HDR | DTA

January 26, 2011

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

Subject: Pejepscot Project (FERC Project No. 4784)
January 25, 2011 Letter to National Marine Fisheries Service

Dear Ms. Bose:

On behalf of Topsham Hydro Partners (Topsham) and pursuant to the Commission's July 14, 2010, letter to the National Marine Fisheries Service (NMFS) (designating Topsham as the Commission's non-federal representative for informal consultation on Atlantic Salmon under Section 7 of the Endangered Species Act), we here submit a copy of our letter to NMFS dated January 25, 2011.

The attached letter to NMFS summarizes the informal ESA consultation and submits outlines of documents to be used in that consultation.

We provide this letter as a follow-up to the Commission's letter to Topsham (and others) dated April 9, 2010, relating to upstream and downstream fish passage issues.

If there are any questions concerning this matter, please contact me at 207-239-3860.

Sincerely,

John Devine

John Devine P.E.
Project Manager

Attachment (1)

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January 25, 2011

Mr. Jeff Murphy
NOAA's National Marine Fisheries Service
Maine Field Station
17 Godfrey Drive Suite 1
Orono ME 04473

Subject: Pejepscot Project – Androscoggin River – FERC No. 4784
Final Outline of Draft Biological Assessment and Feasibility Assessment
Of Interim Protection Measures
Project Description
Meeting Notes

Dear Jeff:

On behalf of Topsham Hydro Partners, we want to thank you for meeting with us on September 27, 2010, and subsequently reviewing and providing your comments on the content of a draft Biological Assessment (BA) which we received on November 30, 2010.

We have incorporated the review comments and will now proceed with the investigations contemplated in the Feasibility Assessment of Potential Interim Protection Measures, and following that, preparation of the draft BA. Please find the final outlines in Attachment 1 to this letter.

The first task under the draft BA and Feasibility Assessment is to prepare a detailed Project Description, which we have done and are providing to you for your use and information (see Attachment 2). We have also prepared a brief summary of the meeting that occurred on September 27, 2010 in your Orono offices. Please find this in Attachment 3.

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We continue to believe that we will be able to complete the draft BA in the third quarter of 2011. We look forward to working with you throughout the process. If you have an interest in visiting the Project, we would be happy to accommodate you. Please let me know.

Thank you again for your attention to the Pejepscot Project.

Regards,

John Devine

John J Devine P.E.
Project Manager

Attachments (3)

cc: Ingolf Hermann, Topsham Hydro Partners
E Hudson, Topsham Hydro Partners
N Skancke, GKRSE
F Seavey, USFWS
P Keliher, MDMR

ATTACHMENT 1

Final Outline of Draft Biological Assessment

And Feasibility Assessment of Interim Protection Measures

Proposed Outline

Draft Biological Assessment
Gulf of Maine Distinct Population Segment of Atlantic Salmon

I. Background

(a) Recent ESA Listings of Atlantic Salmon
(b) Merrymeeting Bay Salmon Habitat Recovery Unit (SHRU)
(c) Project Licensed by FERC (reference current terms & conditions)

II. Purpose and Description of Draft BA

(a) Review of Ongoing Operations for their Interactions with Listed Fish
(b) Assess the Potential for Measures and Interim Species Protection Plan (the Assessment of Potential Interim Protection Measures will be an Appendix of the Draft BA)

III. Project Description

(a) Project Facilities
(b) Project Operations
(c) Project Maintenance Activities
(d) Water Quality in the Project Area
(e) Prior Relevant Studies

IV. Atlantic Salmon Life History

(a) General Description of GOM DPS of Atlantic Salmon
(b) Recovery Plan Overview

V. Presence of Atlantic Salmon in the Project Area

(a) Androscoggin River
(b) Data on Presence of ESA-Listed Salmon at the Project

VI. Critical Habitat Designations

(a) Summarize NMFS Findings on Critical Habitat
(b) Potential for Critical Habitat at Project

VII. Potential Effects on GOM DPS

(a) Life Stage Assessments of Project Interactions (spawning, incubation, larval development, rearing, outmigration, return to spawn)
(b) Upstream Passage
(c) Downstream Passage
(d) Migration Corridor Delay
(e) Reservoir Operations
(f) Instream Flows
(g) Maintenance Activities
(h) Predation
(i) Juvenile Habitat
(j) Adult Habitat
(k) Potential for Cumulative Effects

VIII. Determination of Effects

(a) Avoidance and Minimization of Effects
(b) Estimate of Incidental Take
(c) Proposed Measures and Monitoring
(d) Potential for Adverse Effects on Species or Critical Habitat

ATTACHMENT A: Feasibility Assessment of Potential Interim Protection Measures

ATTACHMENT A
FEASIBILITY ASSESSMENT OF POTENTIAL INTERIM PROTECTION MEASURES

I. Background and Purpose of Interim Protection Measures

II. Project Location and Overview of Operations

III. Recent and Current Protection and Enhancement Measures for Listed Salmon

- (a) Operating Procedures – Upstream Passage
- (b) Operating Procedures – Downstream Passage
- (c) Water Quality
- (d) Instream Flows
- (e) Other Recent Measures
- (f) Maintenance Activities
- (g) Ongoing Agency Consultation

IV. Investigation of Potential Additional Protection and Enhancement Measures

- (a) Literature Search of Field Measurements of Salmon Fry/Smolt/Kelt Survival at Similar Hydroelectric Units
- (b) Additional Debris Management Measures
- (c) Upstream Passage Measures
- (d) Downstream Passage Measures
- (e) Little River Habitat Improvements
- (f) Bird Predation
- (g) Predation by Resident Fish
- (h) Instream Flows

V. Proposed Interim Protection Measures and Monitoring

VI. Implementation Provisions

- a. Effective Date and Schedule
- b. Requirements and Funding
- c. Monitoring and Reporting
- d. Adaptive Management

ATTACHMENT 2

Project Description

Section III

Project Description

3.1 Project Facilities Description

The Pejepscot Hydroelectric Project (Project) consists of the dam/spillway, fish passage facilities, two powerhouses, a sheet-pile floodwall, and ancillary equipment. The Project is owned by Teton Power Funding, LLC, Topsham Hydro Partner Limited Partnership, and Topsham Hydroelectric Generating Facility Trust No. 1 and is operated by Topsham Hydro Partners (Topsham Hydro) and is licensed by the Federal Energy Regulatory Commission (FERC) as project No. 4784-ME. The Project has a drainage area of 3,420 square miles and, at normal pool elevation of 67.5 feet, has a surface area of 225 acres and gross storage of 3,278 acre-feet. Average annual inflow to the reservoir is 6,800 cubic feet per second (cfs).

3.1.1 Project Location

The Project is located on the Androscoggin River in the Village of Pejepscot in the Town of Topsham, and is about 4 miles upstream of the city of Brunswick, Maine. The Project straddles the border between Cumberland and Sagadahoc counties.

3.1.2 Pejepscot Dam

The Pejepscot Dam is a 560-foot-long, 48-foot-high, rock- and gravel-filled, timber-crib, overflow structure with a sheet-pile cutoff to bedrock along the upstream side. The cribs are topped with a 5-foot-thick reinforced concrete slab to protect the dam from erosion during periods of high river flow. At the right (west) end of the dam where the abutment rock level is high, there is no cribwork, and the dam consists of a low, mass-concrete section. The dam is abutted on the right by a high bedrock outcrop and on the left (east) by a mass-concrete and stone-masonry pier.

3.1.3 Spillway

Spillway capacity is provided by overtopping the crest of the dam. The crest is equipped with five, 96-foot-long by 3-foot-high, hydraulically operated, bascule gates separated by concrete piers. The gates can be operated automatically or manually. The hydraulic pump units that operate the gates are contained in the mass-concrete pier forming the left abutment of the dam. The crest gate seals are heated to permit operation of the gates during cold weather, including movement when subjected to heavy ice pressure.

The project has a spillway discharge capacity of 95,000 cfs, which the October 1998 Safety Inspection Report produced by Acres lists as the value of the Inflow Design Flood (IDF) in Section VII.C of the Safety Inspection Report, and states that *the spillway capacity is considered adequate from the standpoint of public safety.* Acres notes that overtopping of the dam does not occur until the headwater reaches elevation 81 feet, at which point the spillway discharge is

approximately 110,000 cfs. At flows above 110,000 cfs up to the PMF flow of 225,000 cfs Acres states that *there is no potential for a sudden, uncontrolled release of water from the project due to a structural failure or formation of a breach due to overtopping flows.*

3.1.4 Non-Overflow Water-Retaining Structures

Non-overflow water-retaining structures include the powerhouse/intakes and the left upstream sheet-pile wall.

3.1.5 Intakes

The Project has two separate intake structures, the old powerhouse intake and the new powerhouse intake, both of which are integral with the powerhouses.

3.1.6 Powerhouses

The powerhouses at the Project include an old (original) powerhouse that was constructed in 1898, and a new powerhouse that was constructed from 1985 to 1987. The combined installed capacity of the four generating units is 14,575 kilowatts (kW).

The original (northerly) powerhouse contains three rehabilitated horizontal Francis units (identified as Unit Nos. 21, 22, and 23) with a combined output capacity of about 1.6 megawatts (MW). Each of the units has an intake gate for dewatering, which is operated with a rack-and-pinion gear-type hoist. The tailrace water passage for the three units (tailrace B) can be isolated from the downstream tailwater by means of a bulkhead-type gate, which is operated from the new powerhouse intake deck using a mobile crane.

Construction of the new powerhouse was completed in 1987 and it contains turbine-generator Unit No. 1. The vertical-shaft, low speed, adjustable-blade, propeller type (Kaplan) turbine is rated at 12,975 kW (17,400 horsepower). The turbine has four blades which are 216.5 inches in diameter; it rotates at 82 rpm; and the maximum flow through the turbine is 7,500 cfs. The direct-drive synchronous generator is rated at 13,000 kVA at 0.95 power factor. The integral intake and powerhouse foundation are constructed of mass and reinforced concrete, and the intake and powerhouse substructure forms the water passages for Unit 1. Water passages for the unit consist of an intake, semi-spiral case, a steel draft tube liner, and a draft tube.

3.1.7 Fish Passage Facilities

The Pejepscot Hydro Project was constructed with both upstream and downstream fish passage facilities to aid the upstream movement of migratory fish. The design was reviewed and approved by State and Federal agencies before being approved by FERC. After construction, the fish passage facilities were tested for efficiency and approved by FERC

The upstream fish passage facility is a vertical lift (elevator) that lifts migratory fish in a hopper about 30 feet vertically from near the powerhouse tailrace to reservoir level behind the diversion dam. The lift hopper is about 20 feet long and 7 feet wide with a sloping bottom that assists in

removal of the fish from the hopper. The inlet to the hopper is a V-trap about eight (8) inch wide by eight (8) feet high opening and a closure gate. In front of the entry gate there are four attraction pumps under a grating that create an additional flow up to 160 cfs through the entry channel to attract the fish to the lift. These pumps can be sequenced to change the volume of water passing through the entry channel, depending on the flow out of the powerhouse tailrace.

The lift basket discharges the fish into a metal channel about six (6) feet wide and eight (8) feet high. The channel is approximately 110 feet long from the lift hopper to the gate at the dam. Along the channel is a viewing window to observe the fish along with a crowding panel that moves the fish closer to the window for viewing. There is a continuous flow of about 30 cfs from the reservoir to the lift basket to attract the fish to the reservoir.

The downstream fish passage facilities consist of two entry weirs (one on either side of the turbine intake) with attraction lights near the water surface. From each weir an outlet pipe transports the fish in water down to the water below the dam. The weir gates are four (4) feet wide and are part of an inlet box with the outlet pipe located on the side opposite the weir. The right side weir has a 30 inch diameter transport pipe and the left side weir has a 24 inch diameter transport pipe. Both pipes have a free discharge to the water below the dam.

3.2 Project Operations

3.2.1 Normal Turbine Operation

The Pejepscot Hydroelectric Project is operated as a run of the river project. The main turbine/generator unit (Unit 1) is operated on pond level control. The Unit 1 controls adjusts the turbine wicket gates to main a preset pond level with is normally elevation 67.3 feet or 0.2 feet below the top of the spill gates. When Unit 1 nears its maximum flow capacity of 7,550 cfs, one or more of the three small units in the old powerhouse (Units 21, 22 and 23) is manually started and set at its best efficiency point near the maximum turbine flow. Unit 1 maintains pond level at the set point until it is at its maximum capacity and then the pond level begins to increase. The small units are mainly operated during high spring runoff and after large storm events that increase river flow. They are also operated during maintenance of Unit 1.

When the pond level reaches elevation 69.0 feet (1.5 feet above the spill gates), the gates begin to lower starting with Gate 1, closest to the powerhouse. The gates operate on pond level control and as flow increases they maintaining the pond level of 69.0 feet until all 5 gates are open. When the flow starts decreasing and the pond level drops to elevation 68.0 feet the gates start to close to maintain a level above 68.0. When all 5 gates are closed then the pond is again on turbine pond level control until the pond level exceeds elevation 69.0.

3.2.2 Fish Passage Facilities Operation

The upstream passage is started manually when the Maine Department of Marine Resources (MDMR) notifies the plant operator to begin the seasonal operation. The lift is operated automatically to lift the fish hopper every 2 hours beginning at 8 am for a total of 5 lifts per day. The four (4) attraction pumps are on automatic operation to adjust the number of pumps

operating with the flow coming through the turbine and out the tailrace. There is a preset weir in the channel that provides an attraction flow through the channel and hopper. This attraction flow was set per the USFW recommendations. The channel from the hopper to the reservoir is opened when the seasonal operation is started. The gates in the channel that allow fish to be counted through the observation window are left open unless they are being used for counting. There is no active counting of fish at the plant and the counting facilities have only been used for efficiency tests. The upstream lift facility is operated until MDMR notifies the plant operator that the facility can be stopped.

The weirs to the downstream passage facilities are operated per the MDMR letter of June 18, 2009. The gates are open on April 1 or as soon as river conditions allow. They are operated until December 31 or as long as river conditions allow.

3.2.3 Fish Passage Facilities Maintenance

The general maintenance of the fish passage facilities is completed in the winter months. The attraction pumps are removed, tested and inspected. Repairs are made as needed and all 4 pumps have been replaced between 2006 and 2009. The pumps are stored in the powerhouse until they are reinstalled in March. The lift, hopper and other metal parts are inspected and replaced as needed. The lift motor is inspected and tested as are all the cables.

The downstream weirs have trash racks in front of the weirs and these trash racks can be plugged by large debris in high flows. This debris is cleared as soon as river conditions allow safe access. In most cases debris plugging only happens at high flow when there is spill over the spillway which allows down stream passage.

ATTACHMENT 3

September 27, 2010 Meeting Notes

Meeting Notes

Location:	NMFS' Maine Field Office
Date:	September 27, 2010
Attendance:	Jeff Murphy, NMFS Mark Isaacson, MHG John Devine, HDR|DTA
Projects:	Worumbo Project (FERC No. 3428) / Pejepscot Project (FERC No. 4784)

On this day, Mark Isaacson and John Devine met with Jeff Murphy to informally discuss a potential path forward for Miller Hydro Group (MHG)'s Worumbo Project and Topsham Hydro Partners (THP)'s Pejepscot Project, both located on the Androscoggin River upstream of NextEra's Brunswick Project. John Devine was representing both Worumbo and Pejepscot projects.

Jeff brought Mark and John up to date with the general process for evaluating hydro project ESA compliance and mentioned that the plan to use the Section 7 consultation process was acceptable. He described that any needed Incidental Take permit would follow from a NMFS Biological Opinion (BiOp) which could follow from MHG's and THP's draft biological assessments. Jeff also brought Mark and John up to date on the Recovery Plan being drafted by the USFWS. He pointed out that the Recovery Plan will cover three units, but remain a single Plan document. The schedule is to have the Recovery Plan completed in the spring of 2011.

Mark and John described the two hydro projects very generally, confirming that both operated in a run-of-the-river mode. They also covered the normal process for upstream and downstream fish passage operations, including regular consultation with Maine Department of Marine Resources regarding operating dates for the fishways.

John Devine then provided a summary of a proposed approach to preparing an interim species protection plan. On Worumbo, studies done in relicensing were discussed, including Zone 8 pool studies. Jeff asked if salmon were considered; neither Mark nor John could recall and agreed to look into that. Jeff suggested that future fishway monitoring would be important and suggested expanding the proposed assessment of predation factors. Jeff advised that the Section 7 process needs quantifications, but can be based on available existing data and information with follow-up monitoring. Water quality data availability, especially DO and temperature was discussed. Jeff suggested a stepwise approach to the assessment of measures and the draft BA, continuing to consult as progress is made.

The overall schedule was discussed and it is expected that 2011 will be a busy year for both the Worumbo and Pejepscot ESA efforts. Jeff expressed an interest in a site visit after the Project Descriptions and the final outline of the draft BAs are issued.