

126 FERC ¶ 62,033  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Public Service Company of New Hampshire

Project No. 7528-009

ORDER ISSUING SUBSEQUENT LICENSE

(January 16, 2009)

**INTRODUCTION**

1. Pursuant to Part I of the Federal Power Act (FPA),<sup>1</sup> Public Service Company of New Hampshire (Public Service) filed an application on July 30, 2007, for a subsequent license to continue to operate the existing 1.1-megawatt (MW) Canaan Hydroelectric Project No. 7528 (Canaan Project). The Canaan Project is located on the Connecticut River in Coos County, New Hampshire, and Essex County, Vermont. The project does not occupy any federal land.<sup>2</sup> As discussed below, I am issuing a subsequent license for the project.

**BACKGROUND**

2. The dam and hydropower project were constructed in 1927. The dam was reconstructed in 1943 after a washout of the original timber structure. The Commission issued a minor license for the project on August 24, 1984, and the license will expire on July 31, 2009.<sup>3</sup>

3. On September 25, 2007, the Commission issued a public notice accepting Public

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<sup>1</sup> 16 U.S.C. §§ 791(a) – 825(r) (2006).

<sup>2</sup> The project is located on the Connecticut River. Since the project is located on a stream over which Congress has Commerce Clause jurisdiction, affects interstate commerce through its connection to an interstate power grid, and includes post-1935 construction, it is required to be licensed under section 23(b)(1) of the FPA. 16 U.S.C. § 817(b)(1).

<sup>3</sup> 28 FERC ¶ 62,274 (1984).

Service's application to relicense the Canaan Project, and soliciting motions to intervene and protests. This notice set November 27, 2007, as the deadline for filing protests and motions to intervene. In response to the notice, the following entities filed motions to intervene: Connecticut River Watershed Council (Watershed Council), U.S. Department of the Interior (Interior), and Vermont Agency of Natural Resources (Vermont ANR) on November 23, 26 and 27, respectively.<sup>4</sup> No interventions were filed in opposition to relicensing the project.

4. On September 25, 2007, the Commission issued public notice that the project was ready for environmental analysis and solicited comments, final recommendations, conditions and prescriptions with a filing deadline of November 27, 2007. The following entities commented: Interior, Vermont Trout Unlimited (Trout Unlimited), Watershed Council, Vermont ANR, and New Hampshire Fish and Game Department (New Hampshire Fish and Game) on November 20, 21, 23, 27, and 27, 2007, respectively. Public Service filed reply comments on January 7, 2008.

5. On March 26, 2008, Commission staff issued an Environmental Assessment (EA). New Hampshire Department of Environmental Services (New Hampshire DES), U.S. Fish and Wildlife Service (FWS), Public Service, Vermont ANR, and the Watershed Council filed comments on the EA. The motions to intervene, comments, terms and conditions, prescriptions, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

## **PROJECT DESCRIPTION**

### **A. Project Facilities**

6. The existing Canaan Project consists of a 275-foot-long, 15-foot-high concrete gravity dam with a 150-foot-long spillway equipped with 3.5-foot-high wooden flashboards impounding a 20-acre reservoir. A gatehouse with an intake structure connects to a 1,360-foot-long, 9.0-foot-diameter wood stave penstock, leading to a powerhouse containing a single generating unit with an installed capacity of 1,100 kilowatts (kW). Water discharges from the powerhouse into a 400-foot-long tailrace. Project power is transmitted through a 1,450-foot-long, 34.5-kilovolt (kV) transmission line connected to the regional grid. A more detailed project description is contained in ordering paragraph (B)(2). The penstock, powerhouse, and tailrace bypass about a 1,800-foot-long reach of the Connecticut River.

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<sup>4</sup> The motions were timely and unopposed, and were therefore automatically granted by operation of 18 C.F.R. § 385.214(c)(1) (2008).

## **B. Project Boundary**

7. The project boundary encloses the dam, reservoir, penstock, powerhouse, primary transmission line, and tailrace. The project boundary also encloses the following project recreational facilities: (1) a parking area, a viewing and fishing access area located adjacent to the dam gatehouse on the Vermont side of the river that provides access to the impoundment; and (2) a parking area on the Vermont side of the river near the powerhouse with access to bank fishing at the tailrace.

## **C. Project Operation**

8. Public Service currently voluntarily operates the project in a run-of-river mode, automatically via a reservoir level control. When inflow is less than 516 cubic feet per second (cfs), the reservoir level control maintains the reservoir level between 1,055.15 and 1,055.25 feet mean sea level, and the project generates between its maximum (466 cfs) and minimum (55 cfs) hydraulic capacities. When inflow at the dam is above 516 cfs (466 cfs maximum hydraulic capacity plus a 50-cfs bypassed reach flow), the project operates at maximum capacity and excess water is spilled at the dam. Public Service estimates that the total average annual generation is 7,300 MWh.

9. Under the existing license (Article 21), Public Service is required to provide a total minimum flow of 136 cfs or inflow, whichever is less, downstream of the project. Of the 136-cfs flow, Public Service is required (Article 20) to release into the bypassed reach a continuous average daily flow of 50 cfs, or greater, with the instantaneous minimum flow of not less than 40 cfs, or inflow to the project reservoir, whichever is less.<sup>5</sup>

## **D. Proposed Measures**

10. In its application, Public Service proposes to: (1) release a 165-cfs minimum flow into the bypassed reach year-round; (2) develop and implement final plans for operation compliance monitoring; (3) develop and implement a final bypassed reach erosion monitoring plan; (4) implement a final recreation plan that includes a new car-top boating access (take-out) upstream from the dam within the project boundary, signs designating a non-project portage trail and a downstream non-project car-top boating access site that is currently owned by the State of Vermont, and enhancements to an existing recreation area near the powerhouse; (5) modify the existing boat barrier at the project to facilitate the new take-out, and (6) develop and implement a final historic properties management

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<sup>5</sup> See *Public Service Company of New Hampshire*, Order Amending License and Setting Minimum Flow, 32 FERC ¶ 62,170 (1985).

plan. No new capacity or changes to project facilities are proposed.

### **WATER QUALITY CERTIFICATION**

11. Under section 401(a) of the Clean Water Act (CWA),<sup>6</sup> 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.<sup>7</sup>

12. On November 20, 2007, Public Service applied to the Vermont ANR Department of Environmental Conservation (Vermont DEC) and the New Hampshire Department of Environmental Services (New Hampshire DES) for water quality certification for the project under section 401 of the Clean Water Act. New Hampshire DES stated, in a letter filed April 23, 2008, that New Hampshire DES and Vermont ANR agree that Vermont ANR will issue a single certification for Vermont and New Hampshire. On November 20, 2008, Vermont ANR, through the Vermont DEC, issued a certification for the project. New Hampshire DES did not act within the one-year time limit and therefore has waived its certification authority.

13. The certification includes 23 conditions, which are set forth in Appendix A of this order and incorporated into the license (see Ordering Paragraph D). The certification includes requirements for run-of-river operation and minimum flow releases, impoundment water level management, impoundment refill management, operation monitoring, dissolved oxygen reporting, fish passage measures upon the occurrence of certain events, turbine rating curve reporting, debris disposal, public access and recreation facilities, riparian zone management around the reservoir, and erosion prevention and sediment control. Article 401 requires the licensee to file, for Commission approval, the plans required by the certification conditions.

14. The EA did not recommend three of the measures required by Vermont DEC's certification, including those requiring: a dissolved oxygen (DO) reporting (condition G), erosion prevention and sediment control (condition R), and a riparian zone management (condition O). Erosion prevention and sediment control and riparian management are

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<sup>6</sup> 33 U.S.C. § 1341(a) (1) (2006).

<sup>7</sup> 33 U.S.C. § 1341(d) (2006).

discussed below, under 10(a)(1) recommendations, due to similar recommendations from other parties. Regarding DO monitoring, the EA did not recommend this measure because a 2004 study by New Hampshire DES concluded that DO in the area is “fully supporting” aquatic life and, therefore, in compliance with state standards; in addition, no change in project operation is proposed with the exception that more flow would be released to the bypassed reach, which could improve DO in the bypassed reach and downstream from the project. However, DO monitoring and reporting are required by certification condition G, and are thus required by the license.

15. On December 19, 2008, Public Service filed an appeal of the November 20, 2008, water quality certification with the Vermont Environmental Court.<sup>8</sup> Ordering Paragraph (D) reserves the Commission’s authority to revise those conditions as necessary upon disposition of the appeal as well as to modify the license as necessary to ensure consistency with those conditions.

### **COASTAL ZONE MANAGEMENT ACT**

16. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),<sup>9</sup> the Commission cannot 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 180 days of its receipt of the applicant's certification.

17. By letter dated June 18, 2007 (filed December 27, 2007), the Connecticut Department of Environmental Protection (Connecticut DEP) notified Public Service that the project is not included among the listed federal activities that require consistency review by Connecticut’s Coastal Management Program. Furthermore, Connecticut DEP stated that the project, which is located 370 miles upstream of Long Island Sound, would have no reasonably foreseeable direct or indirect effect on coastal resources or uses in Connecticut. Therefore, no consistency certification is required.

### **SECTION 18 FISHWAY PRESCRIPTIONS**

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<sup>8</sup> The Vermont Environmental Court has jurisdiction over requests to enforce and review administrative orders issued by the Secretary of the Vermont Agency of Natural Resources.

<sup>9</sup> 16 U.S.C. § 1456(3)(A) (2006).

18. Section 18 of the FPA<sup>10</sup> 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 Commerce or the Secretary of the Interior as appropriate. In a letter filed November 20, 2007, Interior requested that the Commission reserve its authority to require fishways that it may prescribe in the future. Consistent with the Commission's policy, Article 402 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the project.

### **THREATENED AND ENDANGERED SPECIES**

19. Section 7(a)(2) of the Endangered Species Act of 1973,<sup>11</sup> requires federal agencies to ensure 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.

20. The EA noted that FWS staff informed Public Service in a July 9, 2004 phone conversation that there are no known federally listed endangered or threatened species and there is no critical habitat for these species within the project area. In addition, no listed species were identified during a 2006 wildlife and wetlands assessment. Because the presence of listed species has not been documented at the project, the EA concluded that issuing a license would not affect federally listed threatened and endangered species. FWS did not object to this finding in its comments on the EA.

### **NATIONAL HISTORIC PRESERVATION ACT**

21. Under section 106 of the National Historic Preservation Act (NHPA),<sup>12</sup> and its implementing regulations,<sup>13</sup> federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register (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 State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to

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<sup>10</sup> 16 U.S.C. § 811 (2006).

<sup>11</sup> 16 U.S.C. § 1536(a) (2006).

<sup>12</sup> 16 U.S.C. § 470 *et seq.* (2006).

<sup>13</sup> 36 C.F.R. Part 800 (2008).

avoid or minimize any adverse effects.

22. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) on December 8, 2008, with the Vermont and New Hampshire SHPOs. Public Service was invited to, and did, concur with the stipulations of the PA. The terms of the PA will ensure that Public Service addresses and treats all historic properties identified within the project's area of potential effects (APE) through implementation of the Historic Properties Management Plan filed November 24, 2008. Article 404 requires Public Service to implement the PA and HPMP.

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

23. Section 10(j) (1) of the FPA<sup>14</sup> 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,<sup>15</sup> to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

24. In a letter filed November 20, 2007, Interior recommended six fish and wildlife measures, all of which are within the scope of section 10(j). This license includes conditions consistent with three of the six recommendations. These measures are: (1) operate the project in a run-of-river mode (certification condition B); (2) maintain a 165-cfs minimum flow in the bypassed reach year-round (certification condition B); and (3) develop an operation compliance monitoring plan (certification conditions E and F).

25. If the Commission believes that any section 10(j) 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.<sup>16</sup> 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 laws and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife

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<sup>14</sup> 16 U.S.C. § 803(j)(1) (2006).

<sup>15</sup> 16 U.S.C. §§ 661 *et seq.* (2006).

<sup>16</sup> 16 U.S.C. § 803(j)(2) (2006).

resources.

26. In the EA, Commission staff made an initial determination that three of Interior's 10(j) recommendations may be inconsistent with the comprehensive development and public interest standards of sections 10(a) and 4(e) of FPA. These recommendations are: (1) during reservoir refilling, release seasonal aquatic base flows (ABF) below the project; if inflow is less than target flow, release 90 percent of inflow below the project; (2) install and operate upstream and downstream fishways at the project dam; and (3) evaluate the effectiveness of the fishways.

27. By letter dated March 28, 2008, the Commission notified Interior of its preliminary findings of inconsistency under section 10(j) and suggested that a meeting or teleconference could be held to discuss alternatives or present additional information. By letter dated April 23, 2008, FWS stated that it believes its recommendation to release seasonal ABF flows during reservoir refilling is justified and protective of aquatic resources downstream from the project, but agrees with staff's alternative recommendation. FWS declined to meet concerning the remaining dispute over the need for upstream and downstream fish passage facilities, stating that a meeting would be unproductive because FWS staff recommend construction of fishways and FERC staff do not, and there is no compromise between these recommendations. Therefore, the staff findings remain unchanged from those presented in the EA. I discuss the rationale for not requiring these measures below.

#### Upstream Fish Passage

28. There are no upstream fish passage facilities at the project and Public Service has proposed none. Interior (10(j) recommendation 5), New Hampshire Fish & Game, Trout Unlimited, and the Watershed Council all recommend upstream passage immediately without any change in management strategy. Interior also requested a reservation of authority to prescribe fishways in the future. Vermont DEC (certification condition I) requires that upstream passage be installed in the future, but only after a request by the Vermont DEC and a change in fisheries management which would emphasize self-sustaining trout populations and reducing or eliminating stocking programs.

29. The existing fish community in the project area consists of resident trout species and a typical New England assemblage of other resident fish species, including sunfish, suckers, and minnows. Some of these species, including trout, suckers, and certain minnows are known to migrate varying distances seasonally in some rivers depending on the need to find suitable habitat for spawning or overwintering. Successful reproduction of brown and brook trout is documented both upstream and downstream of the project in tributaries and may also occur in the Connecticut River. If upstream passage is provided at the project, trout and other species may have access to additional habitat and their



populations may exhibit higher survival and growth. However, there is nothing in the record to indicate that existing survival and growth are deficient, nor is there any information to indicate whether access to additional habitat is currently a limiting factor for fish populations. In addition, upstream fish passage at this project would have an estimated capital cost of \$618,000 and an annual cost of \$44,900. The EA therefore did not recommend upstream fish passage.

30. In its comments on the EA, FWS states that the EA failed to give due weight to the expertise of state fisheries agencies or to Trout Unlimited and the Watershed Council, who have first-hand knowledge of the upper Connecticut River and its fishery resources. FWS states that there is ample evidence, from local knowledge and information submitted by the state agencies, that trout populations would be enhanced by permitting access to better spawning habitat upstream from the project. Further, FWS does not believe that 10(j) authorizes Commission staff to submit their own technical opinion on matters of fish resources protection and enhancement over those of the resources agencies. In its comments on the EA, the Watershed Council disagrees with the EA and claims that, because Public Service realizes income from the free use of a public trust resource (the Connecticut River), it should be required to improve spawning potential for fish.

31. I agree with the EA finding that upstream passage at the Canaan Project is not warranted at this time. However, Vermont DEC's certification condition I requiring upstream fish passage in the case of future changes in fisheries management and Interior's section 18 reservation (Article 402) allow for the installation of fish passage in the future if conditions change. I conclude, in accordance with FPA section 10(j)(2)(A), that FWS's recommendation for immediate installation of upstream fish passage is inconsistent with the comprehensive planning standard of sections 4(e) and 10(a) 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 the existing fish community at this project.

#### Downstream Fish Passage

32. There are no specific downstream passage facilities at the project, so fish that pass the project downstream do so either via the spillway or through the turbines. Public Service proposes no downstream passage measures. Interior (10(j) recommendation 5), New Hampshire Fish & Game, Trout Unlimited, and the Watershed Council recommend downstream passage immediately. Vermont DEC's certification requires that downstream passage be installed in the future, but only after a request by the Department and a change in fisheries management which would emphasize self-sustaining trout populations and reducing or eliminating stocking programs.

33. Downstream passage facilities would have an estimated capital cost of \$156,000 and an annual cost of \$11,370. The EA did not recommend downstream fishways, concluding that mortality from turbine passage at the project is most likely minimal because the project's head and turbine type probably result in over 90 percent survival of any entrained fish.

34. I agree with the EA finding that downstream passage at the Canaan Project is not warranted at this time. However, Vermont DEC's certification condition H requiring downstream fish passage in the case of future changes in fisheries management and Interior's section 18 reservation (Article 402) allow for the installation of fish passage in the future if conditions change. I conclude, in accordance with FPA section 10(j)(2)(A), that FWS's recommendation for immediate installation of downstream fish passage is inconsistent with the comprehensive planning standard of sections 4(e) and 10(a) 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 the existing fish community at this project.

#### Fishways Effectiveness Evaluation

35. Interior recommends (10(j) recommendation 6), that Public Service evaluate the effectiveness of its recommended upstream and downstream fishways. Because the EA did not recommend either downstream or upstream fishways, the EA concluded that effectiveness studies would not be necessary. Public Service, in its comments on the EA, states that it opposes fishway effectiveness studies because there is no proven design, size, or location for fish passage for resident stocked trout, and no consensus that such fish have any drive to migrate upstream or downstream. Thus, Public Service states that, in the absence of firm supporting data regarding the expected movement of indigenous fish populations, it is very difficult, if not impossible, to evaluate the effectiveness of any fish passage facilities installed. In addition, Public Service notes that effectiveness studies would be more expensive than the annual cost of \$3,630 estimated in the EA, and could take many years, multiple iterations, and still not yield any definitive or practically useful results.

36. I conclude that the potential benefits of upstream and downstream fishways currently do not justify the cost at the Canaan Project, and effectiveness studies are therefore unnecessary. However, if downstream and/or upstream fishways are installed at the project, because they are required as a result of certification conditions H and I or any future section 18 prescription (Article 402), then I agree that effectiveness studies should be conducted, as required by certification condition J. As staff concluded in the EA, effectiveness studies would ensure any passage facility is safely and effectively passing fish.

**RECOMMENDATIONS PURSUANT TO SECTION 10(a)(1) OF THE FPA**

37. Section 10(a)(1) 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.

Agency Notification

38. Interior filed one recommendation pursuant to section 10(a) of the FPA, as follows: The licensee shall serve, prior to or at the time of filing with the Commission, all representatives of the Department on the service list with a copy of any request the licensee may file for amendment of license, amendment or appeal of any fish and wildlife-related license conditions, or extension of time requests for project construction or implementation of license article provisions. The service list for this relicensing proceeding expires upon issuance of this order, and the party status of any intervenors in the proceeding also terminates at that point. Consequently, the Commission's rule requiring service, 18 C.F.R. §2010 (2008), does not require that former parties be served with relevant pleadings filed after a permit, license, or exemption has been issued. However, Public Service is required to consult or notify Interior, through FWS, on a number of measures required by this license; see Article 401(d) requiring consultation with FWS for proposed changes to bypassed reach flows, Article 406 dictating use and occupancy of project lands and water, condition F requiring a monitoring plan for impoundment and flow management, and conditions G, H, and I requiring fish passage and an associated effectiveness study. Ordering paragraph (G) requires Public Service to serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to the filing. Moreover, entities interested in a specific project may register for the Commission's "e-subscription" in order to be notified by e-mail about future correspondence regarding a specific docket.<sup>17</sup>

Project Retirement

39. The Watershed Council, in its comments on the EA, does not call for the removal of the Canaan Project dam at this time, but recommends that Public Service remove the dam if, in the future, the project should become uneconomical and no longer produce

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<sup>17</sup>See <http://www.ferc.gov/docs-filing/esubscription.asp>. E-Subscription subscribers receive docketed correspondence, issuances, and news releases electronically.

power and that Public Service provide the funds for the removal. The Watershed Council recommends that the license order require, in the case of this scenario, immediate removal of the dam at the expense of Public Service.

40. The Commission has denied such requests where no party has suggested decommissioning in the foreseeable future, there is no record evidence indicating the life of the project will end during the term of the new license, and there is no indication that the licensee would lack the financial resources to decommission the project if it were ordered to be decommissioned.<sup>18</sup> However, the licensee is ultimately responsible for meeting a reasonable level of retirement costs when the project is retired. In addition, in the event that the project ceases to operate, Public Service would be required to file a surrender application. Because there is no evidence that the Canaan Project is in poor physical condition or that the project would not remain viable throughout the term of the license, the EA did not consider removal of the electric generating equipment, with or without dam removal, to be a reasonable alternative, and this license does not require Public Service to remove the dam in the case of project retirement.

#### Erosion Monitoring

41. Public Service proposes to monitor shoreline erosion in the bypassed reach, through photographic documentation, one and five years after licensing. The results would be compared to 2006 baseline information in order to evaluate if further measures, including additional monitoring, are necessary. Vermont ANR and New Hampshire Fish and Game agree with this proposal and also recommend cross-sectional surveys and monitoring of the impoundment shoreline as well as the bypassed reach. The Watershed Council recommends that FERC include a license condition that requires Public Service to develop and implement a plan to reduce sediment from the erosion sites along the project reservoir on the New Hampshire shore. The Vermont DEC's certification requires shoreline erosion data collection during the first and fifth summers following the effective date of the license and following any flood event exceeding a flow of 5,000 cfs.

42. Regarding the bypassed reach, the EA noted significant scouring downstream from the dam, and that some of this erosion is related to sediment being retained in the

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<sup>18</sup> See *Project Decommissioning at Relicensing, Policy Statement, December 14, 1994*, 60 Fed. Reg. 339 (Jan. 4, 1995); FERC Statutes and Regulations ¶ 31,011 (1994). See also, *Wisconsin Valley Improvement Company, et al.*, 76 FERC ¶ 61,050 (1996), order on reh'g, 80 FERC ¶ 61,054 (1997), aff'd, *Wisconsin Valley Improvement Company v. FERC*, 236 F.3d 738 ( D.C. Cir. 2001); *Northern States Power Company-Wisconsin*, 78 FERC ¶ 61,120 (1997); *Kelley v. FERC*, 96 F.3d 1482 at 1490 (D.C. Cir. 1996).

impoundment rather than being passed downstream. The EA did not recommend erosion monitoring in the bypassed reach, however, because no structures are at risk from additional scouring, and no connection has been identified between erosion in the bypassed reach and effects on other resources (aquatic habitat, riparian vegetation, etc.). The bypassed reach has quality habitat for macroinvertebrates and fish, such that the retention of sediment by the project dam does not appear to be problematic to habitat within the bypassed reach. Further, with run-of-river operation and minimum flows in the bypassed reach, as required by certification condition B, flow fluctuations downstream would merely reflect non-project-related changes in inflow.

43. Regarding the impoundment, the EA found that erosion there is not project-related but the result of naturally high peak inflows and adjacent roadway drainage problems. In addition, because the project would continue to operate in a run-of-river mode, the impoundment would continue to be held stable. Thus, the EA did not recommend monitoring of erosion within the impoundment. In its comments on the EA, the Watershed Council disagrees, noting that Public Service gathers revenue from the use of a public resource (the Connecticut River), and impoundment erosion monitoring would not be a major expense to Public Service. The Watershed Council notes that the monitoring results could be presented to land owners or either state as appropriate so immediate action may be taken to address the erosion.

44. Although I agree with the EA findings concerning erosion monitoring, certification condition R requires erosion monitoring and also requires that Public Service design and implement erosion prevention and sediment control measures as necessary and thus these measures are required by the license.

#### Riparian Vegetation Management Plan

45. Other than continued mowing at project access and recreation sites, Public Service proposes no measures for managing riparian vegetation. Vermont ANR and New Hampshire Fish and Game recommend that Public Service develop a riparian vegetation management plan to enhance wildlife habitat around the reservoir and water quality in the reservoir through the encouragement of a naturally-vegetated riparian zone. The Watershed Council also recommends vegetation management measures, including planting native woody plant species along the Vermont shoreline at the project and ceasing mowing activity around the powerhouse area. The certification requires Public Service to develop a riparian zone management plan, in consultation with Vermont DEC, New Hampshire DES, the Watershed Council, the towns of Canaan and Stewartstown, Connecticut River Joint Commissions, Trout Unlimited, and state highway agencies. The goal of the required plan is to establish and maintain an undisturbed, naturally-vegetated riparian zone along the river.

46. The EA noted that developing and implementing a riparian vegetation management plan could benefit wildlife and water quality at the project by enhancing the existing riparian buffer, but because the majority of project shoreline is already naturally vegetated, covered with rip-rap, or characterized by steep slopes, any benefit would likely be insignificant or unmeasurable. Rather, the EA recommended that the recreation plan include implementation of mowing practices that allow shoreline grasses and shrubs to grow to maturity along all parts of the shoreline that are not necessary for boating access, in order to provide an additional riparian buffer in these areas. However, the vegetation management plan is required by certification condition O and thus is required by the license.

### Recreation Plan

47. Project recreation facilities currently include: (1) a parking area, a viewing area, and fishing access area, all located adjacent to the dam on the Vermont side of the river that provides access to the impoundment; and (2) a parking area on the Vermont side of the river near the powerhouse with access to bank fishing at the tailrace. In its application, Public Service proposed to implement a recreation plan that includes a portage facility, which would consist of a new boat access site (take-out) upstream of the dam, adjustment of the existing boat barrier so that it is angled from the midsection of the railroad bridge down to the access area, and new signage for portage around the dam (using the existing Power House Road) directing boaters to an existing State of Vermont-owned car-top boat access site (put-in) located immediately downstream from the project tailrace and the Route 114 Bridge. The licensee's proposed recreation plan also includes measures to enhance use of the area near the powerhouse area through provision of a picnic table and signage. Public Service would continue to maintain the powerhouse area and the proposed new upstream take-out, which are located entirely within the project boundary, and would annually inspect the State of Vermont-owned downstream access and conduct any necessary maintenance work at that site. Public Service proposes to continue to mow in the area of the proposed upstream take-out and portage access and around the powerhouse in order to facilitate bank fishing.

48. Vermont ANR recommended that Public Service develop a riparian vegetation management plan that would identify, among other things, invasive plant species and the need for supplemental planting of native vegetation, as well as a recreation plan that includes interpretive signage on historical and natural resources. New Hampshire Fish and Game agreed with Vermont ANR's recommendations. Vermont DEC, as a condition of its certification, requires Public Service to file a recreation plan for approval by Vermont DEC (after consultation with the New Hampshire DES). This plan requires interpretive and directional signs and details of erosion control (where appropriate). Condition P does not specify which of Public Service's proposed recreation measures are

to be included in the recreation plan. As discussed above, the certification also requires Public Service to develop a riparian management plan with the goal of establishing and maintaining an undisturbed, naturally-vegetated riparian zone along the river.

49. The EA found that recreation facilities at the project appear to be adequately meeting recreational demand, except for the lack of a formally designated portage. Providing the portage, as proposed by Public Service, would ensure that boaters are able to safely navigate around the project, and improving the recreation area near the powerhouse would enhance the recreation experience at the project. The EA also noted that due to the rich history of the area and its accessible location, educational signage about cultural resources would enhance the recreational sites; likewise, the EA noted that, should invasive species management be necessary, educational signs should be placed at recreational access sites for the purpose of educating the public about how to prevent the spread of such species. The EA therefore recommended that Public Service implement its proposed recreation plan, with additional informational signage on cultural and natural resources (including any necessary invasive species educational signs, if necessary). The EA also recommended limited mowing to protect riparian vegetation. In its comments on the EA, the Watershed Council reemphasized the need for signage for proper and responsible handling of invasive aquatic species to be provided at the put-in and take-out portage areas.

50. No other comments were filed concerning the recommended recreation plan. Article 401 requires that the recreation plan required by certification condition P be filed with the Commission for approval. Article 403 requires that the plan include the recreation enhancement and management measures included in Public Service's proposal, as well as the additional informational signage as noted above and measures to maintain project recreation facilities, including the downstream put-in.<sup>19</sup> Article 403 also requires Public Service to consult with the Commission's Division of Dam Safety and Inspections, New York Regional Office, regarding any necessary measures for adjusting the boat barrier in order to facilitate the upstream take-out. As discussed below, Article 203 requires Public Service to file revised exhibit G drawings enclosing the downstream site, including the car-top boat launch, parking, and access road. Article 403 does not require vegetation management at recreation areas because certification condition O requires a riparian management plan.

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<sup>19</sup> Standard article 5 requires that licensee obtain sufficient property rights to ensure that it can operate and maintain the facility. Public Service may enter into a maintenance agreement with the State of Vermont, but maintenance of the facility is Public Service's ultimate responsibility.

### Boat Cleaning Station

51. The Watershed Council recommends that Public Service construct and maintain a boat cleaning station at the portage take-out and put-in for the purpose of didymo (nuisance algae) control. The record contains no documentation of the presence of didymo in the project area, so a connection between continued project operation and the need for didymo control has not been established. Therefore, the EA did not recommend a boat cleaning station and this license does not require a boat cleaning station. However, certain invasive species have been documented in the project area and the EA recommended that the recreation plan include informational signage on invasive species education at boating access areas, based on consultation with Vermont ANR, and New Hampshire Fish and Game. In its comments on the EA, the Watershed Council reemphasized the need for signage for proper and responsible handling of invasive aquatic species to be provided at the put-in and take-out portage areas. The recreation plan required by Article 403 requires that the plan include provisions for additional signage informing the public about invasive species, as necessary, in consultation with the agencies.

## **OTHER ISSUES**

### Trashracks Replacement or Overlays

52. The project's existing trashracks have a 3-inch clear spacing, which is wider than the 1.0-inch clear spacing typically recommended for fish protection; however, the maximum approach velocity is below FWS's typical recommendation of 2.0 fps. Given that some entrainment likely occurs, the EA concluded that trashracks with a 1-inch clear spacing would likely reduce the number of fish entrained at the project. In its comments on the EA, Public Service claims that new trashracks or the addition of bars or overlays with one-inch clear spacing is (1) unnecessary because there is limited entrainment and mortality, and (2) impractical because the operator responsible for clearing debris from the intake would need to attend to Canaan daily (including weekends) if there is one-inch clear spacing, as opposed to three times per week (Monday, Wednesday, and Friday) during the summer months and five days a week (Monday-Friday) during the winter months with the existing 3-inch clear spacing. Based on my review of the record, including the EA, which found that the fish that are entrained at the project are likely to have at least a 90 percent survival rate, I do not consider the potential benefits of modifying the trashracks worth the estimated annual cost of \$8,390.

### Project Boundary

53. The downstream put-in portion of the proposed portage includes an access road and car-top boating access to the river, with associated parking, on the Vermont side of the



river near the Route 114 Bridge. The existing put-in is owned and maintained by the State of Vermont. Public Service proposes to provide signage, in consultation with Vermont, to inform the public of the access area and public parking.

54. Vermont DEC's condition Q requires Public Service to evaluate the feasibility of including the existing boat access within the project boundary, and to report its findings, and a schedule if found feasible, to the Vermont DEC within one year of the effective date of the license. Staff's alternative in the EA did not recommend an evaluation, but rather recommended that the site be included in the project boundary because this is the only boating access available downstream from the project and the only site available for those wishing to portage around the dam. Making this site a project recreation facility (and thus enclosing it within the project boundary) will ensure that it is maintained through the term of the license. Article 203 requires Public Service to file revised exhibit G drawings enclosing the downstream site, including the car-top boat launch, parking, and access road.

## **ADMINISTRATIVE CONDITIONS**

### **A. Annual Charges**

55. 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 and occupancy of U.S. lands, where appropriate. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW, like this project, are not assessed an annual charge.

### **B. Exhibit F Drawings**

56. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires this filing for the approved Exhibit F drawings.

### **C. Exhibit G Drawings**

57. The Exhibit G drawings filed on August 3, 2007, enclose all of the project works and the existing parking area, aesthetic lookout and fishing area near the dam gatehouse on the Vermont side of the river (gatehouse area), and the parking area near the powerhouse with access to bank fishing (powerhouse area). The Exhibit G drawings do not enclose the proposed downstream car-top boat access site and portage trail (extending from the existing Powerhouse Road) with a parking area that would be used during portage, located immediately downstream from the Route 114 Bridge. As noted above, the project boundary should be revised to enclose the proposed downstream car-top boat

access site and parking area, and the portage trail up to the point that it meets the existing Power House Road. Article 203 requires Public Service to file revised Exhibit G drawings. The Exhibit G drawings filed on August 3, 2007, are not approved and are not made part of the license [see Ordering Paragraph (C)].

#### **D. Use and Occupancy of Project Lands and Waters**

58. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 406 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. Consultation on Resource Plans**

59. Appendix A includes certification conditions that require the licensee to file plans with the Vermont DES. The conditions, however, do not require Commission review and approval of these plans. Therefore, Article 401(a) requires the licensee to file the plans with the Commission for approval. Further, I note that any license amendments needed, in relation to the certification conditions, must be filed with the Commission for approval.

### **STATE AND FEDERAL COMPREHENSIVE PLANS**

60. Section 10(a)(2)(A) of the FPA,<sup>20</sup> 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.<sup>21</sup> Under section 10(a)(2)(A), staff identified and reviewed nine comprehensive plans to determine whether the project would be consistent with the provisions. Out of the nine comprehensive plans, staff determined that four comprehensive plans are relevant to the project.<sup>22</sup> No conflicts were found.

### **APPLICANT'S PLANS AND CAPABILITIES**

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<sup>20</sup> 16 U.S.C. § 803(a)(2)(A) (2006).

<sup>21</sup> Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2008).

<sup>22</sup> The list of comprehensive plans can be found in section 5.5 of the final EA.

61. In accordance with section 10 of the FPA,<sup>23</sup> and the Commission's regulations, Commission staff have evaluated Public Service's record as a licensee with respect to the following: (A) need for power; and (B) safe management, operation, and maintenance of the project<sup>24</sup> and (C) conservation efforts. I accept the staff's finding in each of the following areas.

**A. Need for Power**

62. To assess the need for project power, staff looked at the needs in the operating region in which the project is located which is the Northeast Power Coordinating Council (NPCC) region of the North American Electric Reliability Council (NERC). The projected ten-year compound annual growth rate for net annual energy is about 1.2 percent over the 2007-2016 period, with a summer peak demand growth rate of 1.7 percent in the New England area. Staff conclude that the project's power, potential displacement of non-renewable fossil-fired generation, and contribution to the region's diversified generation mix will help meet the need for power in this region.

**B. Safe Management, Operation, and Maintenance of the Project**

63. Staff reviewed Public Service's management, operation, and maintenance of the project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Regulations and Engineering Guidelines. Staff conclude that the dam and other project works are safe, and find that there is no reason to believe that Public Service cannot continue to safely manage, operate, and maintain project facilities under a subsequent license.

**C. Conservation Efforts**

64. Public Service promotes conservation efforts for residential and business through efficiency programs such as home energy assistance and solutions, energy star appliance and lighting information and programs, and small and large business energy solutions.<sup>25</sup>

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<sup>23</sup> 16 U.S.C. § 803 (2006).

<sup>24</sup> In Order No. 513, the Commission exempted licenses of minor projects, such as the Canaan Project, whose licenses waive sections 14 and 15 of the FPA, from the information requirements of 18 C.F.R. § 16.10. *See Hydroelectric Relicensing Regulations Under the Federal Power Act*, 54 *Fed. Reg.* 23756 (June 2, 1989) and 55 *Fed. Reg.* 10768 (March 23, 1990), FERC Statutes and Regulations, Regs. Preambles 1986 1990 ¶ 30,854 at p. 31,445 (May 17, 1989).

<sup>25</sup> See [www.psnh.com](http://www.psnh.com).

These programs show that Public Service is making an effort to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

## PROJECT ECONOMICS

65. In determining whether to issue a subsequent license for an existing 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.*,<sup>26</sup> 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.

66. In applying this analysis to the Canaan Project, staff considered two licensing alternatives: Public Service's proposal and the project as licensed herein with staff-recommended measures and certification conditions. As proposed by Public Service, the levelized annual cost of operating the Canaan Project would be \$553,880 or \$80.98/MWh. The proposed project would generate an estimated average of 6,840 MWh of energy annually. When staff multiply their estimate of average annual generation by the alternative power cost of \$65.00/MWh,<sup>27</sup> staff get a total value of the project's power of \$444,600. To determine whether the proposed project is currently economically beneficial, staff subtracts the project's cost from the value of the project's power.<sup>28</sup> Therefore, in the first year of operation, the project would cost \$109,280 or \$15.98/MWh, more than the likely alternative cost of power.

67. As licensed herein with certification conditions and staff-recommended measures,<sup>29</sup>

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<sup>26</sup> 72 FERC ¶ 61,027 (1995).

<sup>27</sup> The alternative power cost of \$65.00 per MWh is based on Public Service's estimated value of project generation.

<sup>28</sup> Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the EA issued March 26, 2008, and updated to include the certification conditions.

<sup>29</sup> The additional staff-recommended measures include maintenance of the state's downstream boat access, additional recreation measures, and implementation of the PA.

the levelized annual cost of operating the project would be about \$557,130 or \$81.45/MWh. Based on the same alternative power cost and estimated average annual generation of 6,840 MWh, the project would cost \$112,530 or \$16.45/MWh, more than the likely alternative cost of power.

68. In considering public interest factors, the Commission takes into account that hydroelectric projects, like the Canaan Project, offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include their capability to provide an almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor-correction through condensing operations, and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout.

69. Although Commission staff's analysis shows that the project as licensed herein would cost more to operate than our estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

70. Although staff do 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 generators 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**

71. Sections 4(e) and 10(a)(1) of the FPA<sup>30</sup> require the Commission to give equal consideration to the 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. Any license issued shall be such as in the Commission's judgment will 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.

72. The EA for the project contains background information, analysis of effects, and

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<sup>30</sup> 16 U.S.C. § 797(e) and 803(a)(1) (2006).

support for related license articles. I conclude, based on the record of this proceeding, including the EA and the comments thereon, that licensing the Canaan 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.

73. Based on my independent review and evaluation of the Canaan Project, recommendations from resource agencies and other stakeholders, certification conditions, and the no-action alternative, as documented in the EA, I have selected the proposed Canaan Project, with the staff-recommended measures including the certification conditions, and find that it is best adapted to a comprehensive plan for improving or developing the Connecticut River waterway.

74. I selected this alternative because: (1) issuance of the subsequent license would serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures would protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 1.1-MW of electric energy generated from a renewable resource may offset the use of fossil-fueled, diesel generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

### **LICENSE TERM**

75. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.<sup>31</sup> This license authorizes no new capacity, little new construction, and a minor amount of new environmental measures. Consequently, a 30-year license for the Canaan Project is appropriate. Because the term of the current license does not expire until July 31, 2009, this license is not effective until August 1, 2009.<sup>32</sup>

#### The Director orders:

(A) This license is issued to Public Service Company of New Hampshire

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<sup>31</sup> See *Consumers Power Company*, 68 FERC ¶ 61,077 at 61,383-84 (1994).

<sup>32</sup> For this reason, the various deadlines in the license articles are measured from August 1, 2009, the effective date, rather than from the order issuance date.

(licensee), for a period of 30 years, effective August 1, 2009, to operate and maintain the Canaan 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, described in the project description and the project boundary discussion of this order:

(2) Project works consists of: (1) a 275-foot-long, 15-foot-high concrete gravity dam that includes: (a) a 150-foot-long spillway equipped with 3.5-foot-high wooden flashboards utilized year-round; (b) a 56-foot-wide section equipped with stoplogs; (c) a 20-foot-wide waste gate section equipped with a 20-foot-wide, 15-foot-high steel Taintor gate; (d) a gatehouse with an intake structure equipped with a 12.5-foot-wide, 12-foot-high steel gate with a trashrack with 3-inch clear bar spacing; and (e) a non-overflow section between the waste gate and intake structure impounding; (2) a 20-acre impoundment with a normal water surface elevation of 1,055.15 feet mean sea level; (3) a 1,360-foot-long, 9.0-foot-diameter wood-stave penstock; (4) two 21.3-foot-high, 15.3-foot-diameter surge tanks; (5) a powerhouse with a single generating unit with an installed capacity of 1,100 kW; (6) a 400-foot-long tailrace; (7) a 1,450-foot-long, 34.5-kV transmission line; and (8) 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: Pages A-1 through A-8 of the license application filed July 30, 2007.

Exhibit F: The following Exhibit F drawings filed on July 30, 2007:

Exhibit F Drawings	FERC No. 7528-	Description
F-1	1001	Site Plan & Profile
F-2	1002	Plan & Elevation of Dam
F-3	1003	Sections
F-4	1004	Power House Floor Plan, Elevations & Sections

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, 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 and F described above are approved and made part of the license. The exhibit G drawings do not enclose a proposed downstream car-top boat launch with portage access and parking located immediately downstream from the Route 114 Bridge. Therefore, the exhibit G drawings are not approved.

(D) This license is subject to the conditions of the water quality certification issued by the Vermont Department of Environmental Conservation pursuant to Section 401(a) of the Clean Water Act, 33 U.S.C. §1341(a)(1), as those conditions are set forth in Appendix A to this order. Authority is reserved to the Commission to amend this license to include such water quality certification conditions as may be required by the Vermont Department of Environmental Conservation upon resolution of the appeal filed by the licensee of the water quality certification issued November 20, 2008, and to modify existing conditions of this license as necessary to achieve consistency with any such additional certification conditions.

(E) 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.

(F) This license is also subject to Articles 1 through 18 set forth in Form L-12 (revised October 1975), entitled "Terms and Conditions of License for Constructed Minor Project Affecting the Interests of Interstate or Foreign Commerce" (see 54 FPC 1799 *et seq.*), attached to and made a part of this license. The license is also subject to the following additional articles:

Article 201. *Administrative Annual Charges.* The licensee shall pay the United States annual charges, effective the first day of the month in which the license becomes effective, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purposes of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 1,100 kilowatts. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kilowatts will not be assessed annual charges.

Article 202. *Exhibit F Drawings.* Within 45 days of the date of the effective date



Project No. 7528-009

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of the license, the licensee shall file the approved exhibit F drawings in aperture card and electronic file formats.

(a) Three 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 Drawing Number (i.e., P-7528-1001 through P-7528-1004) 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 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.

(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 indentified as (CEII) material under 18 CFR §388.113(c). 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-7528-1001, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY – black and 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

Article 203. Exhibit G Drawings. Within 60 days of the effective date of this license, the licensee shall file, for Commission approval, revised exhibit G drawings enclosing all project features that are necessary for operation and maintenance of the project, including the car-top boat access site with parking located immediately downstream from the Route 114 Bridge and the access road (canoe portage), as depicted in the draft recreation plan submitted with the license application, up until the point that it meets the existing Power House Road. The exhibit G drawings shall comply with sections 4.39 and 4.41 of the Commission's regulations, 18 C.F.R. sections 4.39 and 4.41 (2008).

Article 401. Commission Approval, Reporting, Notification, and Filing of Amendments Required by Mandatory Conditions.

(a) Requirement to file plans for Commission approval.

Various conditions of this license found in the Vermont Department of Environmental Conservation's (Vermont DEC) certification (Appendix A) require the licensee to prepare and implement plans in consultation with other entities for approval by Vermont DEC without prior Commission approval. Each such plan shall also be submitted to the Commission for approval. These plans are listed below:

Vermont DEC Condition	Plan Name	Date Due to Commission
E	Flow Management Plan	Within 6 months of the effective date of the license
F	Monitoring Plan for Impoundment and Flow Management	Within 6 months of the effective date of the license
H	Downstream Fish Passage Design	Notify Commission of request by the Vermont DEC and file plan within two years of the request
I	Upstream Fish Passage Design	Notify Commission of request by the Vermont DEC and file plan within two years of the request
J	Passage Effectiveness Study Plan	Notify Commission of request by the Vermont DEC and file plan within 1 year of the request
L	Debris Disposal Plan	Within 9 months of the effective date of the license
O	Riparian Zone Management Plan	Within 9 months of the effective date of the license
P	Recreation Plan	Within 1 year, three months of the effective date of the license

The licensee shall submit to the Commission documentation of consultation, copies of comments and recommendations by consulted entities made in connection with each plan and a description of how each plan accommodates the comments and recommendations. 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 make changes to any plan or recommendation submitted. Upon Commission approval, each plan or recommended measure becomes a requirement of the license, and the licensee shall implement the plan or measure.

(b) Requirement to file reports with the Commission

Various conditions of this license found in the Vermont DEC's certification require the licensee to prepare reports documenting the results of various studies and surveys without filing the reports with the Commission. Each such report shall also be filed with the Commission. These reports are listed below:

Vermont DEC Condition	Report Name	Date Due to Commission
G	Dissolved Oxygen Study	By March 1 following the season of sampling
K	Turbine Rating Curves	Within one year of the effective date of the license issuance
R	Shoreline Erosion Monitoring and Report	By March 1 following the fifth summer following the effective date of the license

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.

(c) Requirement to Notify Commission of Planned and Unplanned Deviations from License Requirements

The Vermont DEC's certification conditions noted below would allow the licensee to temporarily modify project operation under certain conditions. The Commission shall be notified prior to implementing such modifications except in the event of an emergency. The Commission must be notified of emergency modifications, as soon as possible, but no later than 10 days after each such incident. The New Hampshire Department of Environmental Services shall also be notified prior to implementing any

modifications in the same manner as the Commission.

Vermont DEC Condition	License Requirement
C	Maintenance drawdowns shall not exceed 1.0 foot below the dam crest unless approval is granted by Vermont DEC.
M	Any proposals for project maintenance or repair work, including drawdowns exceeding 0.5 foot below the fixed dam crest to facilitate repair/maintenance work, shall be filed with the Vermont DEC for prior review and approval, if said work may have a material adverse effect on water quality or cause less-than full support of an existing use or a beneficial value or use of the waters.
N	Any proposed limitations to river access to be imposed by the licensee shall first be subject to written approval by the either the Vermont DEC or the New Hampshire DES, depending on which bank of the river is involved. In cases where an immediate threat to public safety exists, access may be restricted without prior approval; the licensee shall so notify the appropriate department and shall file a request for approval, if the restriction is to be permanent or long term, within 14 days of the restriction of access.

(d) Requirement to File Amendment Applications.

The Vermont DEC's certification conditions noted below contemplate unspecified long-term changes to project operations or 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. For changes proposed under condition B, the licensee shall consult with the U.S. Fish and Wildlife Service.

Vermont DEC Condition	Project Modification
B	The bypassed reach flow (165 cfs, or instantaneous flow, if less) shall be provided as full crest spillage, unless an alternative method is approved by Vermont DEC after review and consultation with New Hampshire DES to assure that aquatic habitat and aesthetics will be supported.

J	Adjustments to fish passage facilities, if needed based on the results of effectiveness studies
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Article 402. *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 403. *Recreation Plan.* The recreation plan required by Vermont DEC condition P shall include provisions for the measures listed below, including descriptions of the facilities, appropriate maps and conceptual drawings showing the type and location of the facilities in relation to the project boundary and an implementation schedule.

The recreation measures shall include: (1) a new upstream boating access (take-out for portage) with directional signage for portage around the dam; (2) consultation with the Commission's Division of Dam Safety and Inspections, New York Regional Office, regarding any necessary measures to adjust the boat barrier for the provision of the upstream take-out; (3) directional signage at the downstream site (put-in for portage); (4) installation of a picnic table and signage at the powerhouse recreation area; (5) additional signage educating the public about natural resources (including invasive species educational signs, if necessary), and cultural resources at the project; (6) documentation of consultation with Vermont Agency of Natural Resources, the New Hampshire Department of Environmental Services, the New Hampshire Fish and Game Department, and the Vermont and New Hampshire State Historic Preservation Officers on the design of the above-mentioned signs; and (7) measures to maintain all new and existing project recreation facilities and access located at the upstream take-out, dam gatehouse, powerhouse, and downstream put-in.

Article 404. *Programmatic Agreement and Historic Properties Management Plan.* The licensee shall implement the Programmatic Agreement Among the Federal Energy Regulatory Commission and the Vermont and New Hampshire State Historic Preservation Officers for Managing Historic Properties that may be Affected by Issuing a License to Public Service of New Hampshire for the Continued Operation of the Canaan Hydroelectric Project in Essex County, Vermont and Coos County, New Hampshire (FERC No. 7528), executed on December 8, 2008, including but not limited to the Historic Properties Management Plan (HPMP) for the project (filed November 24, 2008). In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the provisions of its approved HPMP. The Commission reserves the

authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated, the licensee shall obtain approvals from or make notifications to the Commission and the Vermont and New Hampshire State Historic Preservation Offices where the HPMP calls upon the licensee to do so.

Article 406. 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. If no conveyance was made during the prior calendar year, the licensee shall so inform the Commission in writing no later than January 31 of each year.

(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; and (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.

(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 this order to be consulted on matters related to the filing. Proof of service on these entities must accompany the filing with the Commission.

(H) This order is issued under authority delegated to the Director and is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing of this order shall constitute acceptance of this license.

J. Mark Robinson  
Director  
Office of Energy Projects

Project No. 7528-009

34

**Form L-12  
(October, 1975)**

**FEDERAL ENERGY REGULATORY COMMISSION  
TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED  
MINOR PROJECT AFFECTING THE INTERESTS OF  
INTERSTATE OR FOREIGN COMMERCE**

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 area and project works shall be 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.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, 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 such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration 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 submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. 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 or 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 thereunder, 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 streamgaging 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 cannot 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 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. 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. 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 17. 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

Project No. 7528-009

39

license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 18. 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****VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
WATER QUALITY CERTIFICATION CONDITIONS  
ISSUED NOVEMBER 20, 2008**

- A. **Compliance with Conditions.** The applicant shall operate and maintain this project consistent with the findings and conditions of this certification, where those findings and conditions relate to protection of water quality and support of designated and existing uses under Vermont Water Quality Standards and other appropriate requirements of state law and New Hampshire Water Quality Standards where applicable.
- B. **Flow Management.** Except as allowed in Condition C below, the facility shall be operated in a true run-of-the-river mode where instantaneous flows below the tailrace shall equal instantaneous inflow to the impoundment at all times. When the facility is not operating, all flows shall be spilled at the dam. In the river reach bypassed by the penstock, a flow of 165 cfs, or instantaneous inflow if less, shall be maintained at all times; the bypass flow shall be provided as full crest spillage unless an alternate method is approved by the Department after review and consultation with the N.H. Department of Environmental Services to assure that aquatic habitat and aesthetics will be supported.
- C. **Impoundment Water Level Management.** The conservation flow shall be maintained as full crest spillage unless an alternative method combining spillage with a gate discharge and/or fishway flows is approved by the Department after the Department's consultation with the N.H. Department of Environmental Services, and a determination that aesthetics will continue to be fully supported. During maintenance drawdowns, the water level will be maintained at or above twelve inches below the fixed dam crest (at or above elevation 1050.5 feet msl), unless special approval is granted by the Department under Condition M below. Any drawdown for maintenance or repair work shall be done at a controlled rate so as to limit the impact on public safety and on aquatic habitat in the impoundment and downstream of the dam.
- D. **Flow Management during Impoundment Refill.** During refilling of the project impoundment after flashboard replacement, an approved dam maintenance operation or an emergency drawdown, the applicant shall release at least 90 percent of instantaneous inflow below the project. While the impoundment is being refilled, bypass flow requirements shall be met at all times.



- E. **Flow Management Plan.** The applicant shall develop and file with the Department and the N.H. Department of Environmental Services a flow management plan detailing how the project will be operated to comply with the conservation flow and impoundment fluctuation limitations described above. The plan shall include information on how the project will be managed to control lag times and avoid related non-compliance with the conservation flow requirements. The plan shall be subject to Department review and approval after consultation with the N.H. Department of Environmental Services. The Department reserves the right of review and approval of any material changes made to the plan.
- F. **Monitoring Plan for Impoundment and Flow Management.** The applicant shall develop a plan for continuous monitoring and reporting of flow releases at the project (spillage and turbine discharge), impoundment levels, and inflows. The plan shall include procedures for reporting deviations from prescribed operating requirements 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 impoundment levels and provide such records on a regular basis as per specifications of the Department. The plan shall be developed in consultation with the Department, the N.H. Department of Environmental Services, and the U.S. Fish and Wildlife Service. The plan shall be subject to Department review and approval. The Department reserves the right of review and approval of any material changes made to the plan.
- G. **Dissolved Oxygen Sampling Study.** When technically feasible based on critical river flow and water temperature conditions, the licensee shall complete the dissolved oxygen study following the protocol agreed upon with the Department and the New Hampshire Department of Environmental Services. The study report shall be filed by the December following the season of sampling and shall include proposed remediation to address substandard conditions, if identified, and an implementation schedule, both subject to Department approval. The Department, after consultation with the N.H. Department of Environmental Services, may require additional sampling, if needed, or post-remediation sampling to determine effectiveness. The licensee shall notify the Department by October 1 of each year as to whether it was successful in completing the sampling effort.
- H. **Downstream Fish Passage.** The licensee shall implement permanent downstream fish passage within two years of a request by the Department, which request shall only occur after the N.H. Department of Fish and Game adopts a management plan emphasizing self-sustaining wild trout populations and provides the Department with a plan for reducing or eliminating stocking and/or harvest in the towns of Stewartstown, Colebrook, and Columbia after implementation of passage. Any request shall be made based on a written evaluation by the Vermont Department of

Fish and Wildlife of the need for downstream fish passage, said evaluation to be done in consultation with the N.H. Department of Environmental Services, the N.H. Department of Fish and Game, the U.S. Fish and Wildlife Service, the Connecticut River Watershed Council, Connecticut River Joint Commissions, Trout Unlimited, and PSNH. The design shall include provisions to prevent entrainment and impingement, and shall be functional at all normal impoundment levels (e.g., with and without flashboards). The Vermont Department of Fish and Wildlife evaluation shall address whether the facility should be operated year-round or for an alternate schedule, and the Department shall specify the operating schedule in its request. The Department may authorize or order an adjustment of the operating schedule based on experience or specific conditions during a given year, either at the PSNH's request, after consultation with the state fisheries resource departments, or pursuant to a mutual request by the state fisheries resource departments. The applicant shall develop the design in consultation with the Department, the Vermont Department of Fish and Wildlife, the N.H. Department of Fish and Game, and the U.S. Fish and Wildlife Service, and it shall be subject to Department approval prior to implementation.

The design for any trashrack replacement is subject to prior approval by the Department, after consultation with the Vermont Department of Fish and Wildlife, the N.H. Department of Environmental Services, the N.H. Department of Fish and Game, and the U.S. Fish and Wildlife Service.

- I. **Upstream Fish Passage.** Within two years of a request by the Department, the licensee shall institute upstream fish passage, subject to plan approval by the Department. Said request shall only occur after the N.H. Department of Fish and Game adopts a management plan emphasizing self-sustaining wild trout populations and provides the Department with a plan for reducing or eliminating stocking and/or harvest in the towns of Stewartstown, Colebrook, and Columbia after implementation of passage. Any request shall be made based on a written evaluation by the Vermont Department of Fish and Wildlife of the need for upstream fish passage, said evaluation to be done in consultation with the N.H. Department of Environmental Services, the N.H. Department of Fish and Game, the U.S. Fish and Wildlife Service, the Connecticut River Watershed Council, Connecticut River Joint Commissions, Trout Unlimited, and PSNH. The applicant shall consult the Department, the Vermont Department of Fish and Wildlife, the N.H. Department of Environmental Services, the N.H. Department of Fish and Game, and the U.S. Fish and Wildlife Service during plan development. The plan shall include an erosion control and water management plan designed to assure compliance with water quality standards during construction. The facility shall be operated from April 1 through June 30 and September 1 through December 15. The Department may authorize or order an

adjustment of the operating schedule based on experience or specific conditions during a given year, either at the PSNH's request, after consultation with the state fisheries resource departments, or pursuant to a mutual request by the state fisheries resource departments.

- J. **Passage Effectiveness Study.** Upon a request by the Vermont Agency of Natural Resources, the applicant shall complete a passage effectiveness study, or studies, based on a study plan(s) and schedule(s) approved by the Department after consultation with the U.S. Fish and Wildlife Service, the Vermont Department of Fish and Wildlife, the N.H. Department of Environmental Services, and the N.H. Department of Fish and Game. Any study shall be limited to monitoring utilization of the fishway(s) during applicable operating periods and shall not include studies of fish behavior and movement. The results of such effectiveness studies may serve as the basis for the Department to require modifications of any facilities required under conditions H and I above.
- K. **Turbine Rating Curves.** The applicant shall provide the Department with a copy of the turbine rating curves, accurately depicting the flow/production relationship, for the record within one year of the effective date of the license.
- L. **Debris Disposal Plan.** 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 shall be subject to Department review and approval. The Department reserves the right of review and approval of any material changes made to the plan at any time.
- M. **Maintenance and Repair Work.** Any proposals for project maintenance or repair work, including drawdowns lower than six inches below the fixed dam crest to facilitate repair/maintenance 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 an existing use or a beneficial value or use of the waters. The applicant shall file any proposals concurrently with the N.H. Department of Environmental Services to facilitate the Department's consultation with the N.H. Department of Environmental Services.
- N. **Public Access.** The applicant shall allow public access to the project lands for utilization of public resources, subject to reasonable safety and liability limitations. Such access should be prominently and permanently posted so that its availability is made known to the public. Any proposed limitations of access to the waters to be imposed by the applicant shall first be subject to written approval by either the Department or the N.H. Department of Environmental Services, depending on which bank of the river is involved. In cases where an immediate threat to public safety

exists, access may be restricted without prior approval; the applicant shall so notify the appropriate department and shall file a request for approval, if the restriction is to be permanent or long term, within 14 days of the restriction of access.

- O. **Riparian Zone Management Plan.** The applicant shall develop, and file for Department approval within six months of the effective date of the license, a riparian zone management plan that establishes and maintains an undisturbed, naturally vegetated riparian zone along the river. The applicant shall prepare the plan in consultation with the Department, the N.H. Department of Environmental Services, the Connecticut River Watershed Council, the towns of Canaan and Stewartstown, Connecticut River Joint Commissions, Trout Unlimited, and either or both of the state highway agencies, if interested. Documentation of consultation will be included in the plan and a specific explanation of how the comments have been addressed. The applicant shall provide a minimum of 30 days for the entities to comment and make recommendations before the plan is finalized.
- P. **Recreational Facilities.** Recreational facilities shall be constructed and maintained consistent with a recreation plan approved by the Department after consultation with the N.H. Department of Environmental Services. The plan shall include interpretive and directional signs. The plan shall be filed with the Department within one year of the effective date of the license and shall include an implementation schedule. Where appropriate, the recreation plan shall include details on erosion control. The applicant shall prepare the plan in consultation with the Department, the N.H. Department of Environmental Services, the Connecticut River Watershed Council, the towns of Canaan and Stewartstown, the Connecticut River Joint Commissions, and Trout Unlimited. The plan shall be updated at the end of each subsequent five-year period. Modifications to the recreation plan shall also be subject to Department approval over the term of the license. If the applicant determines that the plan does not need to be updated, a statement stating such shall be filed with the two departments.
- Q. **Boat Put-in at Vermont Route 114 Bridge.** The applicant shall evaluate the feasibility of including the existing boat access at the Vermont Route 114 bridge within the project boundary and report its findings, and a schedule if found feasible, to the Department within one year of the effective date of the license.
- R. **Erosion Prevention and Sediment Control.** Upon a written request by the Department or the N.H. Department of Environmental Services, the applicant shall design and implement erosion prevention and sediment control measures as necessary to address erosion occurring as a result of project operation or use of the project lands for recreation. Any work that exceeds minor maintenance shall be subject to prior approval by the Department, which shall consult with the N.H. Department of Environmental Services where appropriate.

The applicant shall collect data on shoreline erosion during the first and fifth summers following the effective date of the license and following any flood event exceeding a flow of 5,000 cfs. The scope and type of data collected shall be consistent with the recommendations in Shoreline Erosion Study for the Canaan Hydroelectric Project, October 2006. The data shall be compared to the reference data collected for that study report to determine where active erosion is occurring, how that may affect water quality, and what, if any, risk the erosion presents to project works and roadways and other public infrastructure. A report shall be filed with the Department by the first December 1 following the fifth summer. The report shall provide the comparative evaluation, impact/risk assessment, a remediation proposal based on the assessment, and recommendations on subsequent monitoring. After consultation with the N.H. Department of Environmental Services, the Department may require continued monitoring and/or remediation.

- S. **Compliance Inspection by Department.** The applicant shall allow the Department and N.H. Department of Environmental Services to inspect the project area at any time to monitor compliance with certification conditions.
- T. **Posting of Certification.** A copy of this certification shall be prominently posted within the project powerhouse.
- U. **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 after consultation with the N.H. Department of Environmental Services.
- V. **Reopening of License.** The Department may request, at anytime, that FERC reopen the license to consider modifications to the license as necessary to assure compliance with Vermont and/or New Hampshire Water Quality Standards.
- W. **Continuing Jurisdiction.** The Department reserves the right to add and alter the terms and conditions of this certification, when authorized by law and as appropriate to carry out its responsibilities with respect to water quality during the life of the project.

Document Content(s)

P-7528-009.DOC.....1-45