

160 FERC ¶ 62,154

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Ware River Power, Inc.

Project No. 3127-023

ORDER AMENDING EXEMPTION

(Issued August 18, 2017)

1. On January 27, 2016, as supplemented April 24, 2016, and March 9, 2017, Ware River Power, Inc., exemptee for the Ware River Hydroelectric Project No. 3127, filed an application to amend the project's exemption. The purpose of the application is to, in part, increase the project's average annual generation. The project is located on the Ware River in Hampshire County, Massachusetts. The project does not occupy any federal lands.

Proposed Amendment

2. The Ware River Project has an upper and a lower development with a combined total authorized installed capacity of 2,140 kilowatts (kW). The upper development is authorized with four turbine-generator units with a total installed capacity of 1,480 kW.¹ The lower development is authorized with four turbines connected to two generators with a total installed capacity of 560 kW.²

3. In its amendment application, the exemptee says the actual total generating capacity of the project is 1,600 kW consisting of 1,350 kW at the upper development and 250 kW at the lower development. However, this is different from the exemption as currently approved by the Commission. The exemptee does not explain how or when the current capacity became different from the authorized installed capacity. This issue is discussed further in the project description section below.

4. The exemptee does not propose any changes to the project's upper development. At the lower development, the exemptee proposes to replace the existing 250-kW unit with a new 280-kW unit. The exemptee also proposes to install a second unit rated at 110

¹ *Pioneer Hydropower Incorporated* 68 FERC ¶ 62,037 (1994).

² *Pioneer Hydropower Incorporated*, 18 FERC ¶ 62,212 (1982).

kW to provide minimum flows. In addition, the exemptee proposes to replace an existing 30-foot-wide, 10-foot-deep trashrack with a 50-foot-wide, 10-foot-deep trashrack that would maintain the existing 1.5-inch clear-spacing between the trashrack bars.

Pre-Filing Consultation

5. In December 2014, the exemptee entered into preliminary discussions with the Massachusetts Division of Fisheries and Wildlife (Massachusetts DFW) regarding its proposed amendment. The Massachusetts DFW stated by letter dated January 2, 2015, that the proposed changes would not violate the terms and conditions of the 1982 exemption order. By e-mail dated March 3, 2015, the Massachusetts Department of Environmental Protection (Massachusetts DEP) determined that the exemptee's proposal would not alter compliance with Massachusetts water quality standards.

6. On October 6, 2015, the exemptee held a teleconference with the Massachusetts DFW and the U.S. Fish and Wildlife Service (FWS). The agencies recommended that the application contain an evaluation of pre- and post-modification spillway flows. The exemptee's application as supplemented contains an analysis of the spillway flow changes that would occur should the proposed amendment be approved.

Public Notice

7. On June 1, 2016, the Commission issued a public notice soliciting comments, recommendations, and protests by July 1, 2016. The Massachusetts DFW filed comments by letter dated April 22, 2016. In its comments, the Massachusetts DFW recommended the exemptee develop for its approval a state-listed species protection plan (protection plan). The protection plan must include: 1) the maximum outflow to be used when lowering the project's impoundment, 2) procedures to ensure the passage of minimum flows from the lower development, and 3) if state-listed species are detected in the lower or upper impoundments, a provision to engage a qualified mussel-biologist to develop and implement a mussel salvage and relocation plan. The Massachusetts DFW's condition is incorporated into the exemption via ordering paragraph (H).

8. On July 6, 2016, the FWS filed comments recommending the exemptee provide additional information on the minimum and maximum hydraulic capacity of the proposed new unit. The exemptee's March 9, 2017 supplement contains this information. Pursuant to section 30(c) of the Federal Power Act (FPA),³ the FWS provided an

³ Section 30(c) of the FPA requires the Commission to include in any exemption from licensing such terms and conditions as the U.S. Fish and Wildlife Service, National Marine Fisheries Service and the state fish and wildlife agency each determine are appropriate to prevent loss of, or damage to, fish and wildlife resources.

amended operating condition and two additional conditions requiring: (1) a post-amendment water quality monitoring survey and (2) the development of an operations monitoring plan to protect fish and wildlife affected by the amended project. FWS's amended conditions are incorporated into the exemption via ordering paragraph (G).

National Historic Preservation Act

9. Under section 106 of the National Historic Preservation Act and its implementing regulations, 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 (National Register) 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 State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

10. The project is located in a historic mill building that is part of the Ware Historic Millyard District, a property listed on the National Register. The exemptee determined that the proposed undertaking would not adversely affect historic properties. By letter dated December 19, 2016, the exemptee requested concurrence on its determination from the Massachusetts Historical Commission.⁴ By letter filed with the Commission on January 9, 2017, the Massachusetts Historical Commission concurred with the exemptee's no adverse effect determination.

Environmental Review

11. We have reviewed the exemptee's amendment application and conclude the proposed action would have no effect on botanical resources, land use, recreation, socioeconomics, or historic properties as discussed above.

12. Botanical resources would not be affected because the proposed amended project would not affect vegetative cover along the impoundment. The proposed amended project does not include any modifications to the dam or to the long-term water surface elevation of the lower impoundment. Although the overall hydraulic capacity of the lower development would increase, the project would continue to operate in an instantaneous run-of-river mode. Therefore, there would be no effect on the long-term lower impoundment water surface elevation.

⁴ The Massachusetts SHPO is an office of the Massachusetts Historical Commission.

13. Land use, recreation, and socioeconomics would not be affected by the proposed amendment. Land use would be unaffected because the unit replacement and new minimum flow unit installation would be confined to the interior of the existing powerhouse and the trashrack replacement would be confined to the power canal. As a result of steep shorelines, adjacent manufacturing facilities, a small impoundment size, difficult access, and shoreline owned by the exemptee, the project facilities are inaccessible to the public and as a result, there would be no effect on recreation. Socioeconomics would not be affected due to the limited scope of the proposed amendment.

Water and Aquatic Resources

14. The estimate flow duration statistics for the Ware River at the lower development dam are based on the drainage basin ratio between the Gibbs Crossing United States Geological Survey (USGS) flow Gage No. 01173500 and the drainage area at the lower development dam.⁵ The 85 and 80 percent exceedance flow in the Ware River at the lower development dam are estimated to be 54 and 67 cubic feet per second (cfs), respectively, while the 10 percent exceedance flow is estimated to be 561 cfs. The median flow is estimated to be 181 cfs.

15. As proposed, replacing the existing unit and installing a new minimum flow unit would increase the range of flows over which the lower development can generate power. Currently the lower development can generate power between 120 and 239 cfs. With the proposed replacement unit and new minimum flow unit the project would be able to generate power between 61 and 341 cfs. The expanded generating range would decrease the amount of time that flows are passed over the spillway. Under current conditions, flow over the spillway occurs on average 252 days per year. Under the proposed action, flow over the spillway would occur on average 74 days per year.

16. The FWS, in its letter filed on July 6, 2016, notes that the reduced frequency of spill flows may adversely affect water quality in the Ware River. Therefore, pursuant to section 30(c) of the FPA, the FWS conditions the proposed amendment to include a three-year post-amendment water quality monitoring survey. The FWS's water quality survey would be developed after consultation with, and would require the approval of, the FWS and Massachusetts DEP. The survey would be required during the first low-flow season after the replacement and new minimum flow unit become operational. If the results of the survey indicate that the lower development cannot maintain applicable

⁵ The drainage basin area at the lower development dam is 166 square miles and the drainage basin at the Gibbs Crossing USGS gage is 197 square miles, resulting in an adjustment factor of 0.84.

water quality standards, the exemptee would be required to develop and implement measures sufficient to maintain water quality standards.⁶

17. Currently, the existing trashrack structure is challenging to maintain in a clean condition during certain seasons due to water velocity, orientation to river flow, and cleaning deck geometry. With the proposed new higher flows, the trashrack structure would become less effective at excluding debris and fish unless modifications are implemented. The exemptee proposes to increase the angle to flow of the trashrack structure to encourage debris to move toward the main river channel and continue moving downstream. The new 500-square-foot trashrack would be 200 square feet larger than the existing 300-square-foot trashrack. The approach velocity at the new trashrack would be 0.85 feet per second (fps) which is slightly less than the existing approach velocity of 0.9 fps.

18. Changing the size and orientation to flow of the trashrack structure would continue to minimize fish entrainment by maintain an approach velocity similar to the existing approach velocity and increasing the sweeping velocity across the trashrack. The increased sweeping velocity would also decrease debris accumulation on the trashrack.

19. Pursuant to section 30(c) of the FPA, the FWS conditions the proposed amendment to clarify that the project must be operated in an *instantaneous* run-of-river mode where the water surface elevation of the project's impoundments is not drawn down for the purpose of generating power. The FWS also conditions the proposed amendment to require the exemptee to develop a plan to monitor and maintain instantaneous run-of-river operation at the project. As with the water quality survey, the FWS requires pursuant to section 30(c) of the FPA that the operation and monitoring plan be developed after consultation with, and receive the approval of, the Massachusetts DEP and the FWS. Operating the project in an instantaneous run-of-river mode would minimize impoundment fluctuations thereby protecting littoral habitats and maintaining the natural magnitude and periodicity of flows in the Ware River downstream of the project's two developments.

⁶ The Ware River in the vicinity of the Ware River Project is a Class B warm water stream <https://www.epa.gov/sites/production/files/2014-12/documents/mawqs-figures-tables.pdf> (visited July 20, 2017). The minimum dissolved oxygen standard for Class B warm water streams is 5.0 milligrams per liter. <http://www.mass.gov/eea/docs/dep/water/resources/07v5/2012calm.doc> (visited July 20, 2017).

Threatened, Endangered and Rare Species

20. The installation of the proposed new trashrack would require drawing down the lower development's impoundment about eight feet. After the drawdown, the remaining pool near the trashrack structure would be isolated from the rest of the impoundment and would be pumped out. The exemptee states that the area around the intake should have minimal sediment buildup due to the flow in the area of the intake. Any sediment present would be removed by hand.

21. The Massachusetts DFW, in their comment letter filed with the Commission on April 22, 2016, reports that the state-listed as threatened brook floater mussel (*Alasmidonta varicose*) and a state species of special concern creeper mussel (*Strophitus undulates*) occur, or were known to occur, in the Ware River in the vicinity of the project.⁷ No federally listed threatened or endangered species occur in the project vicinity.

22. To protect mussels in the upper or lower impoundment, the Massachusetts DFW conditions the proposed amendment to require a drawdown and mussel salvage and relocation plan for the proposed and any future drawdowns after consultation with the Massachusetts DFW. Elements of the plan must include, at a minimum, the development of the maximum allowed outflow during drawdowns, provisions to ensure the passage of minimum flows during drawdowns, and if state-listed species are detected, provisions to engage a qualified mussel-biologist to develop and implement a protection plan to salvage and relocated state-listed species before any drawdowns.

Administrative Provisions

Project Description

23. On March 7, 2017, the exemptee filed a supplement to its amendment application that includes a revised Exhibit A that only describes the lower development. In its supplement, the exemptee says that, with the proposed changes, the total installed capacity of the project would be increased from 1,600 to 1,740 kW. However, under the exemption as currently approved by the Commission, the authorized installed capacity is 1,480 kW for the upper development and 560 kW for the lower development, for a total authorized installed capacity of 2,140 kW. With the proposed changes, the total installed

⁷ A third mussel species, the triangle floater (*Alasmidonta undulata*) a Species of Greatest Conservation Need, as described in the Massachusetts State Wildlife Action Plan but not listed under the state Endangered Species Act, may also occur in the vicinity of the project <http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/state-wildlifeconservation-strategy.html>.

capacity would decrease to 1,870 kW.⁸ Also, the revised Exhibit A did not include a description of the upper development. Exhibit A must include a description of all project developments and facilities as required by 18 CFR section 4.107(c). Therefore, in ordering paragraph (C) we are requiring the exemptee to file a revised Exhibit A.

Exhibit Drawings

24. Under the authorized exemption there are three Exhibit B drawings (project boundary, which under current regulations are Exhibit G) and six Exhibit G drawings (general design drawings, which under current regulations are Exhibit F), labeled P-3127-1 through P-3127-9, sequentially. Some of these drawings are labeled preliminary and the exemptee has never filed as-built drawings for this project.

25. In its amendment application, the exemptee includes drawings that show both existing and proposed conditions for the lower development. The Exhibit F drawings are not in conformance with the Commission's regulations. Exhibit F drawings must show plan view, profile, and sections of the project features as required by 18 CFR section 4.41 (g). Also, the drawings must be prepared in accordance with 18 CFR section 4.39. In this order we are taking the opportunity to bring all the Exhibit drawings up to date with the Commission's current regulations. Therefore, in ordering paragraph (C) we are requiring the exemptee to file revised Exhibit F and G drawings for the entire project.

26. Finally, upon completion of the work authorized in this order, ordering paragraph (F) requires the exemptee to file revised Exhibits A, F, and G, as applicable, to show the as-built conditions of the project features.

Construction Related Articles

27. The exemptee proposes new construction in its amendment application. Paragraph (E) requires the exemptee to submit contract plans and specifications to the Commission's Division of Dam Safety, New York Regional Office for approval (D2SI-NYRO). The exemptee cannot start construction until D2SI-NYRO has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorizes start of construction.

Agency Conditions

⁸ The upper development with 1,480 kW plus the lower development with the proposed 390 kW equals 1,870 kW.

28. The Ware River Project's lower development is subject to the conditions filed with the Commission on January 27, 1982 by the FWS pursuant to section 30(c) of the FPA. In response to the exemptee's filing of its amendment application, the FWS filed a letter on July 6, 2016 amending condition 2 and adding two additional conditions. The Massachusetts DFW filed a condition April 22, 2016 pursuant to section 30(c). For administrative ease, all section 30(c) conditions pertaining to the Ware River Project are reproduced in appendices A and B and are attached to this order.

Conclusions

29. Replacing the existing unit and installing a new minimum flow unit at the lower development would increase the range of flows over which power generation could occur thereby increasing the average annual generation at the Ware River Project.

30. The ability to operate the lower development's powerhouse over a wider range of flows would decrease the frequency and magnitude of flows passing over the lower development dam. This reduction has the potential to have a minor adverse effect on water quality in the Ware River although there is no indication that water quality is affected by the project due to the short low-flow⁹ 25-hour retention time of the lower development's impoundment. The FWS's amended mandatory section 30(c) condition 2, requiring an instantaneous run-of-river operation, would maintain the development's short retention time while new condition 4, requiring a post-construction water quality survey, would determine any adverse effects, and if necessary, enable the identification of appropriate mitigation measures. The exemptee's proposed amendment includes provisions to continue to operate the project run-of-river and to develop and implement a post-construction water quality monitoring survey and, if necessary, mitigation measures.

31. The FWS's new condition 5 requires the exemptee to develop and implement a plan to monitor and maintain instantaneous run-of-river operation at the project. This plan would enhance the exemptee's compliance with amended condition 2. The exemptee's proposed amendment includes a provision to develop and implement an operation monitoring plan.

32. The larger trashrack structure and new orientation would enhance the trashrack's ability to shed debris by increasing the sweeping velocity across the face of the trashrack while maintaining essentially the same approach velocity. The increased sweeping velocity and the low approach velocity may enhance the effectiveness of the structure at preventing fish from entering the power canal, thereby reducing the potential for fish entrainment and subsequent potential for turbine mortality.

⁹ Calculated at the 90 percent exceedance flow.

33. The Massachusetts DFW's condition to develop, after consultation, and with the Massachusetts DFW's approval, a drawdown and mussel salvage and relocation plan would avoid or minimize any adverse effects from the proposed, or any future, draw down of the project's impoundments. The proposed amendment includes a provision to develop and implement a drawdown and mussel salvage and relocation plan for this and any future drawdowns.

34. We conclude that the exemptee's proposed amendment as conditioned by the FWS and Massachusetts DFW would have few if any environmental effect on the resources of the Ware River and would increase annual generation at the Ware River Project. The amendment application should be approved.

The Director orders:

(A) Ware River Power, Inc.'s amendment application filed January 27, 2016, as supplemented, and as modified in paragraphs (B) through (H), is approved.

(B) The project description of the upper and lower developments, found in the relevant public notice of each development that were attached to the orders authorizing these developments issued October 15, 1981, and February 12, 1982, respectively, is revised to read as follows:

Project Description: The Ware River Project consists of an upper development and a lower development with a total authorized installed capacity of 1,870 kilowatts (kW) consisting of 1,480 kW at the upper development and 390 kW at the lower development.

Upper Development: It consists of: (1) a 165-foot-long, 34-foot-high, concrete-capped, cut granite dam with provisions for 18-inch high flashboards; (2) an emergency spillway at the east abutment; (3) a 2-mile-long reservoir with a storage capacity of 746 acre-feet; (4) a 800-foot-long, 100-foot-wide, 4-foot-deep canal/head pond with a 115-foot-long overflow spillway and a gatehouse containing 5 vertical slide gates; (5) a 100-foot-long inlet culvert extending from the canal; (6) a 10-foot-diameter, 350-foot-long, steel penstock replacing an existing 6.5-foot-diameter penstock; (7) a powerhouse containing four turbine-generator units with a total rated capacity of 1,480 kW; (8) a tailrace canal; (9) a 1,000-foot long, 23-kV transmission line; and (10) appurtenant facilities.

Lower Development: It consists of: (1) a 110-foot-long 15-foot-high concrete capped cut granite dam; (2) a 10-acre reservoir with a total storage capacity of approximately 90 acre-feet; (3) two 7-foot-diameter, 85-foot-long steel penstocks; (4) a mill/powerhouse containing two turbine-generating units with a total installed capacity of 390 kW; (5) a tailrace canal; (6) a 23-kV transmission line that is connected to the upper development; and appurtenant facilities.

(C) Within 90 days of the date of this order, the exemptee must file for Commission approval, revised Exhibit A, and Exhibit F and G drawings reflecting the proposed work authorized by this order and to update the exhibit drawings for the exemption. The exemptee must prepare the revised Exhibit A in accordance with the Commission's regulations at [18 CFR section 4.107](#) (c), the Exhibit F drawings in accordance with 18 CFR sections [4.39](#) and [4.41](#) (g), and the Exhibit G drawings in accordance with 18 CFR sections 4.39 and 4.41 (h).

(D) *Start of Construction.* The exemptee must commence construction of the project works authorized by this order within 2 years from the issuance date of this order and must complete construction within 4 years from the issuance date of this order.

(E) *A Contract Plans and Specifications.* At least 60 days prior to the start of any construction, the exemptee must submit one copy of its plans and specifications and any supporting design documents, 100 percent ready for construction, to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these must be a courtesy copy to the Director, D2SI). 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, a detailed construction schedule, a Stormwater Pollution Prevention Plan, a Spill Prevention and Control Plan, and a Soil Erosion and Sediment Control Plan. The Soil Erosion and Sediment Control Plan must include all best management practices proposed by the exemptee in section 2.2.3 of its March 9, 2017, exemption amendment application. The exemptee 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, and authorized start of construction.

(F) *As-Built Drawings.* Within 90 days of completion of construction of the facilities authorized by this order, the exemptee must file for Commission approval, revised Exhibits A, F and G, to describe and show these project facilities as-built. A courtesy copy must be filed with the Commission's D2SI – New York Regional Office; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(G) This amendment of exemption is subject to the terms and conditions of the U.S. Fish and Wildlife Service filed with the Commission on January 27, 1982 as amended by letter filed with the Commission on July 6, 2016 as those conditions are set forth in Appendix A to this order.

(H) This amendment of exemption is subject to the terms and conditions of the Massachusetts Division of Fisheries and Wildlife filed with the Commission on April 22, 2016 as those conditions are set forth in Appendix B to 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. § 8251 (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2017). 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.

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

APPENDIX A

Section 30(c) conditions for the Ware River Project issued by the U.S. Fish and Wildlife Service filed on January 27, 1982 as amended July 6, 2016.

1. The Exemptee shall provide fish-passage facilities at the project when the Massachusetts Division of Fisheries and Wildlife implements a plan to restore runs of anadromous fish through the project area. There are currently no plans to restore such runs in the near future (next 25 years).
2. 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 (amended July 6, 2016).
3. The Exemptee shall provide access to Project waters for anglers except where such access would risk personal safety.
4. The Exemptee shall conduct a post-upgrade water quality monitoring survey. The survey protocol shall be developed in consultation with, and require approval by, the U.S. Fish and Wildlife Service and the Massachusetts Department of Environmental Protection. Data shall be collected for up to three (3) years, and shall be initiated the first low-flow season after the turbines become operational. If results indicate that the Project is not meeting water quality standards, the Exemptee shall implement mitigation measures sufficient to achieve applicable standards.
5. The Exemptee shall, within six (6) months of the date of issuance of an amendment of the exemption, develop a plan for maintaining and monitoring instantaneous run-of-river operation at the Project. The plan shall be developed in consultation with, and require approval by, the U.S. Fish and Wildlife Service and the Massachusetts Department of Environmental Protection. The plan shall include a description of the mechanisms and structures that will be used, the level of manual and automatic operation, the methods to be used for recording data on run-of-river operation, an implementation schedule, and a plan for maintaining the data for inspection by the U.S. Fish and Wildlife Service, the Federal Energy Regulatory Commission, and the Massachusetts Department of Environmental Protection.

APPENDIX B

Section 30(c) conditions for the Ware River Project issued by Massachusetts Division of Fisheries and Wildlife on April 22, 2016

- 1) For any future drawdowns, the Licensee shall develop a State-Listed Species Protection Plan with Division-consultation and approval to:
 - a. Develop maximum allowed outflow during drawdowns from the Lower Ware Dam to ensure downstream habitats are not impacted.
 - b. Ensure the dam passes minimum flow from Lower Ware Dam during drawdowns, and
 - c. If state-listed species are detected in the lower or upper impoundments, then the exemptee shall engage a qualified mussel-biologist to develop and implement a protection plan to salvage and relocated state-listed species associated with drawdowns.

Document Content(s)

P-3127-023.DOCX.....1-13