

APPENDIX C

Winchendon Hydroelectric Project

Fish Passage and Protection

“1) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?”

The Facility is in compliance with mandatory fish passage prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by resource agencies after December 31, 1986.

Section 30(c) of the Federal Power Act and Section 408 of the Energy Security Act require the inclusion in the Hunts Dam exemption from licensing, all terms and conditions that are prescribed by state and federal fish and wildlife agencies to prevent loss of, or damage to fish and wildlife resources.

Agency comments with respect fish passage and protection are as follow:

- Agency Comments of the original FERC Exemption (see Appendix 1-6-1 for Original Exemption) state:
 1. “The Exemptee shall provide fish passage facilities at this project when prescribed by the Fish and Wildlife Service and/or the Massachusetts Division of Fisheries and Wildlife. Design, construction and operation of the fish-passage facilities will be the responsibility of the Exemptee; however, approval of the design by the Fish and Wildlife Service will be necessary. Any additional instantaneous flows for operation of these facilities will be provided by the Exemptee, as prescribed by the Fish and Wildlife Service.”
- Agency Comments from the 2013 FERC Amendment (see Appendix C-1-2 for Amendment) state:
 1. Prior to filing the amendment application with the Commission, the Exemptee consulted with U.S. Fish and Wildlife Service (FWS) and the Massachusetts Division of Fisheries and Wildlife (Massachusetts DFW). Both agencies stated they had no objections to the proposed changes, with the understanding that the hydraulic capacity and the minimum flow requirement were not being altered.
- On March 28, 2013 Melissa Grader of the US Fish and Wildlife Service wrote: “Fish Passage - The FWS terms and conditions require that the Exemptee provide fish passage

facilities when prescribed by the FWS and/or MA DFW. To date, neither agency has triggered this fish passage requirement through the FERC process. As O’Connell is well aware, efforts are underway to implement passage for the American eel at the first project on the river (O’Connell’s New Home Project). However, WH does not expect to trigger eel passage at the Hunts Pond Project (which is well upstream of New Home with a number of dams in between) within the term of any initial LIHI certification.” Please refer to Appendix C-1-2 for the USFW document.

On April 23, 2013 Caleb Slater of the MADFW wrote: “2) There are no current fish passage requirements, however we would like a commitment to upstream and downstream passage protections for American eel when determined to be necessary by the Division and/or USFWS.” Please refer to Appendix C-1-3 for the MADFW document.

Fish Passage and Protection related responses are identified in the attached supporting documentation by box or tag.

Appendix C Fish Passage and Protection –
Index to Supporting Documents

<u>1-6-1</u>	<u>2/19/1985 FERC Exemption</u>
<u>C-1-1</u>	<u>8/22/2013 FERC Amendment</u>
<u>C-1-2</u>	<u>USF&W Email dated 3/28/2013</u>
<u>C-1-3</u>	<u>MADF&W Email dated 4/23/2013</u>

C-1-1 FERC Amendment dated 8/22/2013

20130822-3026 FERC PDF (Unofficial) 08/22/2013

144 FERC ¶ 62,155
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Winchendon Hydroelectric LLC

Project No. 8012-007

ORDER AMENDING EXEMPTION FROM LICENSING (5 MW OR LESS)

(Issued August 22, 2013)

1. On April 5, 2013, Winchendon Hydroelectric LLC, exemptee for the Hunts Pond Dam Hydroelectric Project No. 8012, filed an application to replace two cross-flow turbines with a total generator nameplate capacity of 320 kilowatts (kW) with a single double regulated Kaplan unit with a generator capacity of 100 kW. In addition, the exemptee is proposing to conduct repairs and maintenance as required by the Commission's Division of Dam Safety, and to temporarily draw down the head pond reservoir elevation for these repairs. The project is located on Millers River in Worcester County, Massachusetts.

Background

2. The exemption for the Hunts Pond Dam Hydroelectric Project was issued February 19, 1985, and amended June 27, 1991.¹ The project currently consists of: (a) the existing 16-foot-high, 184-foot-long, concrete Hunts Pond dam; (b) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.4 feet National Geodetic Vertical Datum (NGVD); (c) an intake structure; (d) a powerhouse containing two generating units having a total authorized installed capacity of 320 kW;² (e) a 200-foot-long 4.16-kV transmission line; and (f) appurtenant facilities. The annual generation of the project was originally estimated to be 593,663 kWh.

3. The additional capacity authorized in the June 27, 1991 Order Amending Exemption was never installed due to changes in ownership and bankruptcy. The current exemptee operates the project and maintains the facility at its original exemption capacity of 120 kW, and the project operates in a run-of-river mode.

¹*Mason & Parker Manufacturing Company, Inc.*, 30 FERC ¶ 62,181 (1985); and *Mason & Parker Manufacturing Company, Inc.*, 55 FERC ¶ 62,301 (1991).

²The June 27, 1991 Order Amending Exemption authorized a change in the project's total nameplate capacity, from 120 kW to 320 kW.

Proposed Action

4. As stated in their April 5, 2013 filing, the exemptee intends to replace the two cross-flow turbines with a combined authorized installed capacity of 320 kW, with one new double-regulated Kaplan turbine and a 100 kW nameplate generator. With the turbine replacement, the design hydraulic capacity value will be reduced from the existing units at approximately 172 cubic feet per second (cfs) to the new unit at approximately 110 cfs. The operation of the site will remain run-of-river after the construction is completed. The exemptee reports that the historical data shows the energy production to be approximately 305,000 kWh per year. The exemptee states that the new Kaplan turbine is estimated to produce an additional 201,000 kWh per year more than the existing installed units, resulting in an estimated new annual production value of 506,000 kWh.

5. In addition to the turbine replacement, the exemptee plans to address maintenance and repairs to spalled concrete and stoplog and needle beam replacement at the dam, as required by the Commission's Division of Dam Safety's New York Regional Office (D2SI New York Regional Office). The exemptee plans to begin construction in the summer of 2013, with the possible project completion date of December 2013, or summer of 2014 if there are any construction delays.

6. In order to accommodate the maintenance and repairs as described above, the exemptee plans to temporarily draw down the head pond reservoir from a normal operating elevation of 954.6 feet NGVD to below the crest of the dam, located at 948.2 feet NGVD, with a lower limit of 944.48 feet NGVD, which is the bottom of the intake channel. The exemptee states that flows through the project will be coordinated with river flows and rain events to maintain minimum flows or inflow at all times.

Consultation

7. Prior to filing the amendment application with the Commission, the exemptee consulted with U.S. Fish and Wildlife Service (FWS) and the Massachusetts Division of Fisheries and Wildlife (Massachusetts DFW). Both agencies stated they had no objections to the proposed changes, with the understanding that the hydraulic capacity and the minimum flow requirement were not being altered.

Fish
Passage &
Protection
Related
Comment

8. The U.S. Department of the Interior (Interior), on behalf of the FWS, is requesting that Condition No. 2 of the August 24, 1984 mandatory terms and conditions for the project be modified as follows, to clarify that the mode of project operation should be instantaneous run-of-river:

The exemptee shall operate the project in an instantaneous run-of-river mode, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the exemptee, or for short periods upon mutual agreement between the exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife.

9. The Interior is also requesting that, based on Condition No. 8 of the mandatory terms and conditions³ for the project, the exemptee develop a compliance monitoring plan for its approval, within three months of completion of project construction.

Public Notice

10. On May 13, 2013, the Commission issued public notice that the amendment application was accepted for filing, and soliciting motions to intervene, protests, comments and terms and conditions. In response to the Commission's public notice, a filing was made by the Massachusetts DFW on May 31, 2013, stating it has no objection to the exemptee's proposal.

Administrative Conditions

Construction

11. To ensure a safe and adequate project, as shown in ordering paragraph (F), the exemptee must perform all turbine replacement work in consultation with the Commission's D2SI New York Regional Office. The exemptee shall not start any construction activities for the turbine replacement before receiving a prior authorization from the Commission's D2SI New York Regional Office.

12. In addition, as shown in paragraph (G), the exemptee shall conduct all maintenance and repairs to spalled concrete, stoplog and needle beam maintenance and replacement at the dam in coordination with the Commission's D2SI New York Regional Office. The exemptee shall not start any construction activities for the repairs and

³ On February 4, 1985, the Interior added an eighth condition to the project's mandatory terms and conditions.

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maintenance required by D2SI, before receiving prior authorization from the Commission's D2SI New York Regional Office.

Discussion

13. Upon completion of the turbine replacement, the project will have a total installed capacity of 100 kW. The decrease in the generating capacity would not result in any additional adverse environmental effects. Therefore, the exemption will be amended, as stated in ordering paragraph (B), to show the project's total authorized nameplate capacity to be 100 kW.

14. In addition, the proposed drawdown for construction requested by the Commission's D2SI New York Regional Office will be authorized to occur for twelve weeks from the start of construction of the turbine replacement, along with maintenance and repairs to spalled concrete as required by D2SI. In ordering paragraph (C) we are granting a temporary drawdown to conduct the turbine replacement and necessary required repairs for twelve weeks from the start date of construction. In the event that the drawdown will need to last longer than twelve weeks, we are requiring the exemptee to file a request for an extension of time. Accordingly, ordering paragraph (H) of this order requires the exemptee to commence construction of the project works authorized in this order within 1 year of the issuance date of this order and shall complete construction within 2 years of the issuance date of this order.

15. The Interior's request to modify Condition No. 2 of the August 24, 1984 mandatory terms and conditions is within the scope of the Interior's right to modify the terms and conditions⁴, and is set forth in Appendix A of this order and incorporated into the exemption by ordering paragraph (D). In ordering paragraph (D), the Commission requires that the exemptee operate the project in an instantaneous run-of-river mode at all times, as required by the FWS. In addition, if the run-of-river mode is modified for an operating emergency or upon mutual agreement with the agencies, we are requiring the exemptee to notify Commission within 10 days of each such incident. In ordering paragraph (E), the Commission is requesting that the exemptee submit a compliance monitoring plan, as required by Condition No. 8 of the Interior's terms and conditions, for Commission approval within 3 months of the completion of construction of the proposed project changes.

⁴ As stated in Condition No. 6 of the Interior's mandatory terms and conditions, the Interior has the right to modify the terms and conditions as needed to protect fish and wildlife resources.

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Conclusion

16. The exemptee's proposal to replace two cross-flow turbines with a total authorized capacity of 320 kW to a single double regulated Kaplan unit with a generator capacity of 100 kW would improve the efficiency of the project, while having no significant impact on the environment. In addition, the repairs to spalled concrete and stoplog and needle beam replacement at the dam are necessary and required by the Commission's D2SI New York Regional Office. The need to draw down the project head pond reservoir from a normal operating elevation is necessary to safely conduct the repairs and maintenance and to replace the turbines. The exemptee does not anticipate environmental impacts due to construction activities and has submitted all proposed activity to the FWS and Massachusetts DFW for review. Therefore, the amendment application will be granted, as considered herein.

The Director orders:

(A) The exemption for the Hunts Pond Dam Hydroelectric Project, FERC No. 8012, is amended as provided by this order, effective the day this order is issued.

(B) The project works as shown in paragraph (j) of Appendix A of the exemption are revised to the following:

The project consists of: (a) the existing 16-foot-high, 184-foot-long, concrete Hunts Pond dam; (b) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.4 feet National Geodetic Vertical Datum (NGVD); (c) an intake structure; (d) a powerhouse containing one generating unit having a total authorized installed capacity of 100 kW; (e) a 200-foot-long 4.16-kV transmission line; and (f) appurtenant facilities. The annual generation of the project is estimated to be 506,000 kWh.

(C) The exemptee may temporarily reduce the head pond reservoir from a normal operating elevation of 954.6 feet NGVD to below the crest of the dam, located at 948.2 feet NGVD, with a lower limit of 944.48 feet NGVD. The drawdown is authorized for twelve weeks from the start of the project construction described above. If the temporary modification is to last longer than twelve weeks, a request must be filed with the Commission for an extension of time. In addition, a letter is to be filed with the Commission when normal operating conditions resume.

(D) The exemptee shall operate the project in an instantaneous run-of-river mode, subject to the conditions submitted by the U.S. Department of the Interior, as those conditions are set forth and modified in Appendix A to this order, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be

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temporarily modified if required by operating emergencies beyond the control of the exemptee, or for short periods upon mutual agreement between the exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife. If the run-of-river mode is modified, the exemptee is required to notify the Commission within ten days of each such incident.

(E) The exemptee shall file, for Commission approval, a compliance monitoring plan. The compliance monitoring plan shall be filed within three months of completion of construction and shall show documentation of consultation with the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife at least 30 days prior to filing.

(F) The exemptee must perform all work regarding the turbine replacement in consultation with the Commission's Division of Dam Safety and Inspections New York Regional Office. The exemptee shall not start any construction activities for the turbine replacement before receiving a prior authorization from the Commission's New York Regional Office.

(G) The exemptee must perform all work regarding the spalled concrete repairs as required by the Commission's Division of Dam Safety and Inspections New York Regional Office. The exemptee shall not start any construction activities for the required repairs and maintenance before receiving a prior authorization from the Commission's New York Regional Office.

(H) The exemptee shall commence construction of the project works authorized in this order within 1 year of the issuance date of this order and shall complete construction within 2 years of the issuance date of this order.

(I) 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. § 825f (2006), and the Federal Energy Regulatory 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 exemptee's failure to file a request for rehearing shall constitute acceptance of this order.

Kelly Houff
Chief, Engineering Resources Branch
Division of Hydropower Administration
and Compliance

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APPENDIX A

U.S. Department of the Interior on behalf of
the U.S. Fish and Wildlife Service
Section 30(c) Conditions of the Federal Power Act
Filed on March 27, 2013

Modified Condition No. 2

1. The exemptee shall operate the project in an instantaneous run-of-river mode, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Exemptee, or for short periods upon mutual agreement between the Exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife.

C-1-2 USF&W Email dated 3/28/2013

Fisk, Steve

From: Grader, Melissa <melissa_grader@fws.gov>
Sent: Thursday, March 28, 2013 1:35 PM
To: Fisk, Steve
Cc: William P. Short (w.shortiii@verizon.net); Berry, Steve; Caleb Slater; Robert Kubit
Subject: Re: Winchendon Hydroelectric Improvements LIHI

Hi Steve,

I've had a chance to go through the Hunts Pond Project file and can offer the following comments regarding the LIHI consultation criteria you have requested our input on:

Project Details

Project features include an existing 16-foot-high dam comprised of a concrete weir topped with stoplogs, a slide gate leading to a powerhouse containing two turbines with an installed capacity of 120 kW (operating at flows from 8 cfs up to 172 cfs), and a 13 acre headpond. The project operates in a true run-of-river mode. There is a short 50-foot bypass reach with no flow requirement.

Project History

The project was issued an exemption on 2/19/85. By letter dated August 24, 1984, the U.S. Fish and Wildlife Service issued seven mandatory terms and conditions (T&Cs) for the proposed project. On February 4, 1985 the Department of the Interior added an eighth condition. Service conditions include: providing fish passage when prescribed by the Service and/or the Massachusetts Division of Fisheries and Wildlife; providing an instantaneous minimum discharge below the project of at least 25 cfs, or inflow, whichever is less; and requiring the Exemptee to submit a compliance monitoring plan to the Service within six months from the date of issuance of an exemption.

In 1991 the exemption was amended to increase capacity to 320 kW, however that upgrade never took place. In August of 1996 Behrens Energy Systems, Inc. sold the project to O'Connell Engineering & Financial Inc. (O'Connell). Upon acquiring the project, O'Connell automated the control system, including remote control capabilities. On March 12, 2013 O'Connell notified the FWS of its intent to undergo turbine replacement and dam maintenance/repair activities at the project. O'Connell proposes to replace the two crossflow turbines with one double regulated Kaplan unit. The new turbine/generator would have a nameplate rating of 100 kW and operate at flows from 10 cfs to 110 cfs. The Service is in the process of responding to this request.

A review of the project file and recent submittals on FERC Online indicates that there have been no documented compliance issues with the project (other than the below-noted flow monitoring plan).

LIHI Consultation Criteria

1. Endangered Species

There are no federally listed endangered species within the project area.

2. Exemption terms and conditions

Bypass flow

The project has a short 50-foot-long bypass reach. Due to the short length of the reach and backwatering from the tailrace, no dedicated flow is required to be spilled over the dam.

Impoundment Fluctuations

According to O'Connell, the project operates run-of-river, which means the headpond is not drawn down for the purposes of generation. The normal water surface elevation is at the top of the stoplogs. This mode of operation should minimize impoundment fluctuations.

Flow Monitoring Plan

The terms and conditions submitted by the FWS for the project (per letter of 2/4/1985) required the Exemptee to present a Flow Monitoring Plan to the Service for approval within six months from issuance of an exemption. Based on our file review as part of the LIHI consultation process for the Hunts Pond Project, we find no documentation that this flow plan was ever developed or approved by our office.

Fish Passage

The FWS terms and conditions require that the Exemptee provide fish passage facilities when prescribed by the FWS and/or MA DFW. To date, neither agency has triggered this fish passage requirement through the FERC process. As O'Connell is well aware, efforts are underway to implement passage for American eels at the first project on the river (O'Connell's New Home Project). However, we do not expect to trigger eel passage at the Hunts Pond Project (which is well upstream of New Home with a number of dams in between) within the term of any initial LIHI certification.

Water Quality

We are aware of no data documenting that Class B Cold Water Fishery (BCWF) water quality standards are being maintained (or violated) within the project area.

Shoreland Management Plan

The Service, to date, has not required a Shoreland Management Plan pursuant to our statutory authority under Section 30(c) of the Federal Power Act.

Comments

Based on our review of the project file, it appears that the only outstanding issue regarding terms and conditions prescribed by this office for the project relate to developing a flow monitoring plan. Our files indicate that this requirement has not yet been fulfilled. Therefore, the Service recommends that LIHI certification only be granted if it contains conditions requiring the Exemptee to fulfill this obligation. O'Connell should provide a draft Operations and Flow Monitoring Plan for Service review and approval within three months of receiving LIHI certification.

Fish
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We hope these comments have been responsive to your requests regarding Low Impact Hydropower Certification criteria. If you have any questions or require additional information please feel free to contact me.

Regards,
Melissa

On Wed, Mar 20, 2013 at 9:16 AM, Fisk, Steve <SFISK@oconnells.com> wrote:

Hello Melissa,

Attached are letters requesting comments for LIHI Application Appendices, A Minimum Flows; C Fish Passage; D Watershed Protection; and E Endangered Species. Please call me if you should have any question regarding the attached information.

C-1-3 MADF&W Email dated 4/23/2013

Fisk, Steve

From: Slater, Caleb (MISC) <caleb.slater@state.ma.us>
Sent: Tuesday, April 23, 2013 3:18 PM
To: Fisk, Steve
Cc: Cohen, Russ (MISC); Grader, Melissa
Subject: RE: Winchendon Hydro

Steve,

I have reviewed the information you sent me on the Hunts Pond project (FERC# 8012).

1) As the project operates as Run of River and has no significant bypass reach it is compliance with flow recommendations.

2) There are no current fish passage requirements, however we would like a commitment to upstream and downstream passage protections for American eel when determined to be necessary by the Division and/or USFWS.

3) The facility is not in violation of any state required shoreline management plan.

Caleb

Caleb Slater, PhD
Anadromous Fish Project Leader
Massachusetts Division of Fisheries and Wildlife PLEASE NOTE NEW FIELD HEADQUARTERS ADDRESS (Phones and Emails have not changed.) Mass. Division of Fisheries & Wildlife
100 Hartwell Street, Suite 230
West Boylston MA 01583
508-389-6331
www.mass.gov/masswildlife

-----Original Message-----

From: Fisk, Steve [mailto:SFISK@oconnells.com]
Sent: Friday, April 19, 2013 1:33 PM
To: Slater, Caleb (FWE)
Subject: Winchendon Hydro
Importance: High

Hello Caleb,

It has been a busy week for me as well. I am just following up on my letters submitted to you on 3/21 regarding request for comment on various LIHI topics. Have you had a chance to review the submitted information and do you have any questions or comments? Thanks,

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