

99 FERC ¶ 62, 025
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

USGen New England, Inc.

Project No. 2077-016 - NH/VT

ORDER ISSUING NEW LICENSE
(MAJOR PROJECT)

(April 8, 2002)

USGen New England, Inc. (USGenNE) has filed an application for a new license pursuant to Sections 15 and 4(e) of the Federal Power Act (FPA)¹ to continue to operate and maintain the existing 291.36-megawatt (MW) Fifteen Mile Falls Hydroelectric Project. The project consists of three developments located on the Connecticut River, a navigable waterway of the United States, near the Town of Littleton in Grafton County, New Hampshire, and Caledonia County, Vermont. There are no federal lands within the project boundary. USGenNE proposes no new capacity.

BACKGROUND

The original license for the Fifteen Mile Falls Project was issued in 1952.² The Commission approved the transfer of the license from New England Power Company (NEP) to USGenNE on February 27, 1998,³ and the transfer became effective on

¹ 16 U.S.C. §§808 and 797(e).

² 11 F.P.C. 751 (1952).

³ 82 FERC ¶ 62,138 (1998).

November 20, 1998.⁴ The license expired on July 31, 2001, and since that time project operations have continued under an annual license.⁵

USGenNE filed its relicense application on July 29, 1999. USGenNE included with its application an applicant-prepared environmental assessment (APEA),⁶ pursuant to Section 2403(b) of the Energy Policy Act of 1992,⁷ which allows an applicant to file a draft EA, and Section 4.34(i) of the Commission's regulations,⁸ which provides for an alternative licensing process (ALP). With its new license application and APEA, USGenNE also filed a Settlement Agreement (Agreement)⁹ that addresses issues pertaining to project operations, reservoir levels, minimum flows, fish and wildlife protection and enhancement measures, and land protection.

The Agreement was reached between USGenNE, the State of New Hampshire, the State of Vermont, the U.S. Fish and Wildlife Service (FWS), the U.S. Environmental Protection Agency (EPA), the National Park Service, Appalachian Mountain Club, the Connecticut River Joint Commission, Connecticut River Watershed Council, Conservation Law Foundation, New Hampshire Rivers Council, New Hampshire Council of Trout Unlimited, and the Northeast Chapter of Vermont Trout Unlimited (jointly, Appalachian). The Agreement sets forth proposed changes to operational modes and minimum flow releases for the project. In addition, the Agreement contains proposals for implementing water management protection, mitigation, and enhancement measures; establishing an Upper Connecticut River Mitigation and Enhancement Fund; and

⁴The transfer became effective once NEP and USGenNE completed the sale of the project assets.

⁵See Section 15(a)(1) of the FPA. 16 U.S.C. § 808(a)(1).

⁶The Commission's regulations require that relicense applications include an Exhibit E (environmental report). The APEA is a substitute for the Exhibit E. See 18 C.F.R. §§ 4.51(f) and 16.8(f).

⁷Energy Policy Act of 1992, Pub. L. No. 102-486.

⁸18 C.F.R. § 4.34(i).

⁹The Agreement was executed on August 6, 1997, and was included as Appendix A in volume 1 of the APEA.

preparing various management, mitigation, and enhancement plans to benefit environmental and cultural resources.

As a result of the ALP, on July 26, 2000, USGenNE and certain stakeholders signed a Mercury Settlement providing for the funding of studies, plans, and mitigation measures for mercury reduction efforts designed to address bio-accumulation in the project area.¹⁰ The Agreement and Mercury Settlement are described below.

Notice of USGenNE's application for license and APEA was published on September 29, 1999. Timely motions to intervene were filed by the U.S. Department of the Interior (Interior), Vermont Agency of Natural Resources (VANR), Appalachian, New Hampshire's Coldwater Fisheries Coalition, Inc. (Coalition),¹¹ the Town of Monroe, New Hampshire, the Town of Barnet, Vermont, and John Moody.¹² None of the intervenors are opposed to issuance of a new license. On May 31, 2000, Dodge Falls Associates, Limited Partnership (Dodge Falls) filed a late motion to intervene, which was granted on June 19, 2000. Dodge Falls also filed comments on October 10, 2000, protesting that the proposed project would cause energy losses at its downstream exempted project. Dodge Falls' concerns are addressed below.

In the same public notice of September 29, 1999, the Commission's staff indicated that the license application was ready for environmental analysis and solicited comments, recommendations, and final terms and conditions. The Waterford Springs Corporation, Interior, EPA, VANR, Appalachian, the Town of Monroe, and the New Hampshire Department of Fish and Game (NHFG) filed comments in response to the notice.

On November 16, 2001, the Commission's staff issued for comment an environmental assessment (EA) for the Fifteen Mile Falls Project. The EA was based on the APEA and the staff's independent analysis. FWS, the New Hampshire Department of

¹⁰USGenNE filed the Mercury Settlement with the Commission on December 14, 2001, as an attachment to its comments on the draft EA prepared by the Commission's staff for the Fifteen Mile Falls Project.

¹¹The Coalition is comprised of conservation and sporting organizations representing individuals who use the upper Connecticut River and its watershed for various recreational activities.

¹²The motions were timely and unopposed, and therefore automatically granted, pursuant to Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c)(1).

Environmental Services, VANR, the EPA, Appalachian, Dodge Falls, and USGenNE filed comments on the EA. Several of the commentors recommended that the Commission accept the Agreement in its entirety, as the preferred alternative. The Commission's staff considered these and other comments in preparing the final EA (FEA). The FEA recommends adopting most of the provisions of the Agreement and issuing a new license as conditioned in this order. The motions to intervene, protest, and comments have been considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

The Fifteen Mile Falls Project, owned and operated by USGenNE, is an existing, licensed hydroelectric project spanning a 26-mile reach of the Connecticut River, including three reservoirs and about a 1.5-mile riverine reach between the Comerford and McIndoes reservoirs.

The Moore development is located at River Mile (RM) 283 and consists of: (1) an 11-mile-long reservoir with a surface area of 3,490 acres; (2) a 2,920-foot-long earth and concrete gravity dam; (4) four 296-foot-long penstocks; and (5) a powerhouse with four Francis type turbine-generator units, with a total rated capacity of 140.4 MW.

The Comerford development is located at RM 275 and consists of: (1) a 1,093 acre-reservoir; (2) a 2,253-foot-long, 170-foot-high earth and concrete gravity dam; (4) four 150-foot-long steel penstocks; and (5) a powerhouse with four Francis type turbine-generator units with a rated capacity of 140.4 MW.

The McIndoes development is located at RM 268 and consists of: (1) a 5-mile-long, 543-acre reservoir; (2) a 730-foot-long concrete gravity dam; and (4) a powerhouse with four turbine-generator units with a total capacity of 10,560 kW. A more detailed description of the project can be found in ordering paragraph (B)(2).

ALTERNATIVE LICENSING PROCESS AND THE SETTLEMENT AGREEMENT

In October 1995, the former licensee, NEP, initiated discussions with interested parties to develop a process for participating in the relicensing of this project. There evolved a Collaborative Team consisting of representatives from federal and state agencies, nongovernmental organizations (NGOs), and NEP.

On March 9, 1998, pursuant to Section 4.34(j),¹³ NEP requested to use the Commission's ALP for submitting its application for a new license. On April 22, 1998, NEP was granted approval to use the ALP in this proceeding. Thereafter, the relicense application and APEA were prepared with the involvement of the Collaborative Team, and the Collaborative Team pursued a settlement of the issues in the proceeding, which culminated in the Agreement that was signed by the licensee and twelve other entities, and filed with the relicense application and APEA on July 29, 1999.

The Agreement addresses the signatories' various concerns related to the protection and enhancement of water quality, fisheries, wildlife habitat, threatened and endangered species, cultural resources, recreation and aesthetic resources, preservation of undeveloped lands and tax base, public safety, and maintenance of the energy and system reliability benefits of the project.

Section I of the Agreement provides a description of the Fifteen Mile Falls Project, the project area, and the value of the project to the region, including environmental and economic benefits.

Section II of the Agreement states that USGenNE agrees to implement the various obligations and requirements of the Agreement, and that the stakeholders (resource agencies and citizens' groups) agree to support a new license for the project for a term of 40 years.

Section III of the Agreement sets forth water management protection, mitigation, and enhancement measures, including minimum flow releases and related conditions for the Moore, Comerford, and McIndoes developments.

Section IV of the Agreement provides for an Upper Connecticut River Mitigation and Enhancement Fund (Fund) to be established and funded annually by the licensee, in the amount of the greater of \$100,000, or 10 percent of the gross revenues of the project over a base amount. The Fund would be used to finance river restoration work; the establishment of conservation easements on project and non-project lands; riverine shoreline protection; restoration, protection, and enhancement of wetlands; and mitigation of tax revenue impacts in communities where the proposed conservation easement lands are located. The Fund would not be used to carry out the various obligations set forth in the other provisions of the Agreement.

¹³18 C.F.R. § 4.34(j)(1998).

Section V of the Agreement requires USGenNE to take the necessary steps to implement and donate the conservation easements on 4,000 acres of project lands and on 4,200 acres of non-project lands. Section V also describes the purpose of the easements: to protect the scenic, forestry, and natural resources values of the lands.

Pursuant to Section VI of the Agreement, USGenNE agrees to conduct studies on water quality and develop a Fisheries Management Plan, a Wildlife and Forest Management Plan, a Rare and Unusual Plant/Plant Community Management Plan, a Threatened and Endangered Species Management Plan, a Recreational Facilities and Management Plan, and a Cultural Resources Management Plan. USGenNE also agrees to provide downstream fish passage at the McIndoes development within two years of project licensing, and upstream fish passage at the McIndoes development when 20 Atlantic salmon migrating upstream reach the downstream Ryegate Dam (Dodge Falls Project No. 8011) for two consecutive years.

Under Section VII of the Agreement, the parties deem that, in the event the Commission changes, conditions, modifies, or supplements any provision of the Agreement in its relicensing order, the Agreement shall be considered modified to conform to the Commission's order, unless any party to the Agreement provides notice of its withdrawal to the other parties within 30 days of the Commission's action.

In the FEA, the Commission's staff evaluated the measures proposed in the Agreement and concluded that they would protect and enhance water quality, fishery, recreational, cultural, and other resources. These measures are described in greater detail in the comprehensive development analysis below.

USGenNE and certain stakeholders also signed a second, more limited, Mercury Settlement on July 26, 2000, to address mercury bio-accumulation in the project area. Pursuant to the Mercury Settlement, USGenNE agrees to fund up to \$500,000 (in 1997 dollars, as adjusted for inflation) for studies, plans, and mitigation measures for mercury reduction efforts in the States of New Hampshire and/or Vermont.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA),¹⁴ the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency either has issued a water quality certification (WQC) for the project or has waived

¹⁴ 33 U.S.C. §1341 (a)(1).

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 state certification shall become a condition on any federal license or permit that is issued,¹⁵ and only a reviewing court may revise or delete those conditions.¹⁶

The Connecticut River forms the boundary between the states of Vermont and New Hampshire and thus, the project has identifiable discharges in both states. Therefore, both states are empowered by Section 401(a)(1) of the CWA to issue water quality certification. The states of Vermont and New Hampshire agreed to a coordinated approach concerning compliance with their respective state water quality standards. Specifically, New Hampshire would issue a single water quality certificate for the project that would satisfy the interests of Vermont and be consistent with the Agreement.

On June 2, 2000, the licensee applied to the New Hampshire Department of Environmental Services (NHDES) for water quality certification for the Fifteen Mile Falls Project. On April 16, 2001, the NHDES issued a 401 water quality certificate for the project. On July 13, 2001, the Vermont Department of Environmental Conservation filed with the Commission its affirmation of the water quality certificate issued by NHDES for the project.

COASTAL ZONE MANAGEMENT PROGRAM

Under Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),¹⁷ the Commission cannot issue a license for a hydropower 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 Coastal Zone Management program.

The Fifteen Mile Falls Project is not located in a state-designated coastal zone management area and therefore, is not subject to the New Hampshire coastal zone management program review. Accordingly, our assessment is that no coastal zone consistency certification is needed for this project.

SECTION 18 FISHWAY PRESCRIPTIONS

¹⁵ 33 U.S.C. §1341(d).

¹⁶ See *American Rivers v. FERC*, 129 F.3d 99 (D.C. Cir. 1997).

¹⁷ 16 U.S.C. §1456(c)(3)(A).

Section 18 of the FPA¹⁸ states that the Commission shall require a licensee to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. Under Section 18, Interior filed with the Commission, by letter dated September 27, 2000, a request that the Commission reserve its authority to require such fishways as Interior may prescribe in the future, including measures to evaluate the need for fishways, and to determine, ensure, or improve the effectiveness of such fishways. The Commission recognizes that future fish passage needs and management objectives cannot always be determined at the time of project licensing. Under these circumstances, and upon receiving a specific request from Interior, the Commission's practice has been to include a license article that reserves the Secretary of the Interior's and the Secretary of Commerce's authority, as appropriate, to prescribe fishways.¹⁹ Therefore, Article 408 reserves Interior's authority to prescribe fishways.

HISTORIC PROPERTIES

On February 6, 2002, the New Hampshire State Historic Preservation Officer, the Vermont State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the Commission executed a Programmatic Agreement for managing historic properties that may be affected by relicensing of the Fifteen Mile Falls Project. This served to satisfy the Commission's responsibilities under Section 106 of the National Historic Preservation Act.²⁰ USGenNE, and other interested parties, signed the Programmatic Agreement as a concurring party.

THREATENED AND ENDANGERED SPECIES

Section 7(a) of the Endangered Species Act of 1973 (ESA)²¹ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally-listed threatened and endangered species, or result in the destruction or adverse modification of their critical habitat. In the EA, staff concluded that the Fifteen Mile

¹⁸ 16 U.S.C. § 1536(a).

¹⁹ Lynchburg Hydro Associates, 39 FERC ¶61,079 (1987).

²⁰ 16 U.S.C. § 470s.

²¹ 16 U.S.C. § 1536(a).

Falls Project, with the inclusion of staff recommended measures in this license, is not likely to adversely affect the federally-listed bald eagle (*Haliaeetus leucocephalus*), the dwarf wedge mussel (*Alasmidonta heterodon*), and their habitat. The FWS by letter dated January 8, 2002, concurred. Therefore, no further Section 7 consultation is required.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES AND SECTION 10(j) PROCESS

Section 10(j)(1) of the FPA²² requires the Commission, when issuing a license, to include license conditions for the protection, mitigation, and enhancement of fish and wildlife resources based upon the recommendations of the Federal and state fish and wildlife agencies, submitted pursuant to the Fish and Wildlife Coordination Act,²³ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project, unless it believes that the recommendations are inconsistent with Part I of the FPA or other applicable laws. In those instances where the Commission believes an inconsistency exists, the agencies and the Commission will try to resolve the inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

Interior on September 27, 2000, VANR on September 29, 2000, and NHFG on November 6, 2000, filed recommendations under FPA Section 10(j) for the project. Each agency's recommendations are discussed below.

1. U. S. Department of the Interior

Interior filed 16 recommendations. Thirteen of Interior's recommendations are within the scope of Section 10(j) and the license includes conditions consistent with these recommendations.

Interior's recommendations that the licensee 1) conduct a study of eel passage at project dams to determine when passage facilities are needed, 2) complete an assessment of Atlantic salmon smolt migration through the Moore and Comerford impoundments, and 3) contribute to an enhancement fund, are outside the scope of Section 10(j) because they are not specific measures for the protection of fish and wildlife. Staff considered

²² 16 U.S.C. §803(j)(1).

²³ 16 U.S.C §661 et seq.

under Section 10(a) and adopted Interior's recommendations that the licensee 1) study American eels at project dams and 2) contribute to a mitigation and enhancement fund, and the license includes conditions consistent with the recommendations, subject to the clarifications stated below (See "enhancement fund"). Interior's recommendation requiring the licensee to complete an assessment of Atlantic salmon smolt migration through the project was not adopted.²⁴

2. Vermont Agency of Natural Resources

VANR filed 24 recommendations for terms and conditions that are similar to Interior's recommendations and conditions in the WQC. VANR's recommendations were considered and adopted except that staff did not adopt the recommendation that an assessment of Atlantic salmon smolt migration through the project be conducted, for the same reasons discussed under Interior's recommendations above. The license includes conditions consistent with VANR's recommendations with that exception. Additionally, VANR makes recommendations related to agency consultation for project maintenance and repair, debris disposal, compliance inspection, and license reopener. These VANR recommendations are addressed in the license conditions and routinely dealt with through the standard L-Form articles incorporated into this license.²⁵

3. New Hampshire Fish and Game

The NHFG filed late two recommendations on November 6, 2000. NHFG recommends that 1) all the provisions of the Agreement be included in any new license issued for the project and 2) the Commission preserve NHFG's right to petition the Commission for changes to the license in order to assure the protection to fish and wildlife. NHFG's recommendations are outside the scope of Section 10(j), and staff does not adopt them under Section 10(a). However, NHFG's first recommendation (the Agreement contains provisions similar to Interior's recommendations, e.g., enhancement

²⁴ USGenNE completed smolt studies in 1998 and 2000. Staff concluded in the draft EA that further smolt passage studies were not necessary, since the assessments indicated that smolts do migrate through the impoundment and can pass by way of spill. On December 14, 2001, Interior commented on the draft EA and concurred with staff's conclusion.

²⁵ Form L-3, "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States", Articles 4, 15, 17, and 20.

fund, smolt migration study, conservation easements) is addressed above in the discussion of Interior's recommendations, and also below. NHFG's second recommendation is addressed through the standard L-Form articles incorporated into this license.

Enhancement Fund

In the draft EA staff did not recommend adopting Interior's recommendation that the licensee contribute to an Upper Connecticut River Mitigation and Enhancement Fund (Fund) to provide for various mitigation and enhancement activities. Although potential activities undertaken by the Fund would benefit project-related concerns, such as aquatic, water quality, terrestrial, cultural, and recreational resources, and the establishment of conservation easements would protect and enhance the aesthetics, recreation, cultural, and natural resources occurring on both project (4,000 acres) and non-project lands (4,200 acres), some measures would have no nexus between the Fund and project operations, or would be beyond the Commission's jurisdiction (such as mitigation of tax revenue impacts).

Several of the signatories to the Agreement object to the exclusion of the Fund as a license requirement, arguing that the Fund is a critical component of the Agreement. They also object to staff's recommendation to not require the establishment of conservation easements on lands outside of the project boundary. For licensed projects, the Commission's authority extends only over the project lands and property within the project boundary, and pursuant to its responsibilities under the FPA, the Commission enforces license terms that pertain to the licensee's construction, operation, and maintenance of the licensed project, including environmental mitigation and enhancement measures. The license order, therefore, adopts those recommendations and provisions of the Agreement that are within the Commission's jurisdiction. However, USGenNE, through the ALP, has agreed to implement the measures stipulated in the Agreement. Although these measures impose obligations for the licensee under the Agreement that do not come under the Commission's authority, they do not conflict with the license articles adopted for the project or interfere with the Commission's statutory authority.

As previously stated, potential activities undertaken by the Fund would benefit project-related concerns. One of the signatories, VANR, suggests that the Commission accept the elements of the Fund that are within the Commission's jurisdiction and omit the elements that are outside the Commission's jurisdiction. In light of the significant project-related benefits of the Fund and the Commission's encouragement of settlements, this license includes Article 420, requiring establishment of the Fund and the licensee to contribute to the Fund, for the specific, project-related purposes only. Any Agreement

conditions that are not adopted may be enforced by the parties in a court of appropriate jurisdiction.

OTHER ISSUES

On October 10, 2000, Dodge Falls, an intervenor in the proceeding, filed comments and protest, stating that the Commission should consider the effects of a new license for the Fifteen Mile Falls Project on Dodge Falls' downstream Project No. 8011. On December 14, 2001, Dodge Falls made similar comments on the draft EA. Dodge Falls asserts that the new operating regime that is proposed pursuant to the Agreement could cause energy losses at its exempted Project No. 8011, located approximately 4 miles downstream from the Fifteen Mile Falls Project. Dodge Falls estimates that its project could incur a loss of up to 7 percent of its average annual generation. Dodge Falls requests that the potential effects of the proposed operating regime be taken into consideration. Staff has considered Dodge Falls comments in the FEA.

The FEA analyzed the potential effects of the Fifteen Mile Falls Project on the exempted project and found that, although the proposed operating regime would have a slight adverse impact on generation at the Dodge Falls Project, it would also benefit the exempted project. Using Dodge Falls' estimate of a 7 percent energy loss, staff calculated that the exempted project could lose up to 1,820 megawatt hours annually. Staff also determined that the exempted project would receive headwater and energy generation benefits from the Fifteen Mile Falls Project and would also benefit from the requirement under the Agreement that flows above 5,800 cfs be restricted to no more than 7 percent of the time between June 1 and February 28 of each year.

Dodge Falls argues that the license applicant should not be allowed to adversely affect the exempted project, without obtaining its consent or compensating it for its lost generation. Section 6, which prohibits alterations of license without the licensee's consent, does not apply to exemptions.²⁶ However, pursuant to Section 10(c) of the FPA,²⁷ the licensee will be liable for any reduction in generation or other damages that the licensed project causes to property at the Dodge Falls Project No. 8011.²⁸

²⁶See Fieldcrest Mills, Inc., 37 FERC ¶ 61,264 (1986).

²⁷16 U.S.C. § 803(c).

²⁸It is the Commission's practice to leave the determination of any such liability and assessments of Section 10(c) damages to the appropriate state forum.

COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA²⁹ requires the Commission to consider the extent to which a hydroelectric project is consistent with federal and state comprehensive plans for improving, developing, or conserving waterways affected by the project. Under Section 10(a)(2), federal and state agencies filed a total of 38 comprehensive plans that address various resources in New Hampshire and Vermont. Of these, staff identified and reviewed 18 plans relevant to the Fifteen Mile Falls Project.³⁰ No inconsistencies were found.

See South Carolina Public Service Authority v. FERC, 850 F.2d 788 (D.C. Cir. 1988); and Ohio Power Co., 71 FERC ¶ 61,092 at p. 61,312 n. 30 (1995).

²⁹ 16 U.S.C. § 803(a)(2)(A).

³⁰ **New Hampshire:** (1) New Hampshire Office of State Planning. 1977. Wild, scenic and recreational rivers for New Hampshire. Concord, New Hampshire. June 1977; (2) New Hampshire Office of State Planning. 1989. New Hampshire wetlands priority conservation plan. Concord, New Hampshire; (3) New Hampshire Office of State Planning. 1989. New Hampshire outdoors, 1988-1993: state comprehensive outdoor recreation plan. Concord, New Hampshire; (4) New Hampshire Office of State Planning. 1991. Public access plan for New Hampshire's lakes, ponds, and rivers. Concord, New Hampshire. November 1991; (5) Policy Committee for Fisheries Management of the Connecticut River. 1982. A strategic plan for the restoration of Atlantic salmon to the Connecticut River Basin. Laconia, New Hampshire. September 1982; (6) State of New Hampshire. 1990. New Hampshire rivers management and protection program. Concord, New Hampshire. July 1, 1990; (7) State of New Hampshire rivers management and protection program. Concord, New Hampshire; (8) State of New Hampshire. 1992. Act designating segments of the Connecticut River for New Hampshire's rivers management and protection program. Concord, New Hampshire. May 15, 1992; and (9) Connecticut River Joint Commissions. Connecticut River Corridor Management Plan. May 1997.

Vermont: (1) Vermont Agency of Environmental Conservation. 1983. Vermont state comprehensive outdoor recreation plan, 1983-1988. Montpelier, Vermont. June 1983; (2) Vermont Agency of Environmental Conservation. 1986. Vermont Rivers Study. Waterbury, Vermont; (3) Vermont Agency of Natural Resources. Department of Environmental Conservation. 1988. Hydropower in

APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10 and 15 of the FPA, the staff has evaluated USGenNE's record as a licensee for these areas: (1) conservation efforts; (2) ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission line improvements; (7) project modifications; (8) compliance history; and (9) actions affecting the public. I accept the staff's finding in each of these areas.

1. Consumption Efficiency Improvement Programs [Section 10(a)(2)(C)]

USGenNE is not an electric utility and has no end-use customers for the power generated by the Fifteen Mile Falls Project. USGenNE sells all of the power from the project to the wholesale electric power market. Because the power market is highly competitive, USGenNE has sufficient incentives to maintain efficiencies and minimize waste.

2. The Plans and Abilities of the Applicant to Comply with the Articles, Terms, and Conditions of Any License Issued to It and Other Applicable Provisions of Part I of the FPA [Section 15(a)(2)(A)]

Staff has reviewed USGenNE's license application to evaluate its ability to comply with the articles, terms, and conditions of a new license, and with other provisions of the FPA. USGenNE and its predecessors have operated this and other projects for over 50

Vermont: an assessment of environmental problems and opportunities. Waterbury, Vermont. May 1988; (4) Vermont Agency of Natural Resources. Department of Forests, Parks and Recreation. 1988. Vermont recreation plan. Waterbury, Vermont; and, (5) Vermont Agency of Natural Resources. Department of Forests, Parks and Recreation. Wetlands Steering Committee. 1988. Wetlands component of the 1988 Vermont recreation plan. Waterbury, Vermont. July 1988.

Federal: (1) U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. May 1986; (2) U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, DC; (3) U.S. Fish and Wildlife Service. 1989. Final environmental impact statement - restoration of Atlantic Salmon to New England Rivers. Newton Corner, Massachusetts. May 1989; and, (4) National Park Service. 1982. The nationwide rivers inventory. Washington, DC. January 1982.

years and USGenNE has a commitment to do the same over the period of a new license. USGenNE has complied with the terms and conditions of the existing license, and has made timely filings with the Commission. USGenNE has ample financial and personnel resources available to meet its obligations under any new license issued. Staff concludes that USGenNE has or can acquire the resources and expertise necessary to carry out its plans and comply with all articles, terms and conditions of a new license.

3. The Plans of the Applicant to Manage, Operate, and Maintain the Project Safely [Section 15(a)(2)(B)]

Staff has reviewed the safety of the project for purposes of relicensing. USGenNE maintains an emergency action plan, which is updated annually. USGenNE's public warning devices include signage warning of thin ice hazards, etc., boat barriers, and buoys near spillways. USGenNE's Hydro Division has an outstanding history of a work-safe environment, and it is committed to maintaining its facilities in a manner that allows the public to safely enjoy recreational activities. The Fifteen Mile Falls Project has only had one public safety incident and that incident was not project related. Staff concludes that the project works are safe and that USGenNE's plans to manage, operate, and maintain the project safely are adequate for future operations and would pose no threat to public safety if operated according to the regulations governing hydroelectric licenses.

4. The Plans and Abilities of the Applicant to Operate and Maintain the Project in a Manner Most Likely to Provide Efficient and Reliable Electric Service [Section 15(a)(2)(C)]

USGenNE has operated the Fifteen Mile Falls Project since its acquisition on September 1, 1998. Prior to that, the project had been under the same ownership since its construction. The majority of management and operations personnel of the prior owner have continued with USGenNE. The parent company of USGenNE owns and has operated one of the largest hydroelectric portfolios in the U.S. The Fifteen Mile Falls Project is operated as both storage and release and run-of-river, depending on need for power and available river flows, and the operation is coordinated, as needed, with upstream and downstream facilities. All power generated by the project will be sold into the wholesale electric market. The coordination and dispatch of the power will be controlled by the Independent System Operator (ISO) of the New England Power Pool based upon demand.

Staff concludes that USGenNE has operated and maintained the project in such a manner as to provide efficient and reliable electric service.

5. The Need of the Applicant Over the Short and Long Term for the Electricity Generated by the Project to Serve Its Customers [Section 15(a)(2)(D)]

USGenNE is a member of the New England Power Pool (NEPOOL) and the Fifteen Mile Falls Project is part of the NEPOOL interconnected power system for the New England region. NEPOOL, a voluntary organization of nearly 100 individual providers of electric services located throughout the six state New England region, accounts for essentially all of the region's electric power production. Since 1999 USGenNE has bid the output into a competitive electricity market under the supervision of the ISO New England. The use of project generated power is within the context of this new market.

Staff concludes that: (a) present and future use of the project's power; (b) the power's low cost; and (c) the project's displacement of nonrenewable fossil-fueled generation and contribution to a diversified generation mix, support a finding that the power from the Fifteen Mile Falls Project will help meet a need for power in the New England region for the short and long term.

6. The Impact of Receiving or Not Receiving the Project License on the Operation, Planning and Stability of Applicant's Transmission System [Section 15(a)(2)(E)]

The Fifteen Mile Falls Project facilities do not include a transmission system. Therefore, Section 15(a)(2)(E) is not applicable.

7. Whether the Plans of the Applicant Will be Achieved, to the Greatest Extent Possible, in a Cost Effective Manner [Section 15(a)(2)(F)]

USGenNE has no plans for making significant project changes, except for those periodically required to ensure project safety. Staff concludes that the plans of the applicant will be achieved, to the extent possible, in a cost effective manner.

8. Compliance History Pursuant to Section 15(a)(3)(A)

The staff has reviewed USGenNE's compliance with the terms and conditions of the existing license, and finds that USGenNE's and its predecessor's overall record of making timely filings and compliance with its license is satisfactory.

9. Actions Affecting the Public

USGenNE has worked to ensure that actions at the project do not have a negative impact on the public. USGenNE provides a visitor center for the project and access to numerous water and land based recreational opportunities.

COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, §§ 16 U.S.C. 797(e) and 803(a)(1), respectively, 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.

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, pursuant to Section 10(a)(1) of the FPA, 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.,³¹ the Commission employs an analysis that 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. In making its decision, the Commission considers the project power benefits both with the applicant's proposed measures and with the Commission's modifications and additions to the applicant's proposal.

The staff performed an economic analysis for the relicensing of the Fifteen Mile Falls Project. Based on current economic conditions, without future escalation or inflation, and if licensed for 30 years, the Fifteen Mile Falls Project, as USGenNE proposes including conditions in the Agreement, would produce about 627,000 megawatthours (MWh) of energy per year valued at 46.4 mills/kWh (NEPOOL average

³¹72 FERC ¶ 61,027 (1995).

annual clearing price), or about \$29,080,000 per year. USGenNE's costs for generating this power is 59.6 mills/kWh, or about \$37,390,000 per year. The project's total net benefit, with all mitigation and enhancement measures, would be about negative 13.2 mills/kWh.

However, in analyzing public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary benefits). These benefits include their value as 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.

Ancillary benefits are now mostly priced at rates that recover only the cost of providing the electric service at issue, which don't resemble the prices that would occur in competitive markets. As competitive markets for ancillary benefits begin to develop, the ability of hydropower projects to provide ancillary services to the system will increase the benefits of the projects.

Based on our independent review and evaluation of the Fifteen Mile Falls Project, the Agreement, recommendations of the resource agencies and other stakeholders, and no-action, as documented in the final EA, I have selected the proposed action with certain provisions of the Agreement, discussed above, and additional staff-recommended measures, as the preferred alternative.

I selected this alternative because: (1) issuance of a new license would provide a beneficial, dependable, and inexpensive source of electric energy; (2) the 627,000 MWh of electric energy generated at Fifteen Mile Falls from the renewable resource would continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution; and (3) the staff-recommended environmental protection, mitigation, and enhancement measures would protect or enhance water quality, fishery resources, terrestrial resources, land uses, improve public use of recreation facilities and access, and protect historic and archeological resources within the area affected by project operations.

The preferred alternative includes the following enhancement measures proposed by USGenNE, and additional measures proposed by staff:

§ Operate the Moore development as follows: 809 feet msl maximum reservoir operating limit; for spring spawning, achieve an elevation of at least 802 feet msl

with target elevation of 804 feet msl by May 21 of each year; for the period from May 21 through June 30, the reservoir would not be drawn more than 2 feet below any elevation previously attained in the same period; in the period from June 30 to May 21, reservoir operations are to follow historic patterns and ranges; and provide a minimum flow of 320 cfs or inflow year-round. (Arts. 401 & 403)

§ Operate the Comerford development as follows: 650 feet msl maximum reservoir operating limit; achieve an elevation of at least 645 feet msl, with a target elevation of 647 feet msl by May 21 for each year; for the period from May 21 through June 30 the reservoir would not be drawn more than 2 feet below any elevation previously attained in the same period; in the period from June 30 to May 21, reservoir operations are to follow historic patterns and ranges; and provide minimum flows of 818 cfs for the period June 1 through September 30, 1,145 cfs for the period October 1 through March 31, and 1,635 cfs for the period of April 1 through May 31. (Arts. 401 & 403)

§ Operate the McIndoes development as follows: 451 feet msl maximum reservoir operating limit; reservoir may be drawn down a maximum of 3.5 feet to a minimum operations elevation of 447.5 feet msl; reservoir may surcharge above 451.0 feet if inflow exceeds discharge capability of 30,600 cfs; provide minimum flows of 1,105 cfs or inflow for the period of June 1 through September 30, and 2,210 cfs or inflow for the period of October 1 through March 31; inflow during these periods is defined as the sum of the applicable Comerford minimum flow and the prorated Passumpsic gage. In addition, for spring spawning flow and incubation: provide 4,420 cfs or inflow for the period of April 1 through May 31. If, Moore and Comerford reservoirs are in danger of not filling, the Comerford minimum flow would be reduced to no less than 50 percent of flow at the Dalton Gage, McIndoes minimum flow would be the sum of prorated Passumpsic Gage flow plus no less than 50 percent of flow at the Dalton Gage. The spawning flow could be reduced to 2,210 cfs, if flows in excess of 50,000 cfs at Bellows Falls or in excess of 10,000 cfs at Wilder are expected. Finally, maximum flows would not exceed 5,800 cfs for more than 7 percent of the hours during the period from June 1 through February 28, but no restriction on flows would be required, if Moore and Comerford are both at their maximum operating limits or if stream flow (sum of the prorated flows at the Passumpsic Gage and Dalton gage) exceeds 8,000 cfs during the months of March, April and May. (Arts. 401 & 403)

§ Implement the Fisheries Mitigation Plan dated September 2000, which includes provisions for the following: (Art. 407)

- (1) Plan for the protection, enhancement, and management of fish populations in the project area.
- (2) Investigate tributary access for spawning fish.
- (3) Provide structural habitat enhancements for salmonids in the Moore and Comerford tailrace.

§ Reserve Interior's authority to prescribe fishways at the project. (Art. 408)

§ Provide downstream fish passage facilities at the project developments within 2 years of licensing, or within 2 years of notification by agencies. (Arts. 409 & 410)

§ Provide upstream fish passage at the McIndoes development when 20 Atlantic salmon migrate upstream and reach the Ryegate Dam for two consecutive years and the fishery agencies find the need for upstream passage is justified. The passage would consist of facilities located at McIndoes dam or the licensee's participation in a trap and truck facility construction and operation at East Ryegate dam. Also, if directed by the CRASC and the fisheries agencies, a fish trap would be installed at the base of the Comerford dam and a trap and truck operation would be implemented. (Arts. 411 & 412)

§ Initiate consultation on the issue of passage for American eels at the project dams upon a duly made finding by FWS, VANR, and NHFG that such passage is necessary. (Art. 414)

§ Develop, in consultation with NHDES, VTDEC, and FWS, a long-term plan for monitoring mercury in fish tissue at the Moore and Comerford reservoirs, with monitoring results reported to NHDES, VTDEC, and FWS by December 31 of each sampling year. The mercury monitoring plan shall incorporate measures contained in condition nos. 8 and 9 of the Section 401 WQC. (Art. 405)

§ Develop and implement a final Wildlife and Forest Management Plan. (Art. 415)

§ Develop and implement a Rare and Unusual Plant/Plant Community Management Plan. (Art. 417)

§ Develop and implement a final Management Plan for Threatened and Endangered Species. (Art. 416)

§ Develop and implement a final Recreation Plan, which includes at a minimum, the following measures: (Art. 418)

- (1) (a) provide a designated swimming area at Dodge Hill, Pine Island and Moore dam access areas; (b) create or improve the beach area at Dodge Hill and Pine Island access areas; (c) install new boat ramps at Gilman and Moore dam access areas; (d) lengthen the existing boat ramps at North Littleton and Dodge Hill access areas; (e) add picnic tables and grills at Gilman, Pattenville, Pine Island, Moore dam, and Pine Grove access areas; (f) establish a shoreline trail with park benches at the Moore development; (g) add portable toilets at Gilman, Pine Island and Moore dam access areas; (h) enlarge the parking areas at North Littleton, Pattenville, Pine Island, Moore dam, Waterford and Waterford Bridge access areas; (i) grade the parking areas at Dodge Hill, Waterford, and Comerford dam access areas; (j) improve the access road at Pattenville and Moore dam access areas; (k) improve traffic circulation at North Littleton, Pattenville, and Moore dam access sites; (l) establish two primitive camping areas within the Fifteen Mile Falls Project area; and (m) provide signage denoting facilities rules and regulations, hours of operation, and safety precautions.
- (2) provide the following safety measures: (a) install flow warning devices below the Moore, Comerford, and McIndoes dams; (b) install safety precaution signage in the tailrace areas; and (c) maintain the existing boater constraint barriers at the intake areas at all three developments.
- (3) soil erosion control measures to be used during construction/improvement of recreational facilities.
- (4) an implementation schedule.

§ Implement the provisions of a Programmatic Agreement, including a Cultural Resources Management Plan. (Art. 419)

§ Contribute to an Upper Connecticut River Mitigation and Enhancement Fund. (Art. 420)

Based on our independent analysis of the Fifteen Mile Falls Hydroelectric Project it is concluded that operation of the project by USGenNE with our staff recommended measures, would protect and enhance environmental conditions in the project area and the river basin, and would be a beneficial use of the resources.

LICENSE TERM

Section 15(e) of the FPA ³² specifies that any license issued shall be for a term which the Commission determines to be in the public interest, but the term may not be less than 30 years nor more than 50 years.

Generally, the Commission's policy is to establish 30-year terms for projects that propose no new construction, little or no re-development, power-generating expansion, or enhancement measures. The Commission establishes 40-year terms for projects that propose moderate redevelopment, new construction, new capacity, or enhancement measures; and 50-year terms for projects that propose extensive redevelopment, new construction, new capacity, or enhancement.

The license does not authorize construction of new capacity, or redevelopment of the Fifteen Mile Falls Project. The recreational and environmental enhancements authorized and mandated in this license entail costs to USGenNE that are moderate compared to the costs of substantial redevelopment or new construction. Accordingly, I conclude that issuance of a new license for a term of 40 years is appropriate.

SUMMARY OF FINDINGS

The final EA, which is attached to, and made a part of this license, contains background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment. The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license.

Based upon a review of the agency and public comments filed on the project, and the staff's independent analysis pursuant to Sections 4(e), 10(a)(1), and 10(a)(2) of the FPA, I conclude that issuing a license for the Fifteen Mile Falls Project, with the required environmental measures and other special license conditions, will be best adapted to the comprehensive development of the Connecticut River for beneficial public uses.

The Director orders:

³² 16 U.S.C. §808(e).

(A) This license is issued to USGen New England, Inc. (licensee), for a period of 40 years, effective the first day of the month in which this license is issued, to continue to operate and maintain the Fifteen Mile Falls Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

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

<u>Exhibit G</u>	<u>FERC No. 2077-</u>	<u>Showing</u>
G(1)-2	1017	McIndoes-Plant Project Map
G(1)-3	1018	McIndoes-Index Project Map
G(1)-3-1	1019	McIndoes-Project Map
G(1)-3-2	1020	McIndoes-Project Map
G(1)-3-3	1021	McIndoes-Project Map
G(2)-2	1022	Comerford-Plant Project Map
G(2)-3	1023	Comerford-Index Project Map
G(2)-3-1	1024	Comerford-Project Map
G(2)-3-2	1025	Comerford-Project Map
G(2)-3-3	1026	Comerford-Project Map
G(2)-3-4	1027	Comerford-Project Map
G(2)-3-5	1028	Comerford-Project Map
G(3)-3	1029	Moore-Index Project Map
G(3)-3-1	1030	Moore-Project Map
G(3)-3-2	1031	Moore-Project Map
G(3)-3-3	1032	Moore-Project Map
G(3)-3-4	1033	Moore-Project Map
G(3)-3-5	1034	Moore-Project Map
G(3)-3-6	1035	Moore-Project Map
G(3)-3-7	1036	Moore-Project Map

(2) Project works consisting of:

The Moore Development consisting of: (1) an 11-mile-long reservoir with a surface area of 3,490 acres and 223,722 acre-feet of gross storage at a normal maximum operating level of 809 feet msl; (2) an earth and concrete gravity dam with an overall length of 2,920 feet and a height of 178 feet; (3) a 373-foot-long concrete spillway with a 15-foot-wide by 20-foot-high sluice gate, four 50-foot bays of 17-foot-high stanchions, and three

bays of 36 foot-wide by 30-foot-high tainter gates; (4) four steel penstocks each 296 feet long; and (5) a powerhouse with four Francis type turbine-generator units. The turbines have a combined power rating of 225,600 horsepower (56,400 horsepower each) under a design head of 150 feet and a combined rated discharge of 13,300 cubic feet per second (cfs). Each generator is rated at 35,100 kilowatts (kW), yielding an overall rated capacity for the station of 140,400 kW. Maximum output at full load is 191,960 kW under a net head of 158 feet with a combined turbine discharge of 18,300 cfs.

The Comerford Development consisting of: (1) an 8-mile-long reservoir with a surface area of 1,093 acres and 32,270 acre-feet of gross storage at a normal maximum operating level of 650 feet msl; (2) an earth and concrete gravity dam with an overall length of 2,253 feet and a height of 170 feet; (3) an 850-foot-long concrete spillway with six 7-foot-wide by 9-foot-high sluice gates, four bays of 8-foot-high flashboards and seven 10-foot-high stanchion bays; (4) four steel penstocks each 150 feet long; and (5) a powerhouse with four Francis type turbine-generator units. The turbines have a combined power rating of 216,800 horsepower (54,200 horsepower each) under a design head of 180 feet and a combined rated discharge of 12,010 cfs. Each generator is rated at 35,100 kW, yielding an overall rated capacity for the station of 140,400 kW. Maximum output at full load is 163,960 kW under a net head of 174 feet with a combined turbine discharge of 13,300 cfs.

The McIndoes Development consisting of: (1) a 5-mile-long reservoir with a surface area of 543 acres and 5,988 acre-feet of gross storage at a normal maximum operating level of 454 feet msl; (2) a concrete gravity dam with an overall length of 730 feet and a height of 25 feet; (3) a 520-foot-long concrete spillway with a 12-foot-wide by 13-foot-high skimmer gate, three 24-foot-wide by 25-foot-high tainter gates, a 300-foot-long spillway flashboard section with 6-foot-high flashboards, and two 50-foot-wide by 18-foot-high stanchion bays; and (4) a powerhouse with four Kaplan type turbine-generator units. The turbines have a combined power rating of 15,200 horsepower (3,800 horsepower each) under a design head of 29 feet and a combined rated discharge of 5,800 cfs. Each generator is rated at 2,640 kW, yielding an overall rated capacity for the station of 10,560 kW. Maximum output at full load is 13,000 kW under a net head of 26 feet with a combined turbine discharge of 5,800 cfs.

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

Exhibit A, consisting of 7 pages filed on July 29, 1999:

Exhibit F: The following Exhibit F drawings filed on July 29, 1999:

<u>Exhibit F</u>	<u>FERC No. 2077-</u>	<u>Description</u>
F(1)-1	1001	McIndoes-General Layout of Plant
F(1)-2	1002	McIndoes-Elev. Looking Upstream
F(1)-3	1003	McIndoes-Details of Spillway
F(1)-4	1004	McIndoes-Details of Powerhouse
F(2)-1	1005	Comerford-General Layout of Plant
F(2)-2	1006	Comerford-Elev. Looking Upstream
F(2)-3	1007	Comerford-Powerhouse Plan
F(2)-4	1008	Comerford-Sections Dam, Intake, Powerhouse
F(2)-5	1009	Comerford-Details of Spillway
F(2)-6	1010	Comerford-East Embankment & Wall
F(3)-1	1011	Moore-General Layout of Plant
F(3)-2	1012	Moore-Elevation Looking Upstream
F(3)-3	1013	Moore-Cross Section - Intake and Powerhouse
F(3)-4	1014	Moore-General Layout of Plant
F(3)-5	1015	Moore-Details of Spillway
F(3)-6	1016	Moore-No. Embankment and Wall

(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, F, and G described above are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," and the following additional articles:

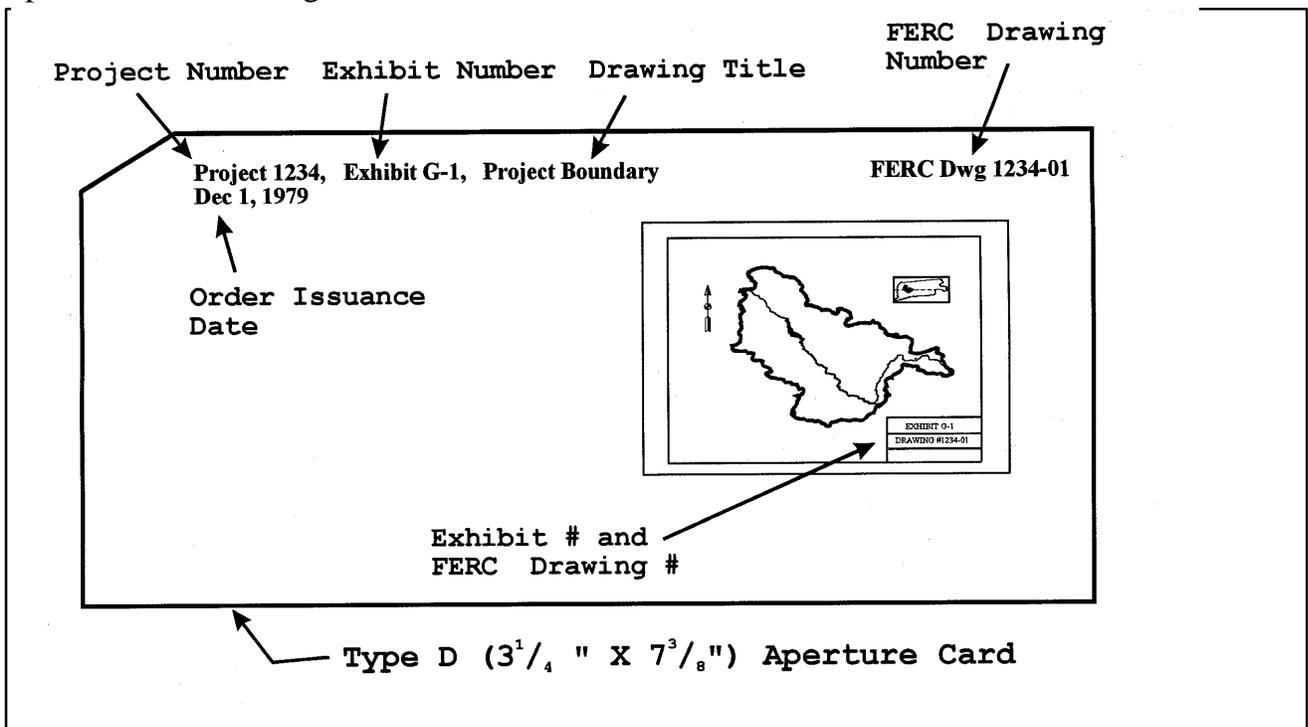
Article 201. The licensee shall pay the United States the following annual charges, effective as of the first day of the month in which this license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act, a reasonable amount as determined in accordance with

the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 291,360 kilowatts (kW). Under the regulations currently in effect, projects with an unauthorized installed capacity of less than or equal to 1,500 kW are not assessed an annual administrative charge.

Article 202. Within 90 days of the issuance date of the license, the licensee shall file three original sets of aperture cards of the approved exhibit drawings. The drawings must 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. The licensee shall submit one copy of Form FERC-587 with the aperture cards.

Prior to microfilming, the FERC Drawing Number (2077-1001 through 1036) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number must be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (e.g., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card. See Figure 1.



1. Sample Aperture Card Format

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set of aperture cards shall be filed with the Commission's New York Regional Office.

Article 203. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly included in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 401. The licensee shall operate the Fifteen Mile Falls Project according to the following conservation flow and reservoir management schedules for each project reservoir (as described in Section III, Water Management, of the Settlement Agreement, July 29, 1999), to protect fish and wildlife resources of the Connecticut River:

Moore Development

From January 1 to December 31 (year round), the licensee shall release from the Moore Development dam into the Connecticut River an instantaneous flow of 320 cubic feet per second (cfs), or inflow to the project reservoir, whichever is less, as measured in the tailrace.

The licensee shall operate the project so that the Moore Development reservoir does not exceed a maximum elevation of 809.0 feet mean sea level (msl) and a maximum annual drawdown to a level no lower than 769.0 feet msl. To enhance conditions for fish spawning in the spring, the licensee shall achieve a minimum reservoir elevation of 802.0 feet msl, with a target elevation of 804.0 feet msl, by May 21 each year. The licensee shall ensure that reservoir fluctuations from May 21 through June 30 shall not cause the reservoir to be drawn down more than 2.0 feet below the maximum elevation previously attained during this period.

Comerford Development

The licensee shall release from the Comerford Development dam into the Connecticut River the following instantaneous flows: 818 cfs from June 1 to September 30, 1,145 cfs from October 1 to March 31, and 1,635 cfs from April 1 to May 31, as measured in the tailrace. The licensee shall guarantee these minimum flows shall be released, even if it means releasing water from storage. Minimum flow releases from the Comerford dam between April 1 and May 31 may be reduced to 50 percent of the flow at the Dalton gage if the Moore and Comerford reservoirs are unlikely to refill to the target elevations by May 21, as defined below. Flows shall be reduced to the extent necessary to achieve target reservoir elevations defined below for the Comerford reservoir. Prior to reducing the flows, the licensee shall consult with the New Hampshire Department of Environmental Services (NHDES) and the Vermont Department of Environmental Conservation (VTDEC) and shall provide these agencies with an analysis substantiating the necessity of the reduced flows.

The licensee shall operate the project so that the Comerford Development reservoir does not exceed a maximum elevation of 650.0 feet msl and a maximum annual drawdown to a level no lower than 624.0 feet msl. To enhance conditions for fish spawning in the spring, the licensee shall achieve a minimum reservoir elevation of 645.0 feet msl, with a target elevation of 647.0 feet msl, by May 21 each year. The licensee shall ensure that reservoir fluctuations from May 21 through June 30 shall not cause the reservoir to be drawn down more than 2.0 feet below the maximum elevation previously attained during this period.

McIndoes Development

The licensee shall release from the McIndoes Development dam into the Connecticut River the following instantaneous flows: 1,105 cfs from June 1 to September 30, 2,210 cfs from October 1 to March 31, and 4,420 cfs from April 1 to May 31, or inflow to the project reservoir, whichever is less, as measured in the tailrace. Inflow to

the McIndoes impoundment is defined as the sum of the corresponding Comerford development minimum flow subject to the Comerford flow reduction provisions described above, and the prorated Passumpsic gage flow (1.3 times the reported flow at Passumpsic gage No. 01135500). Minimum flow releases from the McIndoes dam between April 1 and May 31 may be reduced to 2,210 cfs if flows in excess of 50,000 cfs are anticipated at the Bellows Falls Project No. 1855, or 10,000 cfs are anticipated at the Wilder Project No. 1892. The licensee shall notify NHDES and VTDEC when such action reducing flows is taken. The maximum discharges from June 1 through February 28 shall not exceed 5,800 cfs for more than 7 percent of the hours during the period; this restriction shall not apply to periods when the Moore and Comerford reservoirs are at their maximum operating elevations, or when the sum of the flow at the Dalton gage and prorated Passumpsic gage exceeds 8,000 cfs. Prior to reducing the flows from the McIndoes development, the licensee shall consult with the NHDES and the VTDEC and shall provide these agencies with an analysis substantiating the necessity of the reduced flows. Such flow reduction is allowed for short periods upon mutual agreement between the licensee and NHDES and VTDEC.

The licensee shall operate the project so that the McIndoes Development reservoir does not exceed a maximum elevation of 451.0 feet msl and a maximum annual drawdown to a level no lower than 447.5 feet msl. The reservoir elevation of 451.0 feet msl may be exceeded if the inflow to the McIndoes reservoir exceeds the discharge capacity of the McIndoes dam, which is about 30,600 cfs at elevation 451.0 feet msl.

The minimum flows and reservoir levels required for each of the project developments may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon agreement between the licensee and the New Hampshire Fish and Game Department and the Vermont Agency of Natural Resources. The licensee shall notify the NHDES and the VTDEC within 24 hours of any deviation from the provisions described above and within 10 days submit a written report describing the event (including the extent of the duration), explaining the reasons, identifying ways to avoid future occurrences, and proposing mitigative measures. An extension of the 10-day filing deadline may be granted in writing by the NHDES for good cause. The licensee shall file an annual report of all minimum flow or reservoir level deviations from the specifications identified in this license article, with the NHDES and VTDEC, as part of the annual filing required in Article 403.

Article 402. Within 270 days from the date of issuance of this license, the licensee shall file with the Commission, New Hampshire Department of Environmental Services (NHDES), and Vermont Department of Environmental Conservation (VTDEC), a draft operating plan and schedule that addresses how storage at the Fifteen Mile Falls Project

reservoirs will be used to provide guaranteed flows (as required in Article 401) from the project developments, while minimizing the effects on the environment and public use. A draft of the plan shall be developed in consultation with the NHDES, New Hampshire Fish and Game Department, U.S. Fish and Wildlife Service, and VTDEC.

The draft plan shall include a schedule for: (1) consulting with the resource agencies specified above concerning the development and implementation of the final plan; and (2) filing agency comments, the licensee's response to agency comments on the draft plan, and the final plan with the Commission.

The licensee shall include with the final plan documentation of consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the final plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the Fifteen Mile Falls Operations Plan, including any changes required by the Commission.

Article 403. Within 180 days of the issuance date of the license, the licensee shall file with the Commission, for approval, a draft monitoring plan for project reservoir and flow management. The draft plan shall also be filed with the New Hampshire Department of Environmental Services (NHDES) and the Vermont Department of Environmental Conservation (VTDEC) and describe measures taken to instantaneously monitor the reservoir levels, inflow, and outflow at the Moore, Comerford, and McIndoes developments as required by Article 401.

The draft monitoring plan shall include: (1) a schedule for implementing the plan; (2) provisions for providing the flow data on a near real-time basis to the resource agencies; (3) copies of the rating curves that accurately depict the project's head-flow-to-power relationship; (4) provisions for consulting with the NHDES and VTDEC concerning the development and implementation of the final plan; (5) provisions for reporting project reservoir flow and elevation results annually with the Commission, NHDES, and VTDEC by March 31 of the year following the collection of the data, specifically including the relevant analysis and addressing how the licensee complied with the maximum flow restrictions required at the McIndoes development by Article 401; and (6) filing with the Commission documentation of consultation, copies of agency

comments and recommendations, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the final plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Within 180 days from the date of issuance of the license, the licensee shall file with the Commission, for approval, a draft water quality monitoring and enhancement plan. The draft plan shall include measures to meet state dissolved oxygen (DO) standards in the river reaches below the Moore and Comerford developments, and an implementation schedule. The plan shall include provisions to monitor DO levels and temperature of the Connecticut River in the reservoirs, penstocks, and tailraces, as specified below, of the Moore and Comerford developments for a period of five years. The data collected during the five-year period shall be provided to the Commission, the New Hampshire Department of Environmental Services (NHDES), and the Vermont Department of Environmental Conservation (VTDEC). After five years of collecting data, the results shall be reviewed by the Commission, the NHDES, and VTDEC to determine if additional DO and temperature studies shall continue. The purpose of this monitoring plan is to ensure that streamflows below the Moore and Comerford developments, as measured immediately downstream of the respective tailraces, meet state water quality standards for DO.

The draft water quality monitoring and enhancement plan shall include: (1) a schedule for implementing the plan; (2) identification of devices and methods to be used to collect the data, the frequency and duration of sampling, and identification of specific locations where the monitoring devices will be positioned in the tailraces, penstocks, and reservoirs; (3) provisions for the collection of temperature and DO data in the Moore and Comerford reservoirs and tailraces during periods of reservoir stratification; (4) provisions for the collection of temperature data in the penstocks of the Moore and Comerford developments; (5) provisions for identification and use of measures incorporating vacuum breakers or other devices at a minimum of one generating unit at each development during different time periods (particularly during low flow periods) to maximize DO compliance in meeting state water quality standards in the two developments' tailraces; (6) provisions for reporting procedures that provide monitoring results annually to the NHDES and VTDEC, by March 31 of the year following the collection of the data; (7) provisions to revise the plan to address any persistent project-

induced violations of temperature or DO state water quality standards that might occur; and (8) a schedule and provisions for consulting with the NHDES and VTDEC concerning the development of the final plan.

The licensee shall include with the final plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the final 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 licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. Within 180 days from the date of issuance of this license, the licensee shall file with the Commission, for approval, and with the New Hampshire Department of Environmental Services (NHDES) and the Vermont Department of Environmental Conservation (VTDEC), a draft plan for long-term monitoring of mercury in fish tissue at the Moore and Comerford development reservoirs. The licensee shall also consult with the U.S. Fish and Wildlife Service (FWS) in developing this long-term monitoring plan for mercury and keep the FWS informed of any new information gathered on mercury from any studies conducted at the project.

The draft monitoring plan shall include: (1) a schedule for implementing the plan; (2) consulting with the NHDES, VTDEC, and FWS concerning the development and implementation of the final plan; (3) provisions for posting and maintaining fish consumption advisories at public access points within the Fifteen Mile Project boundary, and ensuring the postings contain the most updated advisory information provided by NHDES and VTDEC; and (4) filing agency comments, and the licensee's response to agency comments on the plan, with the Commission.

The licensee shall include with the final plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the final 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 licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. Prior to any trashrack replacement, the licensee shall prepare a trashrack replacement plan, for Commission approval, for all intakes facilities that are part of the Fifteen Mile Falls Project to address agency concerns with fish entrainment and impingement at the Project. The plan should be developed in consultation with the U.S. Fish and Wildlife Service, the New Hampshire Fish and Game Department, and the Vermont Department of Fish and Wildlife, with a draft plan submitted to each of these agencies and the New Hampshire Department of Environmental Services (NHDES) and the Vermont Department of Environmental Conservation (VTDEC) for review, prior to filing the final plan with the Commission.

The draft plan shall include: (1) a schedule for implementing the plan; (2) the specifications of the proposed trashracks to include (a) the openings or clear bar spacing between the trashrack bars, (b) the type of materials used to construct the trashracks, (c) the rack location and design, to include the angle of the trashracks to river flow; (d) the estimated maximum intake approach velocity; and (e) a description of the methods; and (3) provisions for consulting with the state and federal resource agencies and the NHDES and VTDEC concerning the development and implementation of the final plan, and filing agency comments, and the licensee's response to agency comments on the final plan, with the Commission.

The licensee shall include with the final plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the final 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 licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. Within two years from the date of issuance of this license, the licensee shall file with the Commission, for approval, a draft fisheries enhancement plan including site-specific provisions that incorporate fishery enhancement measures described in Appendices B and C of the Fifteen Mile Falls Project Fisheries Mitigation Plan (FMP) (dated September 2000) filed as part of the license application and in accord with the August 6, 1997, Settlement Agreement for the Project. The FMP addresses a variety of measures to enhance fishery resources, including provisions for the licensee to construct structural habitat enhancement features to create fish habitat in the Moore and Comerford tailraces and initiate ways of improving fish access to tributaries for spawning during the drawdown of project reservoirs.

The draft plan shall include: (1) a schedule for implementing the plan; (2) consulting with the state and federal resource agencies and stakeholders that participated in approving Appendices B and C of the September 2000 FMP; and (3) filing agency and stakeholder comments, and the licensee's response to comments on the plan, with the Commission.

The licensee shall include with the final plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and stakeholders, and specific descriptions of how the agencies' and stakeholders comments are accommodated by the final plan. The licensee shall allow a minimum of 30 days for the agencies and stakeholders to comment and to make recommendations before filing the final 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 licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and

maintenance, of such fishways as may be prescribed by the Secretary of the Interior under Section 18 of the Federal Power Act.

Article 409. Within 180 days of the issuance of the license, the licensee shall file, for Commission approval, a plan for the construction, operation, and maintenance of a permanent downstream fish passage facility at the McIndoes development of the Fifteen Mile Falls Project. Before any land-clearing or land-disturbing activities at the project development site, the licensee shall file for Commission approval, detailed design drawings of the licensee's proposed downstream fish passage facility, together with a plan and schedule to construct, install, operate, and maintain the facility.

The plan shall include quantification of flows required to operate the proposed facility, an operation and maintenance schedule, detailed design drawings, measures to control erosion and sedimentation during project construction, and a construction schedule that ensures the fish passage facility would be installed and operational within two years from the date of issuance of this license. The licensee shall provide as-built drawings to the U.S. Fish and Wildlife Service and the Commission within 30 days from the completion of construction of the downstream fish passage facility.

The licensee shall prepare the downstream fish passage plan, with the aforementioned drawings and an operating schedule after consultation with the New Hampshire Fish and Game Department, the Vermont Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the Connecticut River Atlantic Salmon Commission (Salmon Commission). Prior to construction and implementation, the design of the downstream fish passage facility shall also be filed with the New Hampshire Department of Environmental Services and the Vermont Department of Environmental Conservation. The licensee shall provide a draft plan to the aforementioned entities. The licensee shall allow a minimum of 30 days for the agencies and Salmon Commission to comment and to make recommendations before filing the final plan with the Commission. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the draft plan after they have been prepared and provided to the resource agencies and the Salmon Commission, and specific descriptions of how the agencies' and Salmon Commission comments are accommodated by the licensee's facility. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the proposed facility and schedule. Upon Commission approval, the licensee shall implement the downstream fish passage plan and schedule, including any changes required by the Commission.

Article 410. Within 180 days of being notified by the New Hampshire Fish and Game Department (NHFGD), the Vermont Department of Fish and Wildlife (VTDFW), and the U.S. Fish and Wildlife Service (FWS) that an Atlantic salmon stocking program has been initiated upstream from the Moore reservoir and that such passage facilities are needed at the developments, the licensee shall file, for Commission approval, a plan for the construction, operation, and maintenance of permanent downstream fish passage facilities at the Moore and Comerford developments. The plan shall include provisions for ensuring construction and operation within 2 years of such notification. The two-year time frame for implementing the fish passage schedule may be extended by the New Hampshire Department of Environmental Services (NHDES), in consultation with the Vermont Department of Environmental Conservation (VTDEC), based on a request from the Connecticut River Atlantic Salmon Commission (Salmon Commission). Before any land-clearing or land-disturbing activities at the project development sites, the licensee shall file for Commission approval, detailed design drawings of the licensee's proposed downstream fish passage facilities, together with a plan and schedule to construct, install, operate, and maintain the facilities.

The plan shall include documentation of the date of notification by NHFGD, VTDFW, and FWS of the stocking program, detailed design drawings, quantification of flows required to operate each proposed facility, an operation and maintenance schedule, measures to control erosion and sedimentation during project construction, and a construction schedule that ensures the fish passage facilities would be installed and operational within two years from the date of being notified by the above state and federal resource agencies and the Salmon Commission that passage facilities are needed at the two developments. The licensee shall provide as-built drawings to the FWS and the Commission within 30 days from the completion of construction of each downstream fish passage facility.

The licensee shall prepare the downstream fish passage plans, with the aforementioned drawings and an operating schedule after consultation with the NHFGD, the VTDF, the FWS, and the Salmon Commission. Prior to construction and implementation, the designs of the downstream fish passage facilities shall also be filed with the NHDES and VTDEC. The licensee shall provide a draft plan to the aforementioned entities. The licensee shall allow a minimum of 30 days for the agencies and Salmon Commission to comment and to make recommendations before filing the final plan with the Commission. The licensee shall include with the plan documentation of

consultation, copies of comments and recommendations on the draft plan after they have been prepared and provided to the resource agencies and the Salmon Commission, and specific descriptions of how the agencies' and Salmon Commission's comments are accommodated by the licensee's facilities. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the proposed facilities and schedules. Upon Commission approval, the licensee shall implement the downstream fish passage plans and schedules, including any changes required by the Commission.

Article 411. Within 180 days of being notified that 20 adult Atlantic salmon reached the East Ryegate Dam in two consecutive years, and the New Hampshire Fish and Game Department (NHFGD), the Vermont Department of Fish and Wildlife (VTDFW), the U.S. Fish and Wildlife Service (FWS), and the Connecticut River Atlantic Salmon Commission (Salmon Commission) determine that upstream fish passage is justified, the licensee shall file, for Commission approval, a plan for the construction, operation, and maintenance of a permanent upstream fish passage facility at the McIndoes development of the Fifteen Mile Falls Project to provide upstream passage for adult Atlantic salmon. The downstream East Ryegate Dam is part of the Dodge Falls Project No. 8011. Before any land-clearing or land-disturbing activities at the project development site, the licensee shall file for Commission approval, detailed design drawings of the licensee's proposed upstream fish passage facility, together with a plan and schedule to construct, install, operate, and maintain the facility. The licensee shall, at the request of the four entities named above, participate in trap-and-truck facility construction and operation at the East Ryegate Dam in substitution for the permanent upstream fish passage facilities required under this article for the McIndoes development, and/or construct and operate a trap-and-truck facility at Comerford dam. If trap-and-truck passage is required at the East Ryegate Dam and/or at the Comerford development, the licensee shall implement the requirements for these facilities as ordered under Article 412.

The plan shall include quantification of flows required to operate the proposed facility, an operation and maintenance schedule, detailed design drawings, measures to control erosion and sedimentation during project construction, and a construction schedule that ensures the fish passage facility would be installed and operational within a short period of time after the trigger numbers of fish have reached the East Ryegate Dam (for example, within two construction seasons following the attainment of the trigger

numbers). The licensee shall provide as-built drawings to the FWS and the Commission within 30 days from the completion of construction of the upstream fish passage facility.

The licensee shall prepare the upstream fish passage plan, with the design drawings and an operating schedule, after consultation with the aforementioned state and federal resource agencies and the Salmon Commission. Prior to construction and implementation, the design of the upstream fish passage facility shall also be filed with the New Hampshire Department of Environmental Services, in consultation with the Vermont Department of Environmental Conservation. The licensee shall provide a draft plan to the aforementioned entities. The licensee shall allow a minimum of 30 days for the agencies and Salmon Commission to comment and to make recommendations before filing the final plan with the Commission. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the draft plan after they have been prepared and provided to the resource agencies and the Salmon Commission, and specific descriptions of how the agencies' and Salmon Commission's comments are accommodated by the licensee's plan. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The licensee shall provide the final plan, including the aforementioned evidence of consultation, according to the schedule in the draft plan, as approved by the Commission. The final plan shall also include an implementation schedule.

The Commission reserves the right to require changes to the proposed facility and schedule. Upon Commission approval, the licensee shall implement the upstream fish passage plan and schedule, including any changes required by the Commission.

Article 412. The licensee shall file, for Commission approval, a plan to implement a trap-and-truck operation to capture and transport upstream, migrating Atlantic salmon adults reaching the East Ryegate Dam, based on the trigger numbers of 20 fish required in Article 411, within 180 days from receiving a request from the New Hampshire Fish and Game Department, the Vermont Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the Connecticut River Atlantic Salmon Commission (Salmon Commission), that such passage is needed instead of the permanent upstream fish passage facility required for the McIndoes development under Article 411. The plan shall also include under the same time frame and trigger numbers of fish, provisions for the installation of trap-and-truck fish passage facilities at the Comerford dam, upon being notified by the four resource entities named above, that trap-and-truck facilities are needed at the East Ryegate Dam. The plan should allow for installation of the Comerford trap-and-truck facilities at the same time as those installed at the East Ryegate Dam or for installation at a subsequent time.

The plan shall include: (1) a schedule for implementing the plan; (2) consulting with the four resource entities identified above concerning the development and implementation of the plan; (3) a description of the measures and equipment to be used in the interim, until a permanent upstream facility is constructed (as required in Article 411), including measures for capturing and safely transporting fish upstream; (4) identification of the upstream release sites(s) for Atlantic salmon captured in the trap(s); and (5) filing agency comments, and the licensee's response to agency comments on the plan, with the Commission. Prior to construction and implementation, the design of the trap-and-truck passage facilities shall also be filed with the New Hampshire Department of Environmental Services and the Vermont Department of Environmental Conservation.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and Salmon Commission, and specific descriptions of how the agencies' and Salmon Commission's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and Salmon Commission to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 413. No later than six months prior to the start of operation of the downstream and upstream fish passage facilities described in Articles 409, 410, 411, and 412 for the Fifteen Mile Falls Project, the licensee shall file with the Commission, for approval, a plan for post-construction studies to monitor the effectiveness of the upstream and downstream fish passage facilities and associated operational flows to pass Atlantic salmon smolts downstream at the Moore, Comerford, and McIndoes developments and to pass adult Atlantic salmon upstream past the McIndoes development and Comerford development (if applicable).

The plan shall include provisions for: (1) facility oversight and personnel commitments; and (2) back-up equipment and supplies that would be maintained to ensure efficient and consistent operation of the fish passage facilities. The monitoring plan shall also include a schedule for: (1) implementing the plan; (2) consulting with the resource agencies listed below in addition to the Connecticut River Atlantic Salmon Commission (Salmon Commission) concerning the results of the monitoring; (3) assessing the effectiveness of the bypassed facilities to reduce fish injury and mortality; and (4) filing

the results, agency and Salmon Commission comments, and the licensee's responses to agency and Salmon Commission comments, with the Commission.

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

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the Fishways Monitoring Plan, including any changes required by the Commission.

If the results of the monitoring indicate that changes in project structures or operations, including fish passage facilities, trap-and-truck operations, and alternative flow releases and schedules are necessary to protect fish resources, the Commission may direct the licensee to modify project structures, procedures, or operations.

Article 414. Within 180 days from the date of issuance of this license, the licensee shall prepare a plan, for Commission approval, to study American eel passage past the Fifteen Mile Falls Project. The licensee shall develop the plan in consultation with the U.S. Fish and Wildlife Service (FWS), the New Hampshire Fish and Game Department (NHFG), and the Vermont Department of Fish and Wildlife (VTDFW), and include an implementation schedule. The plan shall address various measures that could provide American eels upstream and downstream passage past the project. The final plan shall be provided to the New Hampshire Department of Environmental Services (NHDES), in consultation with the Vermont Department of Environmental Conservation (VTDEC), prior to implementation.

The study plan shall include: (1) a schedule for implementing the plan; (2) consulting with the FWS, NHFG, VTDFW, NHDES, and VTDEC concerning the

development and implementation of the plan; and (3) filing agency comments, and the licensee's response to agency comments on the plan, with the Commission.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 415. Within two years of the issuance date of the license, the licensee shall, after consultation with the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department, and the Vermont Agency of Natural Resources, as appropriate, file for Commission approval a final Wildlife and Forest Management Plan (Plan) for the Fifteen Mile Falls Project. The licensee shall utilize its Wildlife and Forest Management Plan, Fifteen Mile Falls Hydroelectric Project (FERC No. 2077), filed September 26, 2000, for finalizing the Plan.

The Plan shall include, but not be limited to, the following provisions as specified in Stipulation VI. C of the Settlement Agreement (filed July 29, 1999) for the licensee's land within the existing project boundary: (1) pesticide and herbicide use; (2) timber management practices to benefit wildlife (*i.e.*, deer wintering areas) and protect other important resources (*i.e.*, vernal pool sites); (3) evaluation of the need for and provision of waterfowl nesting structures and other enhancement, if appropriate; (4) evaluation and implementation of measures to protect the turtle nesting area in the Comerford development at an abandoned sand pit near Pine Grove recreation area; (5) monitor non-native nuisance species (such as, purple loosestrife, Phragmites, and Eurasian milfoil) in conjunction with forest management and land-management activities; (6) establishment of riparian management zones; (7) a map(s) that identify(ies) areas of special concern, such as vernal pools; (8) correspondence that documents the establishment of conservation easements on the approximate 4,000 acres of land within the existing project boundary (as specified in stipulation V.A of the Settlement Agreement (filed July 29, 1999); and (9) an implementation schedule.

The Plan shall include documentation of agency consultation, copies of comments and recommendations on the Plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the Plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the Plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the Plan. Upon Commission approval, the licensee shall implement the Plan.

Article 416. Within two years of the issuance date of the license, the licensee shall, after consultation with the U.S. Fish and Wildlife Service (FWS), New Hampshire Fish and Game Department (NHFGD), and the Vermont Agency of Natural Resources (VANR), as appropriate, file for Commission approval a final Management Plan for Threatened and Endangered Species for the Fifteen Mile Falls Project. The licensee shall utilize its Management Plan for Threatened and Endangered Species, Fifteen Mile Falls Hydroelectric Project (FERC No. 2077), filed September 26, 2000, for finalizing the plan.

To protect the federally-listed bald eagle (*Haliaeetus leucocephalus*) and its habitat, and other threatened and endangered species within the existing project boundary, the final Management Plan for Threatened and Endangered Species shall include, but not be limited to, the following provisions as specified in Stipulation VI. E of the Settlement Agreement (filed July 29, 1999): (1) protection of super canopy white pine trees that have the potential to serve as bald eagle perch or nest sites; (2) assessment of the need for and feasibility of construction of a bald eagle nest(s) on Moore reservoir; (3) in the event of an osprey or bald eagle nesting on the licensee's project land, provision for placing a 300-foot buffer around the tree; and (4) an implementation schedule.

The plan shall include documentation of agency consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the Plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan.

Article 417. Within two years of the issuance date of the license, the licensee shall, after consultation with the U.S. Fish and Wildlife Service, The Nature Conservancy, New Hampshire Fish and Game Department, and the Vermont Agency of Natural Resources, as appropriate, file for Commission approval a Rare and Unusual Plant/Plant Community Management Plan for the Fifteen Mile Falls Project.

The Rare and Unusual Plant/Plant Community Management Plan shall address the protection, enhancement, and management of the following rare plant habitats and communities, located on the licensee's land within the existing project boundary, as specified in Stipulation VI. D of the Settlement Agreement (filed July 29, 1999): (1) at Nine Islands (above McIndoes Falls dam), a rare flood plain forest community; (2) the wooded slope downstream of the Moore dam, a high quality example of rich northern hardwood forest; (3) on the east side of the Connecticut River adjacent to the Comerford dam tailrace area, a natural Northern New England calcareous seep and fen; (4) at the northern end of the east side of the Comerford tailrace area, a small, very steep hillside seep; (5) on the west side of the Connecticut River below Comerford dam, a New England riverside seep community; (6) below Comerford dam at the ledges along the shore line near the mouth of the Passumpsic River, a population of bog wintergreen (*Pyrola asarifolia*), a state-listed species; (7) a small isolated area on the northern shore of Moore reservoir with the structure and characteristics of old growth forest; and (8) at Nine Islands, Round or Indian Island, which has super canopy pine trees.

The plan shall include an implementation schedule, documentation of agency consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the Plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan.

Article 418. Within two years of the issuance date of the license, the licensee shall, after consultation with the U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), New Hampshire Fish and Game Department (NHFGD), Connecticut River Joint Commissions (CRJC), Appalachian Mountain Club (AMC), and Vermont Agency of Natural Resources (VANR), as appropriate, file for Commission approval a final Recreation Plan for the Fifteen Mile Falls Project. The licensee shall utilize its Recreation Resource Assessment and Management Plan, Fifteen Mile Falls Hydroelectric Project

(FERC No. 2077), filed September 26, 2000, for finalizing the plan. Furthermore, the licensee shall develop the final Recreation Plan in conjunction with the Cultural Resources Management Plan required in Article 419, so that recreational enhancements do not conflict with the cultural resources in the project area.

The final Recreation Plan shall include, but not be limited to, the measures as specified in Section 5.3 (Proposed Recreation Enhancements), pages 75 to 100, and in Section 5.4 (Proposed Safety Measures), pages 100 to 102, of the Recreation Resource Assessment and Management Plan, Fifteen Mile Falls Hydroelectric Project (FERC No. 2077).

The plan shall include a construction schedule, estimated costs for the construction and maintenance of each facility, a description of soil erosion and sediment control measures to be used during construction, a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities, the entity responsible for the operation and maintenance of the facilities, documentation of agency consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan.

Article 419. The licensee shall implement the "Programmatic Agreement Among The Federal Energy Regulatory Commission, The Advisory Council on Historic Preservation, And The New Hampshire And Vermont State Historic Preservation Officers, For Managing Historic Properties That May Be Affected By A License Issuing To USGen New England, Inc. For The Continued Operation And Maintenance Of The Fifteen Mile Falls Hydroelectric Project In New Hampshire and Vermont", signed on February 6, 2002, including but not limited to the Cultural Resources Management Plan (CRMP) for the project. In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved CRMP. The Commission reserves the authority to require changes to the CRMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the CRMP, the licensee shall obtain Commission approval before engaging in any ground disturbing activities or taking any other action that may affect any historic properties within the project's Area of Potential Effect.

Article 420. Within 90 days of the issuance date of the license, the licensee shall file for Commission approval, a plan to contribute monies to an Upper Connecticut River Mitigation and Enhancement Fund (Fund), to be established by the States of New Hampshire and Vermont for the implementation of resource enhancement measures in the Upper Connecticut River Basin, as described in Stipulation IV of the Settlement Agreement (filed July 29, 1999). The plan shall generally describe the type of project-related activities to be undertaken to enhance the natural resources of the Upper Connecticut River Basin. The plan shall contain a schedule for contributing monies to the Fund, including provisions for a one-time initial payment and annual payments (in accordance with the Settlement Agreement), a discussion of how the Fund will be administered and how decisions will be made concerning which project-related activities will be undertaken, and provisions for filing with the Commission, an annual report describing the project-related environmental activities performed in the past year.

The plan shall include documentation of agency consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the Plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan.

Article 421. (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) noncommercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. 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 reservoir 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 and roads for which 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) nonproject 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 reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during

the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or 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 the edge of the project reservoir at normal maximum 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 45 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 or K 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 exhibit R or approved report on recreational resources of an exhibit E; or, if the project does not have an approved exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (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 insure 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 or K 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 or K 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.

Article 501. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

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

(F) This order 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 shall constitute acceptance of this order.

J. Mark Robinson
Director
Office of Energy Projects

APPENDIX A

WATER QUALITY CERTIFICATION CONDITIONS

- 1) **Compliance with Conditions.** The Applicant shall operate and maintain the Project consistent with the conditions of this certification. At no time shall the Project cause the water quality standards of either state to be violated. If it is determined that water quality standards are being violated, additional conditions may be imposed or conditions amended by NHDES in accordance with Env-Ws 455.
- 2) **Reservoir and Flow Management.** The Project shall be operated in accordance with the conservation flow and reservoir level management schedules in Attachment 1.
- 3) **Operating Plan.** The Applicant shall prepare a plan that addresses how reservoir storage will be utilized to provide guaranteed flows while minimizing impacts on the environment and public use. A draft of the plan shall be developed in consultation with NHDES, U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the VTDEC, and a draft will be submitted to NHDES and VTDEC for review within 90 days of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 4) **Deviations from Prescribed Operating Conditions.** The Applicant shall notify NHDES and VTDEC within 24 hours of any deviation from the provisions of Condition 2 and within 10 days submit a written report describing the event (including the extent of the deviation), explaining the reasons, identifying ways to avoid future occurrences, and proposing mitigative measures. An extension of the 10-day filing deadline may be granted in writing by NHDES for good cause. The Applicant shall file a report of all deviations from the provisions of Condition 2 annually with NHDES and VTDEC as part of the annual filing provided for in Condition 5.
- 5) **Monitoring Plan for Reservoir and Flow Management.** Within 90 days of the issuance of a federal license the Applicant shall file a plan with NHDES and VTDEC for monitoring instantaneous reservoir levels, inflow, and outflow at all three Project facilities. The plan shall include provisions for this flow data to be available on a near real-time basis. The Applicant shall include in the monitoring plan copies of the turbine rating curves, accurately depicting the flow/production relationship. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall measure flows and reservoir levels and file the records annually with NHDES and VTDEC by March 31 of the following year. The annual filing shall specifically address compliance with the maximum flow restrictions at McIndoes, as described in Attachment 1.
- 6) **Dissolved Oxygen in the Tailraces of the Moore and Comerford Developments.** Within 180 days of the issuance of the federal license the Applicant shall file a plan with NHDES and VTDEC, for measures necessary to meet dissolved oxygen standards in the river reaches below the Moore and Comerford developments, and a schedule for implementation. The plan and schedule shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. If violations of dissolved oxygen standards persist, the Applicant shall revise the plan to include additional measures to meet dissolved oxygen standards. Any revised plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.

- 7) **Monitoring of Tailrace Dissolved Oxygen and Temperature.** Within 180 days of the issuance of the federal license the Applicant shall file with NHDES and VTDEC a plan for monitoring 1) dissolved oxygen and temperature in the tailraces of the Moore and Comerford developments during periods of reservoir stratification, and 2) temperature in the Moore and Comerford penstocks. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall measure dissolved oxygen and temperature and file records of these results annually with NHDES and VTDEC by March 31 of the following year. Following the initial five year monitoring period, NHDES will review the data in consultation with VTDEC and may suspend this requirement, all or in part.
- 8) **Reservoir Dissolved Oxygen.** Within 180 days of the issuance of a federal license the Applicant shall file a plan with NHDES and VTDEC for monitoring water temperature and dissolved oxygen in the Moore and Comerford reservoirs during periods of reservoir stratification. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall then measure dissolved oxygen and temperature and file records of these results annually with NHDES and VTDEC by March 31 of the following year. Following the initial five year monitoring period, NHDES will review the data in consultation with VTDEC and may suspend this monitoring requirement, all or in part.
- 9) **Monitoring Plan for Mercury in Fish Tissue.** Within 180 days of the issuance of a federal license, the Applicant shall file with NHDES and VTDEC a long-term plan for monitoring mercury in fish tissue at Moore and Comerford reservoirs. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Monitoring results shall be reported to NHDES and VTDEC by December 31 of the sample year.
- 10) **Posting of Fish Consumption Advisories at Access Points.** The Applicant shall post and maintain fish consumption advisories at public access points within the Project boundary. It shall be the responsibility of the Applicant to post signs with the most updated fish consumption advisory information provided by each state.
- 11) **Prevention of Fish Entrainment and Impingement at Intakes.** Prior to the next replacement of intake trashracks at any Project facility, the Applicant shall determine the appropriate bar clear spacing, rack location, and other design elements. The design shall be developed in consultation with the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the Vermont Department of Fish and Wildlife, and a draft shall be submitted to NHDES and VTDEC for review. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 12) **Fisheries Mitigation Measures.** The Applicant shall implement plans to enhance structural habitat in the Moore and Comerford tailraces and improve tributary access to fish as described in Appendix B and Appendix C, respectively, of the *Fisheries Mitigation Plan* (September 2000) submitted as part of the license application. Within two years of receiving a federal license for the project, the Applicant shall file site-specific project plans with NHDES and VTDEC for review. The final plans shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 13) **Downstream Fish Passage – McIndoes Development.** The Applicant shall provide downstream fish passage at the McIndoes Development within two years of receiving a federal license for the project. Plans

for the fish passage facilities shall be developed in consultation with the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Connecticut River Atlantic Salmon Commission. Prior to construction, the design shall be filed with NHDES and VTDEC. The design shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Once new passage facilities are completed, the Applicant shall monitor their effectiveness in accordance with a plan developed in consultation with the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Connecticut River Atlantic Salmon Commission. A draft monitoring plan shall be filed with NHDES and VTDEC. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following review of the final monitoring results by the state and federal fishery agencies and VTDEC, NHDES may require additional measures to provide downstream fish passage.

- 14) **Downstream Fish Passage – Moore and Comerford Developments.** The Applicant shall provide downstream fish passage at the Moore and Comerford Developments within two years of being notified by the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, and U.S. Fish and Wildlife Service that an Atlantic salmon stocking program has been initiated upstream from Moore Reservoir and that such passage is needed. Upon a request from the Connecticut River Atlantic Salmon Commission to extend the implementation schedule, the schedule may be extended by NHDES, in consultation with VTDEC. The design and operating plan for fish passage facilities shall be developed in consultation with these agencies and the Connecticut River Atlantic Salmon Commission, and shall be filed with NHDES and VTDEC. The design and operating plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 15) **Atlantic Salmon Upstream Passage.** The Applicant shall provide upstream fish passage past McIndoes Dam after 20 Atlantic salmon migrating upstream reach the East Ryegate Dam for two consecutive years and the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service and Connecticut River Atlantic Salmon Commission determine that upstream fish passage is justified. At the discretion of the above-named agencies, the passage may consist of facilities located at McIndoes Dam or participation in trap-and-truck facility construction and operation at East Ryegate Dam. If the above-named agencies determine it is justifiable, at the same time or subsequently, a fish trap shall be constructed at Comerford Dam, and a trap-and-truck operation instituted. Passage measures shall be developed by the Applicant, in consultation with and following a schedule and plan acceptable to the above-named agencies. This requirement may be modified by the above-named agencies subject to approval by NHDES, in consultation with VTDEC. The upstream fish passage plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 16) **American Eel Passage.** The Applicant shall develop a plan to study eel passage or provide upstream and downstream eel passage within one year of being notified by the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department, and Vermont Department of Fish and Wildlife that eel passage is necessary. The plan will include an implementation schedule agreed to with the fishery agencies, and will be developed in consultation with the above-named agencies. The eel passage plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 17) **Threatened and Endangered Species.** The Applicant shall prepare a management plan for threatened and endangered species located on Project lands or affected by the Project. The plan will be developed in consultation with the U.S. Fish and Wildlife Service and the natural heritage programs of New Hampshire and Vermont. A draft will be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.

- 18) **Wildlife and Forestry Management Plan.** The Applicant shall prepare a management plan for the protection, enhancement, and management of wildlife resources, and management of timber resources; on Project lands. The plan shall include provisions for the protection of riparian areas, wetlands, and water quality. The plan will be developed in consultation with the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the Vermont Agency of Natural Resources. A draft will be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 19) **Public Access.** The Applicant shall allow public access to the Project area 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 Vermont waters to be imposed by the Applicant shall first be subject to written approval by the VTDEC. In cases where an immediate threat to public safety exists, access may be restricted without prior approval; the Applicant shall so notify the VTDEC 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.
- 20) **Recreation Plan.** Recreational facilities shall be constructed and maintained consistent with a recreation plan filed with NHDES and VTDEC within one year of the issuance of the FERC license. The plan shall include an implementation schedule. The Applicant shall consult with the appropriate state agency (NHDES or VTDEC) during the development of site-specific project plans if any clearing of vegetation or earthwork would be involved. Where appropriate, the project plans shall include details on erosion control. Changes to the recreation plan shall also be subject to approval by the appropriate state agency over the term of the license.
- 21) **Erosion Control.** Upon a written request by NHDES or VTDEC, the Applicant shall design and implement erosion control measures as necessary to address erosion resulting from use of the Project lands for recreation that is causing turbidity or is otherwise compromising water quality. Any work that exceeds minor maintenance shall be subject to prior approval by NHDES or VTDEC, depending on the state where the erosion control measures will take place.
- 22) **Debris Disposal Plan.** The Applicant shall develop a plan for proper disposal of debris associated with Project operation, including trashrack debris, litter, and trash. The plan shall be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be approved by NHDES, in consultation with VTDEC, prior to implementation. The approved plan shall be filed with FERC. The purpose of the plan is to protect downstream navigation and aesthetic quality. Proper disposal is defined as disposal in accordance with the New Hampshire and Vermont Solid Waste Rules in the affected state. The plan shall include information on the design and materials (including flashboard composition, failure characteristics, and attachment method) used for flashboard construction at McIndoes Dam and the potential for the discharge of flashboards downstream. Upon approval of the plan by NHDES and FERC the Applicant shall implement the approved plan. NHDES reserves the right of review and approval of any material changes made to the plan at any time, in consultation with VTDEC.
- 23) **Maintenance and Repair.** At least 90 days prior to implementing any alteration of normal reservoir pool levels or stream flow, or maintenance or repair that requires earth-disturbing activities, including but not limited to dredging or desilting operations, the Applicant shall consult with NHDES and VTDEC. Except under emergency conditions, the Applicant shall obtain approval from NHDES, in consultation with VTDEC, prior to initiating these types of maintenance activities.
- 24) **Compliance Inspection by Departments.** The Applicant shall allow NHDES and VTDEC to inspect the Project at any time to monitor compliance with certification conditions.

- 25) **Posting of Certification.** A copy of this certification shall be prominently posted within the Project powerhouses.
- 26) **Approval of Project Changes.** The Project shall be constructed and operated as described in this Water Quality Certification. Should the FERC license require modifications or the licensee request to make modifications, the licensee shall first consult with NHDES for a determination of whether the certification may need to be amended or a new certification issued. NHDES will consult with VTDEC prior to making a final determination. Any amendment of certification or new certification, determined appropriate by NHDES, must be issued prior to implementing any changes.
- 27) **Reopening of License.** NHDES or VTDEC may request, at any time, that FERC reopen the license to consider modifications to the license as necessary to ensure compliance with New Hampshire and Vermont water quality standards.
- 28) **Reservation of Authority.** The terms and conditions of this Water Quality Certification may be amended and additional terms and conditions added as necessary to ensure compliance with New Hampshire and Vermont water quality standards, when authorized by law, and after notice and opportunity for hearing.

