

138 FERC ¶ 62,316
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Blue Heron Hydro LLC, Vermont

Project No. 13368-002

ORDER ISSUING ORIGINAL LICENSE

(March 29, 2012)

INTRODUCTION

1. On November 1, 2010, Blue Heron Hydro, LLC (Blue Heron), filed pursuant to Part I of the Federal Power Act (FPA),¹ an application for an original license to construct, operate, and maintain its proposed Townshend Dam Hydroelectric Project No. 13368 (Townshend Project or project). The 924-kilowatt (kW) project will be located at the U.S. Army Corps of Engineers' (Corps) Townshend Dam, which is located on the West River near the town of Townshend, in Windham County, Vermont. The project will occupy approximately 2.86 acres of federal land under the jurisdiction of the Corps.²

2. As discussed below, this order issues an original license for the Townshend Project.

BACKGROUND

3. On January 20, 2011, the Commission issued a public notice that was published in the *Federal Register*, accepting the application for filing and soliciting motions to intervene and protests.³ The notice set March 21, 2011, as the deadline for filing motions to intervene and protests. Motions to intervene and comments were filed by the U.S. Department of the Interior (Interior), the Vermont Agency of Natural Resources, the Windham Regional Commission, American Whitewater and New England Flow, and the Connecticut River Watershed Council. The town of Townshend filed a timely motion to intervene, but made no comments. None of the intervenors oppose the project.

¹ 16 U.S.C. §§ 791a - 825r (2006).

² Because the project would be located at the Corps' Townshend Dam and would occupy lands of the United States, section 23(b)(1) of the FPA, 16 U.S.C. § 817(1) (2006), requires that it be licensed.

³ 75 *Fed. Reg.* 4871 (2011).

4. On December 27, 2010, the Corps filed a letter requesting cooperating agency status in the preparation of National Environmental Policy Act documents. On February 18, 2011, the Commission and the Corps signed a Letter of Understanding to act as cooperating agencies.
5. On June 13, 2011, the Commission issued a public notice that was published in the *Federal Register*, indicating the application was ready for environmental analysis and soliciting comments, recommendations, terms and conditions, and prescriptions.⁴ The notice set August 12, 2011, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions. In response, comments and recommendations were filed by Interior.
6. On December 20, 2011, Commission staff issued an Environmental Assessment (EA).⁵ Blue Heron and the Windham Regional Commission filed comments on the EA.
7. The comments and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

A. Existing Corps Facilities

8. The Townshend Project will use the existing Townshend Dam and Lake, which are owned and operated by the Corps and are not part of the licensed project. The Townshend Dam was constructed by the Corps between 1959 and 1961. It is a 1,700-foot-long, 133-foot-high, rock-and-earth-fill dam that impounds a reservoir with a surface area of 95 acres and a gross storage capacity of 800 acre-feet at a normal water surface elevation of 478.0 feet National Geodetic Vertical Datum (NGVD). The dam also has a 439-foot-long, L-shaped concrete ogee weir emergency spillway with a crest elevation of 553.0 feet NGVD. A 153-foot-high intake tower is located on the upstream side of the dam and is connected to a 20.5-foot-diameter, 360-foot-long outlet conduit that passes through the dam and has a maximum hydraulic capacity of 9,000 cubic feet per second (cfs). Three 7.5-foot-wide, 17-foot-high hydraulic slide gates⁶ are located at the base of the intake tower on its upstream side. A U-shaped, overflow weir, equipped with a 1-foot-wide, 1-foot-high notch, discharges water into a plunge pool in front of the center

⁴ 76 *Fed. Reg.* 118 (2011).

⁵ 76 *Fed. Reg.* 248 (2011).

⁶ The three slide gates are arranged side-by-side and referred to as the left, center, and right slide gates in this order.

slide gate. Tunnels lead from the downstream side of each of the three slide gate openings and join into the single, concrete, horse-shoe shaped outlet conduit.

B. Current Corps Operation

9. The Townshend Dam is part of a system of 14 dams that are operated to provide flood protection for the numerous communities along the Connecticut River.⁷ In addition to flood control, the Corps operates Townshend Dam and Lake for fish and wildlife enhancement and recreation.

10. The Corps maintains Townshend Lake at a normal reservoir elevation of 478 feet NGVD. During flood control operations, the reservoir has a maximum elevation of 553 feet NGVD.⁸

11. In addition to maintaining the water levels described above, the Corps releases water from the dam in accordance with a coordinated interagency agreement that includes the following schedule for releases: 1,100 cfs or inflow, whichever is less, from April through May; 140 cfs or inflow, whichever is less, from June through September; and 280 cfs or inflow, whichever is less, from October through March. The minimum flow is reduced to 280 cfs during flood control operations in April and May. In late September or early October, the outflow from the dam is increased to pass approximately 1,500 cfs that is released at the upstream Ball Mountain Dam for a one-day whitewater event.

12. During normal and low-flow conditions, the level of Townshend Lake is maintained by passing all flows over the U-shaped weir, into the plunge pool, through the center slide gate opening, and then into the outlet conduit before returning to the West River. Higher flows, up to the hydraulic capacity of the outlet conduit (9,000 cfs), are released from the reservoir through all three slide gates. Flows in excess of 9,000 cfs are temporarily stored in Townshend Lake or released over the spillway.

C. Proposed Hydropower Facilities

⁷ The Townshend Dam is located at River Mile 20.7 on the West River.

⁸ Because of dam safety concerns associated with the Corps' upstream Ball Mountain Dam, the Corps developed an Interim Risk Reduction Plan that requires Townshend Lake to be maintained at a normal reservoir elevation of 478.0 feet NGVD. This requirement ensures that the Corps is able to store water in Townshend Lake (up to elevation 553 feet NGVD), and allows the Corps to operate Ball Mountain Lake at a lower elevation and reduce loading on Ball Mountain Dam during floods. Ball Mountain Dam and Lake are located 9 miles upstream, at River Mile 29.7 on the West River.

13. The Townshend Project will consist of: (1) two 5.9-foot-high, 11.3-foot-wide turbine-generator arrays, located in the openings for the existing left and right slide gates, each containing six horizontal mixed-flow Obermeyer turbines directly connected to six 77-kW submersible generator units for a total installed capacity of 924 kW; (2) two approximately 82-foot-high, 13.3-foot-wide turbine hoist structures located on top of the existing intake tower; (3) a 6-foot-wide, 8-foot-long control panel in the existing intake tower that will include controls for shutting down the project and operating the left and right slide gates during an emergency; (4) a 14-foot-wide, 20-foot-long equipment area containing an 8-foot-wide, 10-foot-long pre-fabricated control building, switch gear, transformers, and other electrical equipment; (5) twelve approximately 600-foot-long, 4.16-kilovolt (kV) generator leads interconnecting the generators in a conduit to a step-up transformer on a 7-foot-wide, 8-foot-long concrete pad; (6) an approximately 215-foot-long, 12.47-kV transmission line interconnecting the step-up transformer to Central Vermont Public Service's existing distribution line; and (7) appurtenant facilities.

D. Project Boundary

14. The proposed project boundary will enclose the two turbine-generator arrays and hoists, the control panel, the conduit containing the generator leads, the pad for the step-up transformer, the equipment area, and the transmission line.

E. Proposed Project Operation

15. Blue Heron proposes to operate the hydropower project using the flows that the Corps releases in accordance with the current dam operation as set by the Corps (i.e., run-of-release operation). The proposed project will not have the capability to store water and its operation will not change reservoir elevations or the amount of flows that are released from the dam. It will, however, change the way the flows are released through the dam.

16. Rather than flows being passively released over the U-shaped weir and through the center slide gate, Blue Heron proposes that, when the project is operating, the existing center slide gate will be closed and water from Townshend Lake will instead enter the intake tower through the existing left and/or right slide gate openings, passing through the new Obermeyer turbine arrays and into the existing concrete outlet conduit before returning to the West River.

17. Blue Heron proposes to install a downstream fish passage facility, which would use 40 cfs of the Corps' flow releases as a conveyance flow during the spring. When the Corps' flow releases are less than 70 cfs (the minimum hydraulic capacity of the turbine units [30 cfs] plus the conveyance flow of the proposed downstream fish passage facility), Blue Heron proposes that the Corps would close the existing left and right slide gates and all flow would be released over the existing U-shaped weir and through the center slide gate. Additionally, Blue Heron proposes that, for flow releases greater than

526 cfs (the maximum hydraulic capacity of the turbine units [486 cfs] plus the conveyance flow of the proposed downstream fish bypass), the Corps would release water through the center slide gate. Blue Heron further proposes raising and lowering the two turbine-generator arrays from the left and right center gates using the two turbine hoist structures during Corps flood control operations or routine maintenance of the turbine-generator arrays.

F. Proposed Measures

18. In addition to operating the project in run-of-release mode and constructing and operating a downstream fish passage facility for Atlantic salmon, Blue Heron proposes to implement several measures to ensure compliance with operational requirements and protect water quality and fisheries. Blue Heron proposes to: (1) develop a plan to monitor and report flow releases, reservoir elevations, and inflows; (2) develop a plan to conduct a water quality monitoring study to determine project effects on dissolved oxygen (DO) in the West River downstream of Townshend Dam; (3) develop a plan to manage debris collected at project facilities; (4) develop a plan to evaluate the effectiveness of the proposed downstream fish passage facility; and (5) install an interpretive sign describing the project. Blue Heron also proposes to implement a reservoir refilling procedure where no more than 10 percent of the reservoir inflow would be used to refill the reservoir after it is drawn down, while releasing 90 percent of inflow to protect habitat and water quality in the West River downstream of the dam. However, because Townshend Dam is owned and operated by the Corps, only the Corps can dictate how the reservoir is operated and filled. Therefore, Commission staff did not consider this proposal further.

SUMMARY OF LICENSE REQUIREMENTS

19. As summarized below, this license authorizes 924 kW of renewable energy and requires a number of measures to protect water quality, aquatic, and cultural resources, and enhance recreational resources at the project.

20. Blue Heron will operate the project, using the flows provided to it by the Corps (i.e., run-of-release). To protect aquatic resources and ensure that the project does not affect the water quality of the Corps' releases, the license requires Blue Heron to install and operate a downstream fish passage facility for Atlantic salmon and to develop plans to: (1) monitor DO in the West River downstream of the dam; (2) study the effectiveness of the downstream fish passage facility; and (3) dispose of debris collected at project facilities.

21. To clarify Blue Heron's responsibilities for operation of the Townshend Project relative to the Corps' operation of Townshend Dam, the license requires Blue Heron to develop an operation compliance monitoring plan in consultation with the Corps.

22. To enhance recreational resources, the license requires Blue Heron to install and maintain an interpretive sign describing the project at a Corps-approved publicly-accessible location near the dam.

23. To protect cultural resources, the license requires Blue Heron to stop all construction activities and consult with the SHPO and the Corps if previously unidentified cultural resources are found during construction, operation, and maintenance.

WATER QUALITY CERTIFICATION

24. Under section 401(a)(1) of the Clean Water Act (CWA),⁹ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification (certification) for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.¹⁰

25. Blue Heron applied for certification from Vermont DEC on July 24, 2009. On July 14, 2010, Vermont DEC issued its certification for the Townshend Project. The certification includes 18 conditions. All 18 conditions of the certification are set forth in Appendix A and incorporated into this license by ordering paragraph (E). Seven of the conditions are administrative in nature and are not discussed further in this order. However, as discussed below, several of the substantive conditions appear to be an attempt to alter the way the Corps operates the federal dam and reservoir, and are therefore impossible to meet.

26. Condition B requires that Blue Heron operate the project in a run-of-river mode, except for during flood control operations or when Blue Heron is conducting maintenance approved in advance by Vermont DEC. Vermont DEC defines a run-of-river project as a project that does not operate out of storage and where outflow from the project is equal to inflow.¹¹ Condition B also requires a conservation flow and ramping requirements under certain conditions and specifies a minimum reservoir level during project operations. Condition C requires that when the reservoir is being refilled following a drawdown, no more than 10 percent of inflow will be stored in Townshend

⁹ 33 U.S.C. § 1341(a)(1) (2006).

¹⁰ 33 U.S.C. § 1341(d) (2006).

¹¹ Certification at 4, footnote 1.

Lake and the remaining 90 percent will be passed downstream. Condition D requires that Blue Heron develop a flow and water level management plan detailing how the project will be operated to comply with Conditions B and C.

27. In addition to other federally authorized project purposes, the Corps operates Townshend Dam in coordination with 13 other dams to provide flood protection for the numerous communities along the Connecticut River. Vermont DEC cannot require the Corps to change the way it operates Townshend Dam and Lake, nor can it do so through a Commission license. The Commission can only enforce Vermont DEC's conditions as they apply to Blue Heron's Townshend Project. The Commission cannot change the Corps' operation of Townshend Dam and Lake to a run-of-river mode, and it cannot require that the reservoir be refilled after a drawdown in the manner specified by Vermont DEC. The Townshend Project will not include facilities capable of regulating the reservoir level or outflow from Townshend Dam. The project can only generate electricity using water that the Corps passes through its existing slide gate openings and the inflow of water to the turbine-generator arrays will equal the outflow from the turbine-generator arrays at all times that the project is operating. Thus, the Townshend Project will operate in a run-of-release mode, using flows controlled and released by the Corps to operate the turbine-generator arrays, and it will not have any influence on reservoir levels or the quantity of flows released from Townshend Dam. For these same reasons, the plan required by Condition D for meeting the requirements of Conditions B and C cannot be developed. Although these conditions must be included in the license, they cannot be met by the licensee or enforced by the Commission.

28. Condition E requires Blue Heron to develop a plan, in consultation with Vermont DEC and the U.S. Fish and Wildlife Service (FWS), for continuously monitoring and reporting flow releases, reservoir levels, and inflows and for reporting deviations from the operating conditions specified in Conditions B and C. Because the project will not include facilities or structures capable of controlling reservoir levels or outflow from Townshend Dam as described in Conditions B and C, the plan required by Conditions E is unnecessary. However, because it is a monitoring plan only, the licensee is able to comply.

29. Condition F requires that Blue Heron ensure that the Memorandum of Agreement (MOA) for project operation between Blue Heron and the Corps is consistent with the Vermont DEC's certification. The MOA required by Article 309 will include a detailed description of project operation and any restrictions needed to protect the primary purposes of the Corps' project for navigation, recreation, water quality, and flood control. However, as described above, Blue Heron's project will not include facilities or structures capable of controlling reservoir levels or outflow from Townshend Dam as specified in Conditions B and C. Although this condition is included in Appendix A to this order, it is unenforceable.

30. Condition G requires that Blue Heron develop a plan, in consultation with Vermont DEC, to monitor DO downstream of the dam and determine if Blue Heron's project is degrading DO in the West River. Because the Corps operates Townshend Dam and Lake for fish and wildlife enhancement, Article 401 requires Blue Heron to also consult with the Corps when preparing the plan.

31. Condition H requires that Blue Heron develop a plan, in consultation with Vermont DEC, Vermont DFW, and FWS, for the construction, operation, and maintenance of a downstream fish passage facility for Atlantic salmon. To the extent that the fish passage facility may alter Townshend Dam, Blue Heron must work with the Corps to develop the facility in a manner that is acceptable to the Corps. Accordingly, Article 401 of the license requires consultation with the Corps in the development of the downstream fish passage plan.

32. Condition I requires Blue Heron to develop a plan, in consultation with the Vermont DEC, the Vermont DFW, and FWS, to study the effectiveness of the downstream fish passage facility. Because the Corps operates Townshend Dam and Lake for fish and wildlife enhancement, Article 401 requires Blue Heron to also consult with the Corps when preparing the plan.

33. Condition J requires Blue Heron to develop a plan, in consultation with Vermont DEC, to dispose of debris associated with project operation, including debris collected at project facilities. To the extent that debris removal and disposal may affect Corps facilities or the Corps' operation of Townshend Dam, Blue Heron must work with the Corps to develop removal and disposal procedures that are acceptable to the Corps. Accordingly, Article 401 of the license requires consultation with the Corps in the development of the plan.

34. Condition K requires that Blue Heron receive prior review and approval from Vermont DEC for any maintenance or repair work that may have a material adverse effect on water quality.

35. Condition L requires that Blue Heron notify the Vermont DEC within two weeks of project completion and commencement of operation.

36. As noted above, all 18 conditions of the certification are set forth in Appendix A, even those that exceed the Commission's authority to enforce. Article 401 requires the licensee to file, for Commission approval, plans and reports required by the certification conditions, notify the Commission of emergencies and other activities, and file amendment applications, as appropriate.

COASTAL ZONE MANAGEMENT ACT

37. Under section 307(c)(3)(A) of the Coastal Management Zone Act (CZMA),¹² the Commission can not issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 6 months of its receipt of the applicant's certification. The state of Vermont does not have a Coastal Zone Management Program. Therefore, CZMA consistency certification is not required for the Townshend Project.

SECTION 18 FISHWAY PRESCRIPTION

38. Section 18 of the FPA¹³ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. In a letter filed on August 11, 2011, the Secretary of the Interior requested that the Commission reserve authority to prescribe fishways. Consistent with the Commission's policy, Article 405 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Townshend Project.

THREATENED AND ENDANGERED SPECIES

39. Section 7(a)(2) of the Endangered Species Act of 1973¹⁴ 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.

40. There are no threatened and endangered species or critical habitat in the project area; therefore, Commission staff found in the EA¹⁵ that none of the proposed action alternatives would affect threatened or endangered species or their designated critical habitat. No further action under the Endangered Species Act is required.

NATIONAL HISTORIC PRESERVATION ACT

¹² 16 U.S.C. §1456(c)(3)(A) (2006).

¹³ 16 U.S.C. § 811 (2006).

¹⁴ 16 U.S.C. §1536(a) (2006).

¹⁵ EA at 46.

41. Under section 106 of the National Historic Preservation Act¹⁶ and its implementing regulations,¹⁷ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

42. In a letter filed on January 25, 2010, the Vermont SHPO concluded that because all project components will be placed within the existing Townshend Dam or within areas that have been previously disturbed, no historic properties would be affected by the construction and operation of the Townshend Project. In the EA,¹⁸ staff determined that the proposed action would not affect properties that are listed or eligible for listing on the National Register. The Vermont SHPO did not file any comments on the EA or staff's determination.

43. Article 407 requires Blue Heron to stop construction and consult with the SHPO and the Corps, if previously unidentified cultural resources are discovered during project construction, operation, and maintenance.

RECOMMENDATION OF STATE AND FEDERAL FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

44. Section 10(j) of the FPA¹⁹ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,²⁰ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

45. In response to the June 13, 2011, public notice that the project was ready for environmental analysis, the FWS filed four recommendations under section 10(j).²¹ All

¹⁶ 16 U.S.C. § 470 *et seq.* (2006).

¹⁷ 36 C.F.R. § 800 (2011).

¹⁸ EA at 51-52.

¹⁹ 16 U.S.C. § 803(j)(1) (2006).

²⁰ 16 U.S.C. § 661 *et seq.* (2006).

²¹ FWS filed the recommendations on August 11, 2011.

four recommendations were determined to be within the scope of section 10(j). The FWS recommended that Blue Heron: (1) operate the project in a run-of-river mode, (2) file a run-of-river operation monitoring plan, (3) file a plan to install and operate a downstream fish passage facility, and (4) file a plan to study the effectiveness of the downstream fish passage facility. This license includes conditions consistent with the plan to install and operate a downstream fish passage facility and the plan to study the effectiveness of the downstream fish passage facility (Conditions H and I of the certification, required by ordering paragraph (E)).

46. If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies.²² If the Commission still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

47. Commission staff made an initial determination that FWS' recommendations to operate in a run-of-river mode and to file a plan to monitor run-of-river operation may be inconsistent with the comprehensive planning standard of section 10(a) and the public interest standard of section 4(e) of the FPA. By letter dated December 20, 2011, Commission staff advised FWS of its preliminary determination and attempted to resolve the apparent inconsistency. FWS responded in a telephone conversation with staff that it did not wish to pursue a section 10(j) meeting to attempt to resolve the inconsistency;²³ therefore, no resolution of the inconsistency could be reached.

48. FWS recommended instantaneous run-of-river operation of Townshend Lake at elevation 478.0 feet NGVD. In the EA,²⁴ Commission staff concluded that there would be little, if any environmental effect from this mode of operation because the Corps generally maintains Townshend Lake at elevation 478.0 feet NGVD throughout the year. However, Blue Heron's Townshend Project will not have the authority or include the facilities needed to control the reservoir level or outflow from Townshend Dam. Therefore, staff recommended Blue Heron's proposed run-of-release operation instead of FWS' recommended instantaneous run-of-river operation. Blue Heron will operate the

²² 16 U.S.C. § 803(j)(2) (2006).

²³ See telephone conversation summary filed on February 2, 2012.

²⁴ EA at 33.

project using flows controlled and released by the Corps, and there will be no project-related effect on reservoir elevations or downstream flows.

49. FWS recommended that Blue Heron develop a plan to monitor run-of-river operation, including inflows, reservoir elevations, and flow releases. Because the Townshend Project will not have any effect on inflows, reservoir levels, or flow releases, staff did not recommend the monitoring plan in the EA.²⁵ In any event, Condition E of the certification requires Blue Heron to develop a monitoring plan and report on inflows, reservoir levels, and flow releases.

50. This license requires Blue Heron to operate the project in a run-of-release mode (Article 403), file an operation compliance monitoring plan (Article 404), and monitor DO in the West River downstream of the dam (ordering paragraph (E)). These measures in addition to the others discussed above, would protect aquatic habitat and water quality in the reservoir and the West River downstream of the dam.

51. For the above reasons, I conclude, in accordance with FPA section 10(j)(2)(A), that FWS' recommendations to operate in an instantaneous run-of-river mode and to file a run-of-river operation monitoring plan are inconsistent with sections 10(a) and 4(e) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, I find that the measures required by this license will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources by this project.

SECTION 10(a)(1) OF THE FPA

52. Section 10(a)(1) of the FPA²⁶ requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. Operation Compliance Monitoring Plan

53. Blue Heron proposes to operate the hydropower project using flows released by the Corps. In the EA, Commission staff recommended adoption of Blue Heron's proposal to operate the project in a run-of-release mode, finding that such an operational mode would ensure the Corps' ability to continue to operate the Townshend Dam and

²⁵ EA at 76.

²⁶ 16 U.S.C. § 803(a)(1) (2006).

Lake for its authorized purposes and would result in no affect on fish and fish habitat in the reservoir or downstream in the West River.²⁷ Article 403 requires Blue Heron to operate the project in a run-of release operating mode and to demonstrate compliance with a run-of-release operating mode, Article 404 requires Blue Heron to develop and implement an operation compliance monitoring plan that will describe how compliance with run-of-release operating mode will be monitored, including how flows released by the Corps will be distributed between the project's turbine-generator arrays and its downstream fish passage facility.

B. Interpretive Signage

54. In its license application, Blue Heron proposed to install an interpretive sign describing the hydropower project at a publically-accessible location near the project. An interpretive sign describing the proposed project will increase public awareness of the project and the benefits it provides as a source of electricity. Article 406 of this license requires Blue Heron to prepare a plan that includes consultation with the Corps on the design and location of the new interpretive sign.

C. Comments on the EA

55. Blue Heron and the Windham Regional Commission filed comments on the EA, which was issued on December 20, 2011.

56. In its comments on the EA, Blue Heron indicated that the licensed project should not include the existing Corps' facilities or restrict the way the Corps operates Townshend Dam and Lake. The licensed project consists of the items listed in ordering paragraph (B)(2) and will not include any of the Corps' facilities, including Townshend Dam and Lake. Article 309 requires the licensee to develop an MOA with the Corps that will include detailed descriptions of project operations and any restrictions to the operation of the Townshend Project needed to protect the primary purposes of the Corps' project for navigation, recreation, water quality, and flood control.

57. In its comments on the EA, Blue Heron stated that the downstream fish passage conveyance flow used in the EA is incorrect and that the correct conveyance flow was provided in a letter Blue Heron sent to the FWS in October, 2010. Blue Heron also stated that the operational cost for providing downstream fall fish passage would be greater than the cost listed in the EA. In the EA, staff used 28 cfs for the downstream fish passage conveyance flow, which was based on the most recent information Blue Heron had filed to describe its proposed downstream fish passage facility.²⁸ This order uses the 40 cfs

²⁷ EA at 30.

²⁸ See letter filed by Blue Heron on June 9, 2011.

conveyance flow to describe Blue Heron's proposed downstream fish passage facility and estimate costs. The estimated annual cost of providing a conveyance flow for downstream fish passage during the fall increases from \$2,500²⁹ for a 28-cfs flow to \$3,750 for a 40-cfs flow. Because providing downstream passage during the fall would protect juvenile and adult Atlantic salmon from turbine passage, which is likely to result in 100 percent mortality, this license requires Blue Heron to provide downstream fish passage during the fall (Condition H of the certification, required by ordering paragraph (E)). Additionally, because the specific design and operation specifications of the downstream fish passage facility are only conceptual at this time, Condition H requires Blue Heron to develop a final downstream fish passage plan, in consultation with FWS, Vermont DEC, and Vermont DFW, that will include final design specifications, including the conveyance flow. Article 401 requires that the licensee also consult with the Corps in preparing the plan, and requires the plan to be filed with the Commission for approval. In addition, Condition H of the water quality certification requires that the fish passage facility be installed prior to the start of project operation.

58. In its comments on the EA, Blue Heron stated that its proposed downstream fish passage design will not release flow through the center slide gate and that the center slide gate will not be altered. The EA does not indicate that the conveyance flows would be routed through the center slide gate opening or that the center slide gate would be altered. Rather, staff describes in the EA³⁰ that flows *in excess of* "the maximum hydraulic capacity of the turbine units (486 cfs) plus the fish passage conveyance flow (28 cfs)" (i.e., meaning the sum of these two flows) would be released through the center slide gate opening.

59. In its comments on the EA, Blue Heron requested that the specific dates for operation of the downstream fish passage facility not be included as a requirement of the license. The specific dates of operation for the downstream fish passage facility are defined in Condition H of the certification and are consistent with staff's recommendations for the periods of operation provided in the EA.³¹ As indicated above, section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project; therefore, dates of operation specified in Condition H are a requirement of this license (ordering paragraph (E)).

²⁹ EA at 64.

³⁰ EA at 18.

³¹ EA at 74.

60. In its comments on the EA, Blue Heron criticized staff's general conclusion that fall parr³² movements in the West River are likely to be similar to the movements occurring at other projects in the region where fall downstream passage protection is provided.³³ To support its assertions, Blue Heron provided a list of references. In general, these documents describe Atlantic salmon smolt³⁴ production, spring migration timing, winter survival in the West River, competition between Atlantic salmon and other species in the Connecticut River Basin, temperature and chemical influences on smolt migratory behavior in Maine, and general life history information, including over-wintering behavior of Atlantic salmon in Maine. These references were in the record prior to issuance of the EA and staff reviewed and considered this information when preparing the EA. Fall movement of Atlantic salmon parr is well documented (McCormick et al. 1998)³⁵ and, specifically, a study of Atlantic salmon parr movements in the Connecticut River Basin documented substantial downstream movements in the fall (McCormick et al. 2005).³⁶ Blue Heron did not provide any new information that would indicate staff's analysis and conclusions were incorrect and because providing downstream passage during the fall would protect juvenile and adult Atlantic salmon from turbine passage which is likely to result in 100 percent mortality,³⁷ this license requires Blue Heron to provide downstream fish passage during the fall (Condition H of the certification, required by ordering paragraph (E)).

61. In its comments on the EA, the Windham Regional Commission requested that the Commission include the four recommendations made by Interior under Section 10(j) of the FPA, including run-of-river operation and a run-of-river monitoring plan. As discussed above, this license includes conditions H and I of Appendix A which are consistent with Interior's recommendations for a plan to install and operate a downstream

³² Parr are the freshwater juvenile life stage of salmon that are more mature than fry, but have not yet undergone the physiological changes to prepare them for migration into saltwater habitats.

³³ EA at 39.

³⁴ Smolts are the juvenile life stage of salmon after they have undergone physiological changes to prepare them for migration into saltwater habitats.

³⁵ McCormick, S., Hausen, L., Quinn, T., and Saunders, R. 1998. Movement, migration, and smolting of Atlantic salmon (*Salmo salar*). Canadian Journal of Fisheries and Aquatic Sciences. 55(Supplement 1): 77-92.

³⁶ http://www.fws.gov/r5csrc/mig_fish_forum.html

³⁷ EA at 37-39.

fish passage facility and a plan to study the effectiveness of the downstream fish passage facility, but it does not require instantaneous run-of-river operation or a run-of-river monitoring plan because the Townshend Project will not include facilities capable of regulating the reservoir level or outflow from Townshend Dam. Instead this license requires run-of-release operation (Article 403) and an operation compliance monitoring plan (Article 404).

EXEMPTION OF THE FERC FORM 80 RECREATION REPORT

62. The FERC Form 80 Recreation Report (Form 80) collects usage data on recreation facilities at projects through the term of their licenses. Since the Townshend Project has little or no potential for recreation facilities, the licensee is exempt from filing the Form 80 during the term of its license (Article 402).

ADMINISTRATION PROVISIONS

A. Annual Charges

63. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA and use of a government dam. As noted, the Townshend Project will occupy about 2.86 acres of federal land administered by the Corps. The Commission does not assess a land use charge for a licensee's use of federal lands adjoining or pertaining to federal dams or other structures.³⁸ Rather, it assesses the charge on the use of the federal facilities.³⁹

B. Exhibit F and G Drawings

64. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of these drawings. The Exhibit G maps and Exhibit F drawings F-7, F-11, and F-12 are approved and made part of this license (ordering paragraph (C)).

65. Exhibit F drawings F-1 to F-6, and F-8 do not reflect the proposed project facilities as described in Blue Heron's June 9, 2011, letter.⁴⁰ Further, Exhibit F-9, which

³⁸ See 18 C.F.R. § 11.2(a) (2011).

³⁹ See 18 C.F.R. § 11.3 (2011).

⁴⁰ On June 9, 2011, Blue Heron filed a letter stating that it no longer proposes to modify the existing U-shaped weir to include spillway gates for downstream fish passage as shown in the Exhibit F drawings filed on November 1, 2010, and January 11, 2011, because the Corps will not allow any modification of the U-shaped weir.

shows the proposed control building, is inappropriately labeled with the project name and number for the Ball Mountain Dam Hydroelectric Project (P-13226). Exhibit F drawing F-10 (sheets 1 and 2) is duplicative of Exhibit G drawings G-1 and G-2. Exhibit F drawings F-1 to F-6 and F-8 to F-10 are, therefore, not approved. Article 203 requires Blue Heron to file additional Exhibit F drawings that accurately reflect the proposed project facilities and correct the mislabeled plan and profile drawing of the proposed control building.

66. The licensee must ensure that all Exhibit F and Exhibit G maps and drawings comply with the specifications given in Article 202 and all requirements listed in sections 4.39 and 4.41 of the Commission's regulations, 18 C.F.R. §§ 4.39 and 4.41 (2011). Specifically, all exhibits must be filed with the Commission in black and white. In addition to modifying the Exhibit F drawings to reflect the proposed project facilities and appropriate labels, the approved Exhibit F drawings (F-7, F-11, and F-12) must be renumbered to reflect the removal of drawings F-1 to F-6 and F-8 to F-10 from the approved Exhibit F drawings.

C. Project Financing

67. To ensure that there are sufficient funds available for project construction, operation, and maintenance, Article 204 requires the licensee to file for Commission approval, documentation of project financing for the construction, operation, and maintenance of the project at least 90 days before starting any project construction.

D. Use and Occupancy of Project Lands and Waters

68. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 408 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

E. Review of Final Plans and Specifications

69. Article 301 requires the licensee to commence construction of the project works within two years from the issuance date of the license and complete construction of the project within five years from the issuance date of the license.

70. Section 13 of the FPA requires the licensee to commence construction within two years from the issuance date of the license, which deadline may be extended once but no

longer than for two additional years.⁴¹ Furthermore, the licensee must obtain all of the necessary approvals from the Corps and the Commission prior to the start of project construction.⁴² Therefore, the burden is on the licensee to obtain these approvals and commence construction within the time frames required under section 13 and as specified in this license. The licensee is expected to work diligently with the Corps and other relevant entities to secure the necessary approvals to allow it to timely commence project construction and pursue it to completion.

71. Article 302 requires the licensee to provide the Commission's Division of Dam Safety and Inspection (D2SI) – New York Regional Engineer with final contract drawings and specifications, together with a supporting design report consistent with the Commission's engineering guidelines, as well as a plan for a quality control and inspection program, a temporary emergency action plan, and a soil erosion and sediment control plan.

72. Article 303 requires that any proposed permanent or temporary modification that affects the project works or operation and is the result of environmental requirements shall be coordinated as early as feasible with the Commission's New York regional office to allow sufficient review time for the Commission to insure that the proposed work does not adversely affect the project works, dam safety, or project operation.

73. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as-built. Article 304 provides for the filing of these drawings.

F. Conditions for Projects at Corps' Dams

74. Pursuant to a 2011 Memorandum of Understanding between the Commission and the Department of the Army,⁴³ seven special articles are included in licenses for

⁴¹ 16 U.S.C. § 806 (2006). Under section 13, failure to timely commence project construction will result in termination of the license.

⁴² *See, e.g.*, Article 204, documentation of project financing; Article 302, approval of contract plans and specifications; Article 305, Corps' approval of facility design and construction; Article 309, Corps' approval of project operation plan; and Article 311, Corps' written approval of construction plans.

⁴³ Memorandum of Understanding between the United States Army Corps of Engineers and Federal Energy Regulatory Commission on Non-federal Hydropower Projects, March 2011. <http://www.ferc.gov/legal/maj-ord-reg/mou/mou-usace.pdf>

hydroelectric projects to be developed at Corps' facilities. The articles are incorporated in this license as Articles 305 through 311.

G. Commission Approval of Resource Plans, Reports, Notification, and Filing of Amendments

75. In Appendix A, there are certain certification conditions that require the licensee to prepare various plans or reports, but they do not require the licensee to file these plans or reports with the Commission. Therefore, Article 401(a) requires the filing of specified plans with the Commission for approval before implementation. In addition, Article 401(b) requires the licensee to report data collected during implementation of the dissolved oxygen study plan and the downstream fish passage effectiveness study plan. Article 401(c) requires the licensee to notify the Commission of deviations from prescribed operating conditions. Finally, Article 401(d) requires the licensee to file an amendment application with the Commission before implementing any changes to project operation or design as a result of the dissolved oxygen or downstream fish passage effectiveness studies, or if Vermont DEC exercises its reserved authority to amend the water quality certification.

STATE AND FEDERAL COMPREHENSIVE PLANS

76. Section 10(a)(2)(A) of the FPA,⁴⁴ requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.⁴⁵ Under section 10(a)(2)(A), staff identified and reviewed 15 comprehensive plans that are relevant to this project.⁴⁶ No conflicts were found.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

77. Staff reviewed Blue Heron's preliminary plans to build the project as described in the license application. Staff concluded that the project works will be safe when constructed, operated, and maintained in accordance with the Commission's standards and oversight and the provisions of this license.

NEED FOR POWER

⁴⁴ 16 U.S.C. § 803(a)(2)(A) (2006).

⁴⁵ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2011).

⁴⁶ The list of applicable plans can be found in section 5.5 of the environmental assessment for the project. EA at 80.

78. To assess the need for power, staff looked at the needs in the operating region in which the project is located. The project will be located in the New England Subregion of the Northeast Power Coordinating Council region of the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report on annual supply and demand projections indicates that, for the period 2011–2020, total summer demand is projected to increase from 27,550 megawatts (MW) to 31,215 MW, and winter demand from 22,255 MW to 23,365 MW. The project, as licensed, has the potential to supply about 0.924 MW of this demand. The project's contribution to the region's diversified generation mix will help meet a need for power in the region.

PROJECT ECONOMICS

79. In determining whether to issue a license for a hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁴⁷ the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

80. In applying this analysis to the Townshend Project, two options were considered: Blue Heron's proposal and the project as licensed herein. As proposed by Blue Heron, the levelized annual cost of constructing and operating the Townshend Project is \$517,100, or \$258.57/megawatt hour (MWh). The proposed project would generate an estimated average of 2,000 MWh of energy annually. When the estimate of average generation is multiplied by the alternative power cost of \$125/MWh,⁴⁸ the total value of the project's power is \$250,000 in 2011 dollars. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power.⁴⁹ Therefore, in the first year of operation, the project would cost \$267,100, or \$133.57/MWh, more than the likely alternative cost of power.

⁴⁷ 72 FERC ¶ 61,027 (1995).

⁴⁸ The alternative power cost of \$125 per MWh is based on Blue Heron's contract price for the value of energy (license application, 2010).

⁴⁹ Details of staff's economic analysis for the project as licensed herein are included in the EA issued December 20, 2011. However, the economic analysis has been
(continued)

81. As licensed herein with the mandatory conditions and staff measures, the levelized annual cost of constructing and operating the project will be about \$517,600, or \$262.74/MWh. Based on an estimated average generation of 1,970 MWh as licensed, the project will produce power valued at \$246,250 when multiplied by the \$125/MWh value of the project's power. Therefore, in the first year of operation, project power will cost \$271,350, or \$137.74/MWh, more than the likely cost of alternative power.

82. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as quickly adjusting power output to respond to rapid changes in system load, and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

83. Although this analysis shows that the project as licensed herein will cost more to operate than the estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

84. Although this analysis does not explicitly account for the effects inflation may have on the future cost of electricity, the fact that hydropower generation is relatively insensitive to inflation compared to fossil-fueled generation is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license.

COMPREHENSIVE DEVELOPMENT

85. Section 4(e) and 10(a)(1) of the FPA⁵⁰ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Accordingly, any license issued shall, in the Commission's judgment, be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

revised for this order to update project costs from 2010 to 2011 dollars and to account for the higher downstream fish passage facility conveyance flow (i.e., 40 cfs) described in Blue Heron's comments on the EA.

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

86. The EA for the project contains background information, analysis of effects, and support for related license articles. This order concludes, based on the record of this proceeding, including the EA and the comments thereon, that licensing the Townshend Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

87. Based on this independent review and evaluation of the Townshend Project, recommendations from the resource agencies, and other stakeholders, certification conditions, and the no-action alternative, as documented in the EA, the proposed Townshend Project, with the staff-recommended measures, is found to be best adapted to a comprehensive plan for improving or developing the West River.

88. This alternative has been selected because: (1) issuance of an original license will serve to provide a beneficial and dependable source of electrical energy; (2) the required environmental measures will protect fisheries resources, water quality, and cultural resources; and (3) the 924 kW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

89. Section 6 of the FPA,⁵¹ provides that original licenses for hydropower projects shall be issued for a period not to exceed 50 years. It is Commission policy to issue a 50-year license for a project located at a federal dam.⁵² Accordingly, this license is issued for a term of 50 years.

The Director orders:

(A) This original license is issued to Blue Heron Hydro LLC (licensee) for a period of 50 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Townshend Dam Hydroelectric Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G filed November 1, 2010:

⁵¹ 16 U.S.C. § 799 (2006).

⁵² See *City of Danville, Virginia*, 58 FERC ¶ 61,318 at 62,020 (1992).

<u>Exhibit G Drawing</u>	<u>FERC No. 13368-</u>	<u>Description</u>
Sheet G-1	4	Townshend Dam Project Boundary Detail
Sheet G-2	5	Townshend Dam Project General Site Plan

(2) Project works consisting of: (1) two 5.9-foot-high, 11.3-foot-wide turbine-generator arrays, located in the openings for the existing left and right slide gates, each containing six horizontal mixed flow Obermeyer turbines directly connected to six 77-kilowatt (kW) submersible generator units for a total installed capacity of 924 kW; (2) two approximately 82-foot-high, 13.3-foot-wide turbine hoist structures located on top of the existing intake tower; (3) a 6-foot-wide, 8-foot-long control panel in the existing intake tower that will include controls for shutting down the project and operating the left and right slide gates during an emergency; (4) a 14-foot-wide, 20-foot-long equipment area containing an 8-foot-wide, 10-foot-long pre-fabricated control building, switch gear, transformers, and other electrical equipment; (5) twelve approximately 600-foot-long, 4.16-kilovolt (kV) generator leads interconnecting the generators in a conduit to a step-up transformer on 7-foot-wide, 8-foot-long concrete pad; (6) an approximately 215-foot-long, 12.47-kV transmission line interconnecting the step-up transformer to Central Vermont Public Service's existing distribution line; and (7) appurtenant facilities.

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

Exhibit A: The following sections of Exhibit A filed on November 1, 2010, January 11, 2011, and June 9, 2011:

Section titled "Dimensions of proposed project facilities" on page 12, and sections A-3 to A-5 on pages 14 to 17 of the application for license filed November 1, 2010.

Second paragraph on page 1 of the licensee's January 11, 2011, letter.

First paragraph on page 1 of the licensee's June 9, 2011, letter.

Exhibit F: The following Exhibit F drawings filed on January 11, 2011:

<u>Exhibit F Drawing</u>	<u>FERC No. 13368-</u>	<u>Description</u>
Sheet F-11	1	Townshend Dam General Profile Through Dam

<u>Exhibit F Drawing</u>	<u>FERC No. 13368-</u>	<u>Description</u>
Sheet F-12	2	Townshend Dam Intake Profile
Sheet F-7	3	Turbine Assembly Plan, Profile, and Elevation

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

(C) The Exhibits A, F, and G described above are approved and made part of the license.

(D) The following sections of the FPA are waived and excluded from the license for this minor project:

4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the Act that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) To the extent they are within the Commission's authority to enforce, this license is subject to the conditions submitted by the Vermont Department of Environmental Conservation under section 401(a)(1) of the Clean Water Act as those conditions are set forth in Appendix A to this order.

(F) This license is also subject to the articles set forth in Form L-17 (Oct. 1975), entitled "Unconstructed Minor Project Affecting Lands of the United States" (*See* 54 F.P.C. 1799 *et seq*), and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States the following annual charges, as determined in accordance with the provisions of the Commission's regulations in effect from time to time:

(a) effective as of the date of commencement of project construction, to reimburse the United States for the cost of administration of Part 1 of the Federal Power Act. The authorized installed capacity for that purpose is 924 kilowatts. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

(b) to recompense the United States for the utilization of surplus water or water power from a government dam.

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

(a) Four sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-13368-#### through P-13368-####) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards along with form FERC-587 shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. The remaining set of aperture cards (Exhibit G only) and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

Bureau of Land Management
Branch of Lands (ES-930)
ATTN: FERC Withdrawal Recordation
7450 Boston Blvd.
Springfield, VA. 22153

(b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. Exhibit F drawings must be segregated from other project exhibits and identified as Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. § 388.113(c) (2011). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-13368-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format (TIFF), CCITT Group 4
RESOLUTION – 300 dpi desired (200 dpi min)

DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS geo-referencing the project boundary drawing to the polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

(c) The licensee shall file two separate sets of the project boundary data in a geo-referenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The geo-referenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-13368, boundary polygon/or point data, MM-DD-YYYY.SHP]. The filing must be accompanied by a separate text file describing the spatial reference for the geo-referenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-13368, project boundary metadata, MM-DD-YYYY.TXT].

In addition, for those projects that occupy federal lands, a separate geo-referenced polygon file(s) is required that identifies transmission line acreage and non-transmission line acreage affecting federal lands for the purpose of meeting the requirements of 18 C.F.R. § 11.2. The file(s) must also identify each federal owner (i.e., Army Corps of Engineers), land identification (i.e., federal project name) and federal acreage affected by the project boundary. Depending on the geo-referenced electronic file format, the polygon, point, and federal lands data can be included in a single file with multiple layers.

Article 203. Additional Exhibit F Drawings. Within 90 days of the issuance date of the license, the licensee shall file, for Commission approval, revised Exhibit F drawings F-1 to F-6, F-8, and F-9 that show the final design without new spillway gates on the existing U-shaped weir and correct the mislabeled plan and profile drawing of the

proposed control building. The Exhibit F drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 204. Project Financing Plan. At least 90 days before starting construction, the licensee shall file with the Commission, for approval, three copies of a project financing plan. The plan must show that the licensee has acquired the funds, or commitment for funds, necessary to construct the project in accordance with this license. The plan must include, at a minimum, financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term which provide evidence that the licensee has sufficient assets, credit, and projected revenues to cover project construction, operation, and maintenance expenses, and any other estimated project liabilities and expenses.

The financial statements must be prepared in accordance with generally accepted accounting principles and signed by an independent certified public accountant. The licensee shall not commence project construction or initiate any ground-disturbing activities that are associated with the project, before the project financing plan is approved.

Article 301. Start of Construction. The licensee shall commence project construction within two years from the issuance date of the license and shall complete construction of the hydropower project within 5 years from the issuance date of the license.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee shall submit one copy of its plans and specifications and a supporting design document 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 to the D2SI – New York Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI – New York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. As-built Drawings. Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file for Commission approval, revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, the Director, D2SI, and the Director, Division of Hydropower Administration and Compliance.

Article 304. Project Modification Resulting From Environmental Requirements. The planning and design of any permanent or temporary modification which affects the project works or operation resulting from environmental requirements, such as a downstream fish passage facility, shall be coordinated as early as feasible with the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer. Within 90 days of issuance date of the license a letter is to be sent to the D2SI New York Regional Engineer providing a plan and schedule of any proposed modifications to the project operations or to the water retaining and/or conveyance features of the project in the planning and design phase resulting from environmental requirements of this license. The schedule is to allow sufficient review time for the Commission to insure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 305. Facility Design and Construction. The design and construction of those permanent and temporary facilities, including reservoir impounding cofferdams and deep excavations, that would be an integral part of, or that could affect the structural integrity or operation of the Government project shall be done in consultation with and subject to the review and approval of the U.S. Army Corps of Engineers' (Corps) District Engineer. The Corps' review of the cofferdams will be in addition to the licensee's review and approval of the final plans and shall in no way relieve the licensee of responsibility and liability regarding satisfactory performance of the cofferdams. Within 90 days from the issuance date of the license, the licensee shall furnish the Corps and the Commission's Division of Dam Safety and Inspections – New York Regional Engineer, a schedule for submission of design documents and the plans and specifications for the project. If the schedule does not afford sufficient review and approval time, the licensee, upon request of the Corps, shall meet with the Corps and FERC staff to revise the schedule accordingly.

Article 306. Review of Contractor Designs. The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations, other than those approved according to Article 305, prior to the start of construction and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall file with the Director, Division of Dam Safety and Inspections, with a copy to the Commission's Regional Engineer, and the U.S. Army Corps of Engineers, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

Article 307. Agreement with Corps. The licensee shall within 90 days from the issuance date of the license, enter into an agreement with the U.S. Army Corps of Engineers (Corps) to coordinate its plans for access to and site activities on lands and property administered by the Corps so that the authorized purposes, including operation of the Federal facilities, are protected. In general, the agreement shall not be redundant

with the Commission's requirements contained in this license, shall identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement shall be mainly composed of reasonable arrangements for access to the Corps' site to conduct studies and construction activities, such access rights to be conditioned by the Corps as may be necessary to protect the federally authorized project purposes and operations. Should the licensee and the Corps fail to reach an access agreement, the licensee shall refer the matter to the Commission for resolution.

Article 308. Periodic and Continuous Inspections by the Corps. The installation, construction, operation and maintenance of the project works that, in the judgment of the U.S. Army Corps of Engineers, (Corps) may affect the structural integrity or operation of the Corps' project shall be subject to periodic or continuous inspections by the Corps. Any construction, operation, and maintenance deficiencies or difficulties detected by the Corps' inspection shall be immediately reported to the Division of Dam Safety and Inspection (D2SI) – New York Regional Engineer. Upon review, the D2SI – New York Regional Engineer shall refer the matter to the licensee for appropriate action. In cases when construction, operation, or maintenance practices or deficiencies may create a situation posing imminent danger to the structural integrity and safety of the Corps' project, the Corps' inspector has the authority to stop construction or maintenance while awaiting the resolution of the problem. The licensee shall immediately inform the D2SI – New York Regional Engineer of the circumstances surrounding the cessation of construction, operation, or maintenance activities. The licensee shall not resume construction, operation, or maintenance activities until notified by the D2SI – New York Regional Engineer that the problem or situation has been resolved.

Article 309. Regulating (or Operating) Plan. The licensee shall, at least 60 days prior to start of project construction, submit for approval a regulating plan to the U.S. Army Corps of Engineers (Corps), describing (a) the designed mode of hydropower operation, (b) reservoir flow diversion and regulation requirements for operation of the Corps' project during construction as established by the Corps, and (c) integration of the operation of the hydroelectric facility into the Corps' emergency action plan. In addition, the licensee, prior to start of power plant operation, shall enter into an operating Memorandum of Agreement (MOA) with the Corps describing the detailed operation of the powerhouse acceptable to the Corps. The MOA shall specify any restrictions needed to protect the primary purposes of the Corps' project for navigation, recreation, water quality, and flood control. The Division of Dam Safety and Inspection (D2SI) – New York Regional Engineer shall be invited to attend meetings regarding the agreement. The MOA shall be subject to revision by mutual consent of the Corps and licensee as experience is gained by actual project operation. Should the licensee and the Corps fail to reach an agreement, the matter will be referred to the Director, Office of Energy Projects for resolution. Copies of the regulating plan and signed MOA between the

Corps and the licensee and any revision thereof shall be furnished to the Director, Office of Energy Projects, and the D2SI – New York Regional Engineer.

Article 310. No Claim. The licensee shall have no claim under this license against the United States arising from the effect of any changes made in the operation or reservoir levels of the U.S. Army Corps of Engineers project.

Article 311. Corps Written Approval. The licensee shall provide the Division of Dam Safety and Inspection (D2SI) – New York Regional Engineer two copies of all correspondence between the licensee and the U.S. Army Corps of Engineers (Corps). The D2SI – New York Regional Engineer shall not authorize construction of any project work until the Corps' written approval of construction plans and specifications has been received by the D2SI – New York Regional Engineer.

Article 401. Commission Approval, Notification, and Filing of Amendments.

(a) Requirement to File Plans for Commission Approval.

Various conditions of this license found in the Vermont Agency of Natural Resources (Vermont DEC) water quality certification (certification) issued pursuant to section 401 of the Clean Water Act (Appendix A) require the licensee to prepare plans in consultation with state and federal agencies but without submittal to or approval by the Commission. Each such plan also shall be submitted to the Commission for approval. These plans are listed below

Vermont DEC certification condition	Plan name	Due date
G	Dissolved oxygen study plan	Within 2 years of the issuance date of this license and at least 90 days prior to commencing project operation
H	Downstream fish passage plan	Within 2 years of the issuance date of this license and at least 90 days prior to commencing construction of the downstream fish passage facilities
I	Downstream fish passage effectiveness study plan	Within 2 years of the issuance date of this license and at least 90 days prior to commencing project operation
J	Debris disposal plan	Within 2 years of the issuance date of the license and at least 90 days prior to commencing project operation

The licensee shall include with each plan filed with the Commission documentation that the licensee developed the plan in consultation with the Vermont DEC, Vermont Department of Fish and Wildlife, the U.S. Department of the Interior's Fish and Wildlife Service, and the U.S. Army Corps of Engineers (Corps), and has received approval from Vermont DEC. The Commission reserves the right to make changes to any plan submitted. Upon Commission approval, the plan becomes a requirement of this license, and the licensee shall implement the plan or changes in project operation or facilities, including any changes required by the Commission.

(b) Requirement to File Reports

Certain conditions of Vermont DEC's certification require the licensee to file reports with other entities. These reports will document compliance with requirements of this license and may have a bearing on future actions. Each such report shall also be submitted to the Commission and the Corps. These reports are listed in the following table.

Vermont DEC certification condition	Description	Due date
G	Report on dissolved oxygen monitoring	Within 90 days of completion of the monitoring
I	Report on downstream fish passage effectiveness study	Within 90 days of completion of the study

The licensee shall submit to the Commission documentation of any consultation, and copies of any comments and recommendations made by any consulted entity in connection with each report. The Commission reserves the right to require changes to project operation or facilities based on information contained in the report and any other available information.

(c) Requirement to Notify the Commission

Condition E of the certification describes procedures for reporting deviations from prescribed operating conditions to Vermont DEC. The Commission and the Corps shall also be notified of such deviations as soon as possible, but no later than 10 days after each event.

(d) Requirement to File Amendment Applications

Certain certification conditions in Appendix A contemplate unspecified long-term changes to project operations of facilities for the purpose of mitigating environmental impacts. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. These conditions are listed below.

Vermont DEC certification condition	Modification
G	Changes in project operation or design to address effects identified by the dissolved oxygen study
H	Adjustment of the period of operation of the downstream fish passage facility
I	Changes in project operation or design to address effects identified by the downstream fish passage effectiveness study
R	Alteration or amendment of the certification

Article 402. FERC Form 80 Exemption. There is little or no potential for recreation facilities within the project boundary. Therefore, the licensee is exempt from 18 C.F.R. § 8.11, the requirement to file a Licensed Hydropower Development Recreation Report (Form 80) for the Townshend Dam Hydroelectric Project.

Article 403. Run-of-Release Operation. The licensee shall operate the project in a run-of-release mode meaning that the licensee shall not deviate from the flow constraints, including flow releases, established by the U.S. Army Corps of Engineers (Corps) according to Article 309. If operation of the project causes a deviation from the Corps' flow constraints, the licensee shall notify the Commission and the Corps as soon as possible, but no later than 10 days after each such incident.

Article 404. Operation Compliance Monitoring Plan. At least 90 days before the start of project operation, the licensee shall file with the Commission, for approval, an Operation Compliance Monitoring Plan that describes how the licensee will comply with the operational requirements of this license.

The plan shall include, but not necessarily be limited to, the following:

- (a) provisions to monitor compliance with the run-of-release mode of operation required by Article 403;
- (b) a description of the exact location of all gages and/or measuring devices, or techniques that would be used to monitor downstream fish passage facility flows and operation and compliance with run-of-release operation; the procedures for maintaining and calibrating monitoring equipment; the frequency of recording for each gage and/or measuring device; the protocols or methods to be used for reporting the monitoring data to the Commission; and a monitoring schedule;
- (c) a provision to maintain a log of project operation; and
- (d) an implementation schedule.

The licensee shall prepare the plan after consultation with the U.S. Army Corps of Engineers, the U.S. Department of the Interior's Fish and Wildlife Service, and the Vermont Department of Environmental Conservation. The licensee shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project construction shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. *Reservation of Authority to Prescribe Fishways.* Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 406. *Interpretive Sign Plan.* Within 6 months of the date of issuance this license, the licensee shall prepare and file for Commission approval an interpretive sign plan describing the project and its operation that includes: (a) drawings showing the sign's proposed design and location; (b) a schedule for maintenance of the sign; and (c) an implementation schedule. The plan shall be developed after consultation with the U.S. Army Corps of Engineers. The licensee shall include with the plan documentation of consultation, including any comments from the Corps on the plan, and a descriptions of

how the Corps' comments are accommodated by the plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons. The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. Protection of Undiscovered Cultural Resources. If the licensee discovers previously unidentified cultural resources during the course of constructing, maintaining, or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the U.S. Army Corps of Engineers (Corps) and the Vermont Division for Historic Preservation (SHPO) to determine the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee shall file with the Commission documentation of its consultation with the Corps and the SHPO.

If a discovered cultural resource is determined to be eligible for the National Register of Historic Places (National Register), the licensee shall file for Commission approval an historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Corps and the SHPO. In developing the HPMP, the licensee shall use the Advisory Council on Historic Preservation and the Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP shall include the following items: (1) a description of each discovered property, indicating whether it is listed in or eligible for listing in the National Register; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for implementing mitigation and conducting additional studies. The Commission reserves the right to require changes to the HPMP.

The licensee shall not resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

Article 408. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic,

recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction; (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site; and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of

the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation,

and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

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

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

(H) 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 FPA, 16 U.S.C. § 8251 (2006), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2011). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Jeff C. Wright
Director
Office of Energy Projects

Form L-17
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED
MINOR PROJECT AFFECTING LANDS
OF THE UNITED STATES**

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting

forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made

there under, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 7. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 8. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 9. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 10. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence can not concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 11. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 12. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 13. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of

such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 14. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon the request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 15. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 16. Timber on lands of the United State cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, that timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 17. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires

caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 18. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 19. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 20. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 21. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 22. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 23. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 24. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 25. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 26. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certificate Conditions for the Townshend Dam Hydroelectric Project issued by the Vermont Department of Environmental Conservation on July 14, 2010.

- A. **Compliance with Conditions.** The Applicant shall provide notice to the Department of any proposed change to the project that would have a significant or material effect on the findings, conclusions or conditions of this Certification, including any changes to operation of the project. The Applicant shall not make any such change without approval of the Department.
- B. **Flow and Water Level Management.** The project shall be operated in a true run-of-river mode except when the Corps has taken control of the project for flood control or special maintenance operations or when the Applicant is conducting special maintenance operations approved in advance by the Department. When the Applicant is conducting special maintenance operations, the conservation flow and ramping requirements described in Finding 18 shall be met at all times. Under no circumstances shall the applicant allow the reservoir stage to drop below 21 feet when the project is under the Applicant's control. True run-of-river operation means no utilization of reservoir storage and that outflow from the facility is equal to inflow to the reservoir on an instantaneous basis, as further described in Footnote 1, page 4.
- C. **Flow Management During Reservoir Refill.** During refilling of the project reservoir following a drawdown, up to 10 percent of instantaneous inflow may be placed in storage in order to restore the water level without significantly reducing downstream flows.
- D. **Flow and Water Level Management Plan.** The Applicant shall develop and file with the Department a flow and water level management plan detailing how the project will be operated to achieve compliance with the conservation flow and water level limitations described above and minimize lag times. The plan shall include details of the systems that will be used to maintain a pool stage of at least 21 feet, including a backup system that will function in the event of primary system failure. The plan shall be subject to Department review and approval. Project operation shall not commence prior to approval of the plan by the Department. The Department reserves the right of review and approval of any material changes made to the plan.
- E. **Monitoring Plan for Reservoir and Flow Management.** The Applicant shall develop a plan for continuous monitoring and reporting of flow releases

at the project, reservoir levels and inflows. The plan shall include procedures for reporting deviations from prescribed operating conditions to the Department, explaining the reasons for those deviations and indicating measures to be taken to avoid recurrences. The Applicant shall maintain continuous records of flows and reservoir levels and provide such upon request by the Department. The plan shall include a provision for the inclusion of contemporaneous records from the U.S. Geological Survey gage (West River below Townshend Dam near Townshend, Vermont, Gage No. 01155910). The plan shall be developed in consultation with the Department and the U.S. Fish and Wildlife Service. Project operation shall not commence prior to approval of the plan by the Department. The plan shall be subject to Department review and approval. The Department reserves the right to review and approve or deny any material changes made to the plan.

- F. **Memorandum of Agreement.** The Applicant shall ensure that its Memorandum of Agreement with the Corps relating to responsibilities for project operation is consistent with the findings and conditions of this Certification. The Applicant shall provide a copy of the final Memorandum of Agreement to the Department upon its signature. The Department reserves the right to amend or revoke this Certification if the Memorandum of Agreement is not sufficient to ensure the Applicant's compliance with this Certification.
- G. **Dissolved Oxygen.** The Applicant shall conduct a study to sample D.O. below the dam and determine if project operation is degrading downstream D.O. concentrations. The study plan shall be developed in consultation with the Department and shall be subject to Department review and approval. Project operation shall not commence prior to approval of the plan by the Department. If the study documents that D.O. concentrations are being degraded, the Applicant shall propose, subject to Department review and approval, changes in project design or operation to mitigate the impact. The Applicant shall implement any project design and operation changes approved by the Department within the timeframes specified by the Department. Failure to implement any required changes may result in a reopening of this Certification.
- H. **Downstream Fish Passage.** Prior to initial project operation, the Applicant shall install a downstream fish passage facility to convey fish safely and effectively to the river immediately below the dam. A downstream fish passage plan shall be developed in consultation with the Department, the Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service and shall be submitted to the Department at least 180 days prior to the commencement of construction. The plan shall be subject to Department

review and approval prior to construction. The plan shall include:

- 1) Design and construction plans and specifications;
- 2) Plans for operation and maintenance;
- 3) Provisions to minimize entrainment of fish into the generating units;
- 4) Provisions to minimize impingement of fish on devices or structures used to prevent entrainment; and
- 5) Provisions to convey fish safely and effectively downstream of the facility.

Downstream passage shall be provided 24 hours per day, April 1 – June 15 and September 15 – November 15. In years when adult salmon are above the project, the fall passage period shall be extended through December 31. The downstream passage facility shall be functional at all reservoir operating levels. The passage period shall be subject to adjustment based on knowledge gained about migration periods for migratory salmonids.

- I. **Downstream Fish Passage Effectiveness Study.** Prior to initial project operation, the Applicant shall develop a plan to study the effectiveness of the downstream fish passage facility. The study plan shall include a schedule; shall be developed in consultation with the Department of Fish and Wildlife and the U.S. Fish and Wildlife Service; and shall be subject to Department approval prior to implementation. Based on the outcome of the study, the Department may require that the facilities required under Condition H be modified or replaced in order to assure safe passage. The Applicant shall implement any project design and operational changes approved by the Department within the timeframes specified by the Department.
- J. **Debris Disposal.** The Applicant shall develop a plan for proper disposal of debris associated with project operation, including trashrack debris. The plan shall be developed in consultation with the Department, and a draft shall be submitted to the Department for review at least 60 days prior to commencement of project operation. The final plan shall be subject to Department approval. The Department reserves the right of review and approval of any material changes made to the plan at any time.
- K. **Maintenance and Repair Work.** Any proposals for project maintenance or repair work shall be filed with the Department for prior review and approval, if said work may have a material adverse effect on water quality or cause less-than-full support of a designated use of State waters.
- L. **Commencement of Operation.** The Applicant shall notify the Department within two weeks of project completion and commencement of operation.

- M. **Record Drawings.** The Applicant shall provide the Department with a set of as-built plans within one year of the completion of construction.
- N. **Compliance Inspection by Department.** Subject to limitations imposed by the Corps, the Applicant shall allow the Department to inspect the project area at any time to monitor compliance with Certification conditions.
- O. **Posting of Certification.** A copy of this Certification shall be prominently posted within the gate control structure.
- P. **Approval of Project Changes.** Any change to the project that would have a significant or material effect on the findings, conclusions or conditions of this Certification, including project operation, must be submitted to the Department for prior review and written approval where appropriate and authorized by law and only as related to the change proposed.
- Q. **Reopening of License.** The Department may request, at any time, that FERC reopen the license to consider modifications to the license as necessary to assure compliance with Standards.
- R. **Continuing Jurisdiction.** The Department reserves the right to alter or amend this Certification over the life of the project when such action is necessary to assure compliance with the Standards and to respond to any changes in classification or management objectives for the affected waters.

Document Content(s)

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