the effectiveness of all the facilities and flows provided pursuant to Articles 407 (which requires downstream passage facilities for Atlantic salmon, American shad, alewife, blueback herring, and American eel) and Article 408 (which requires upstream passage for the same species). The effectiveness monitoring plan must be developed in consultation with the resource agencies and Penobscot Indian Nation. In addition, the terms and conditions of the Opinion require certain measures regarding fish passage effectiveness.

27. 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, ordering paragraph (E)[4] requires 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 agencies and Penobscot Indian Nation and filed for Commission approval.

28. In addition, ordering paragraph (F) modifies Article 409 to reflect that the plan filed under Article 409 must evaluate the effectiveness of the fishways for diadromous species other than Atlantic salmon including American shad, alewife, blueback herring, and American eel.

[4] On March 7, 2012, the licensee filed proposed license articles which correspond to the provisions of the Species Protection Plan. We note that a requirement implementing 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.

Post Evaluation Amendments

29. Modifications to the existing log sluice and adjacent rock outcropping, which are included in the Settlement Agreement, were briefly discussed during consultation. It was noted that these modifications would occur at a later date if it is determined that discharge from the rubber dam is causing false attraction and delaying fish in the spillway apron area. These modifications would include possibly shortening the log sluice and excavating the rock outcropping to provide a more direct route for the fish to travel from the spillway apron to the tailrace. Any false attraction and adverse impacts of the log sluice and rock outcrop would be determined during the evaluation of fish passage effectiveness.

Brood Stock Collection Device

30. As part of the Settlement Agreement, the removal of the dams at the Great Works Project (No. 2312) and Veazie Project (No. 2403) are being implemented by the Penobscot River Restoration Trust.[5] The Veazie Project is currently the site where Atlantic salmon broodstock are collected. Once the Veazie dam is removed, the Milford Project dam will be the most downstream barrier to fish passage on the main stem of the Penobscot River and thus, will become the new location for collecting Atlantic salmon broodstock. Under the terms and conditions of NMFS' Opinion, 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, the licensee must install a broodstock collection device at the existing Denil fishway.

31. The filing of a revised construction schedule and other information required by ordering paragraph (C), should include information regarding the timing of the installation of the upstream fish lift at the Milford Project and how that corresponds to the timing of the Veazie dam removal. If it is determined that the Veazie dam would be removed prior to the Milford fish lift being operational, the licensee must develop a plan to install a broodstock collection device at the existing Denil fishway as required by the Opinion. Ordering paragraph (G) requires the licensee to develop a plan for the collection device in consultation with the NMFS, FWS, Penobscot Indian Nation, Maine DMR, and Maine DIFW, and file it for Commission approval. The licensee would be directed to file this plan if it is determined to be necessary after review of the construction schedule and other information or when monitoring results indicate that the upstream facility is not effective.

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

Sturgeon Handling Plan

32. 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 fish lift facility. Ordering paragraph (H) approves the plan and requires the licensee to incorporate the 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.

Operation and Flow Compliance Monitoring

33. The licensee's filing did not include any information regarding how flows through the new fish passage facilities would be measured or monitored. Monitoring flows through the facilities would be necessary to evaluate the effectiveness of the facilities and ensure compliance with required flows over the life of the license. In addition, the Species Protection Plan would require the licensee to spill certain percentages of river flow if fish passage facilities do not meet performance standards. Commission staff's review of the project record found that there is little information on the record regarding how flows and reservoir levels are measured and monitored in order to ensure compliance with license requirements including: run-of-river operation (Article 402); minimum flows (Article 403); and reservoir elevations (Article 404). Therefore, ordering paragraph (I) requires the licensee to file, for Commission approval, an Operation and Flow Compliance Monitoring Plan to be developed in consultation with the resource agencies and Penobscot Indian Nation.

Project Access

34. The resource agencies recommend that they be allowed site access to monitor the construction of fish passage facilities and inspect the facilities to ensure the facilities are constructed and operated as planned. This is being implemented through ordering paragraph (J).

Exhibit Drawings

35. Ordering paragraph (K) requires the licensee to submit as-built Exhibit F drawings to reflect the construction of the facilities approved in this order, within 90 days following the completion of construction activities.

Review of Final Plans and Specifications

36. Ordering paragraph (L) 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. Ordering paragraph (M)

requires the licensee to provide the Commission's D2SI-NYRO with cofferdam construction drawings.

Conclusion

37. The modification of the downstream fish passage facility and installation of the upstream fish lift facility would improve fish passage conditions for diadromous fish species. The monitoring and evaluation of those facilities over time would help ensure that the facilities are effective. The licensee's December 1, 2011 filing of fish passage design drawings and the Operations and Maintenance Plan, as modified, meets the requirements of Articles 407 and 408 and should be approved.

The Director orders:

(A) The licensee's December 1, 2011 filing of fish passage designs and the Operations and Maintenance Plan, as modified herein, is approved.

(B) 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 Milford Project, submitted by the National Marine Fisheries Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix A to this order.

(C) Within 60 days of the date of this order, the licensee shall file, for Commission approval, a construction schedule. The filing shall include: a schedule for completing construction of the facilities within 18 months of this order; a description of how construction will be timed to avoid smolt out-migration; a discussion as to whether the facility will be operational prior to the removal of the Veazie Project dam; and a provision for notifying 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 the Commission as soon as possible regarding any changes to the construction schedule that would affect these or other environmental resources. The licensee shall include documentation of consultation with the Penobscot River Restoration Trust regarding the timing of the removal of the Veazie Project dam.

(D) The licensee shall maintain a record of operations and maintenance activities and, upon request, provide that information to the resource agencies, Penobscot Indian Nation, or the Commission. The record shall include the time, date, and a description of all operations and maintenance activities including, but not limited to: facility inspections/visits; changes in flow allocation; debris removal; equipment damage and remedial actions taken; and agency site visits and comments. The information collected shall be considered and included in the evaluation of fish passage effectiveness required by the license.

(E) 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 plans 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 plans 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 plans 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 plans. 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 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 plans, project structures, or operations in order to protect and enhance aquatic resources.

(F) Article 409 is deleted in it entirety and replaced with the following:

Article 409. *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 Articles 407 and 408 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 to 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.

(G) If it is determined that the Veazie Project Dam would be removed prior to the Milford fish lift being operational, or if upstream monitoring studies required by ordering paragraph (E) indicate that the upstream fishway is ineffective, the licensee shall develop a plan to install a broodstock collection device at the existing Denil fishway as required by the National Marine Fisheries Service's Biological Opinion. The licensee shall develop a plan for the design, installation, and operation of the collection device in consultation with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Penobscot Indian Nation, Maine Department of Marine Resources, and Maine Department of Inland Fisheries and Wildlife, and file it for Commission approval.

(H) 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.

(I) Within 9 months of issuance of this order, the licensee shall file, for Commission approval, an Operation and Flow Compliance Monitoring 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, fish passage 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 to protect environmental resources.

(J) The licensee shall provide reasonable 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 so these agencies and Penobscot Indian Nation can inspect the facilities to ensure they are constructed and operated as required.

(K) Within 90 days of completion of construction activities authorized by this order, the licensee shall file for Commission approval, revised Exhibits F drawings to 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.

(L) At least 60 days prior to start of construction, the licensee shall submit one copy of its final contract plans and specifications, a construction schedule, 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 Biological Opinion. 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.

(M) 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.

(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

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 MILFORD PROJECT (FERC NO. 2534)

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.

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