

UNITED STATES OF AMERICA 79 FERC ¶61,006  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;  
Vicky A. Bailey, James J. Hoecker,  
William L. Massey, and Donald F. Santa, Jr.

New England Power Company ) Project No. 2323-012

ORDER APPROVING OFFER OF SETTLEMENT  
AND ISSUING NEW LICENSE

(Issued April 4, 1997)

I. INTRODUCTION

On December 27, 1991, New England Power Company filed an application pursuant to Sections 4(e) and 15 of the Federal Power Act (FPA)<sup>1/</sup> for a new license authorizing the continued operation and maintenance of the 76.9-megawatt (MW) Deerfield River Project, consisting of eight developments located on the Deerfield River, a navigable waterway of the United States, in Windham and Bennington Counties, Vermont, and Franklin and Berkshire Counties, Massachusetts.

The Commission issued the original license for the project on October 29, 1963.<sup>2/</sup> The license expired on December 31, 1993, and since then New England Power has operated the project under successive annual licenses pending the disposition of its application for a new license. For the reasons discussed below, we will issue a new license to New England Power for the Deerfield River Project.<sup>3/</sup>

New England Power and twelve parties to the proceeding, including federal and state resource agencies and citizens groups representing various environmental and recreational interests, negotiated an Offer of Settlement (Settlement), to resolve the issues in this proceeding.<sup>4/</sup> On October 6, 1994, New England

<sup>1/</sup> 16 U.S.C. §§ 797(e), 808.

<sup>2/</sup> New England Power Company, 30 FPC 1120 (1963).

<sup>3/</sup> Concurrently with this order, we are issuing an order amending the license for New England Power's Bear Swamp Project No. 2669. Our approval of the Settlement and our issuance of the new license are premised on implementation of the changes in the operation of the Bear Swamp Project through acceptance by New England Power of the amendment to the Bear Swamp license.

<sup>4/</sup> The parties to the Settlement are: New England Power, the United States Environmental Protection Agency, the National Park Service, the United States

Power filed the Settlement with the Commission.

## II. BACKGROUND

Notice of the application has been published. Pursuant to that notice, timely motions to intervene were filed by the Deerfield River Watershed Association, the Deerfield River Compact, the Vermont Agency of Natural Resources (Vermont ANR), the United States Environmental Protection Agency, the United States Department of the Interior (Interior), the Town of Whitingham, Vermont, the Windham Regional Commission, the Town of Wilmington, Vermont, the Town of Wardsboro, Vermont, the Town of Readsboro, Vermont, the Commonwealth of Massachusetts (Massachusetts), and the Conservation Law Foundation. Motions to intervene in opposition were filed by Trout Unlimited and jointly by the Appalachian Mountain Club, New England Flow, American Rivers, Inc., and American Whitewater Affiliation (jointly, Appalachian); these motions were superseded by support of the Settlement filed October 6, 1994. The Vermont Natural Resources Council and the Vermont Federation of Sportsmen's Clubs (jointly, Vermont NRC) filed a joint motion to intervene in opposition to relicensing the project.<sup>5/</sup> In addition, a late-filed motion to intervene was filed by North American Whitewater Expeditions.

Notice of the Settlement was issued October 19, 1994. The following state and federal agencies and citizens groups filed comments on the Settlement: Massachusetts, Interior, Appalachian, and the Windham Regional Commission.

A final Environmental Impact Statement (EIS), prepared by the Commission's staff for this project, was issued on August 23,

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Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, American Rivers, Inc., American Whitewater Affiliation, the Appalachian Mountain Club, the Conservation Law Foundation, the Deerfield River Compact, the Deerfield River Watershed Association, New England FLOW, and Trout Unlimited.

The Vermont Agency of Natural Resources is not a party to the Settlement and has not indicated opposition to the Settlement. As discussed below, the water quality certification it issued contains conditions which conflict with the Settlement, but not significantly.

<sup>5/</sup> Vermont NRC opposes relicensing unless the license is conditioned to eliminate annual peaking and includes what it considers appropriate limitations on reservoir draw-downs at the Somerset, Searsburg, and Harriman developments, and Vermont NRC has proposed minimum flows for those developments. Vermont NRC also recommends upstream and downstream fish passage facilities at Searsburg. These issues were addressed in the Vermont Section 401 water certification proceeding, as discussed below.

1996. The EIS is incorporated by reference in this order. The staff also prepared a Safety and Design Assessment for this project, which is available in the Commission's public file.

We have fully considered the motions and comments received from interested agencies and individuals in determining whether, and under what conditions, to issue this license.

### III. PROJECT DESCRIPTION

The Deerfield Project No. 2323 consists of three developments in Vermont (Somerset, Searsburg, and Harriman) and five in Massachusetts (Sherman, Deerfield No. 5, Deerfield No. 4, Deerfield No. 3, and Deerfield No. 2), located between river miles 13.2 and 66 on the Deerfield River. The eight individual developments are as follows, from the most upstream to the most downstream: 6/

The Somerset facility, which has no power generating units, consists of a dam, and an impoundment 56 miles long with a gross surface area of 1,514 acres. The Searsburg development consists of a dam; an impoundment, about 0.9 miles long, with a surface area of 30 acres; and a powerhouse containing one generating unit with a capacity of 4.16 MW. Harriman, the most downstream development in Vermont, consists of a dam; a storage reservoir, nine miles long, with a surface area of 2,039 acres; a 12,812-foot-long tunnel conveying water from the reservoir; and a powerhouse containing three generating units with a total capacity of 33.6 MW.

Sherman, the most upstream development in Massachusetts, consists of a dam; an impoundment, two miles long, having a surface area of about 218 acres; and a powerhouse containing one generating unit with a capacity of 7.2 MW. Deerfield No. 5 consists of a dam; an impoundment, 0.75 miles long, with a surface area of 38 acres; conveyance sections of tunnel, conduit, and canal totaling 14,941 feet; and a powerhouse containing one generating unit with a capacity of 17.55 MW.7/ Deerfield No. 4

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6/ Western Massachusetts Electric Company's (WMEC) Gardner Falls Project No. 2334 is located on the Deerfield River between the Deerfield No. 3 and Deerfield No. 2 developments of the Deerfield River Project. WMEC filed an application for a new license for the Gardner Falls Project on December 23, 1991. The Gardner Falls Project is analyzed in the same EIS as the Deerfield River Project. The Settlement, however, does not include the Gardner Falls Project, and WMEC is not a signatory to the Settlement.

7/ Deerfield No. 5 discharges directly into the Fife Brook impoundment, which is the lower reservoir for New England Power's Bear Swamp Pumped Storage Project.

consists of a dam; an impoundment, two miles long, with a surface area of 75 acres; a 1,514-foot-long power tunnel; and a powerhouse containing three generating units with a total capacity of 4.8 MW. Deerfield No. 3 consists of a dam; an impoundment, 1.3 miles long, with a surface area of 42 acres; a 677-foot-long power tunnel; and a powerhouse containing three generating units with a total capacity of 4.8 MW.<sup>8/</sup> Deerfield No. 2 consists of a dam; an impoundment, 1.5 miles long, with a surface area of 63.5 acres; <sup>9/</sup> and a powerhouse containing three generating units with a total capacity of 4.8 MW.

A more detailed description of the project is set forth in ordering paragraph B(2). New England Power proposes no new capacity and no new construction.

#### IV. SUMMARY OF THE OFFER OF SETTLEMENT

##### A. General Provisions

The Settlement names the parties to the agreement and states the purpose of the Settlement: to provide the terms and conditions for the resolution of the issues regarding fisheries, fish passage, wildlife, water quality, project lands management and control, recreation, and aesthetic resources raised by the applicant's proposal for a new license for the Deerfield River Project.

Section I of the Settlement lists the eight Deerfield River developments, their respective generation capacities, and the state in which each development is located. Section I also gives a brief procedural history of the Project No. 2323 relicensing proceeding.

Section II states that New England Power agrees to implement the various obligations and requirements of the Settlement, and that the resource agencies and citizens groups agree to support a new license for the project for a term of 40 years. For those issues addressed in the Settlement, the parties have agreed not to propose or otherwise communicate to the Commission any license conditions other than those in the Settlement.

Section II further provides that the Settlement shall become effective upon the later of issuance by this Commission of a new license consistent with the Settlement, or the expiration of any

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<sup>8/</sup> The Deerfield No. 3 powerhouse discharges into a section of the Deerfield River that is impounded by WMEC's Gardners Falls Project.

<sup>9/</sup> Flow into the Deerfield No. 2 reservoir is from WMEC's Gardners Falls Project.

appeal period for water quality certification issued by Vermont and Massachusetts. If water quality certification issued by either state results in license terms inconsistent with the Settlement, any party may withdraw pursuant to Section VII of the Settlement. Any party may also withdraw if the environmental analysis leads to the addition of any license conditions inconsistent with the Settlement.

#### B. Fisheries and Wildlife

Section III of the Settlement sets forth minimum flow releases and related conditions, such as flows guaranteed from storage, for the Deerfield River developments and from Fife Brook Dam, which provides the lower reservoir for New England Power's Bear Swamp Pumped Storage Project No. 2669. <sup>10/</sup> The Settlement requires New England Power to maintain a stable elevation for the Somerset reservoir to facilitate loon nesting during the period May 1 through July 31 each year, and to manage the reservoir level at Harriman to support rainbow smelt and small mouth bass spawning and early life stages. Section III provides for New England Power to develop a plan for monitoring the minimum flows and reservoir operations required by the Settlement, and lists examples of the type of emergency conditions during which New England Power could vary the operational restrictions set out in the Settlement.

Section III also requires New England Power to provide downstream fish passage facilities at the Deerfield Nos. 2, 3, and 4 developments, and upstream passage at Deerfield No. 2. The fish passage facilities at Deerfield No. 2 would be implemented in phases, determined by the number of adult Atlantic salmon returning to the Deerfield River. The parties to the Settlement also agree to support a reservation of authority for Interior to prescribe upstream fish passage construction.

Pursuant to Section III, New England Power would implement a program of wildlife enhancements as detailed in response to the Commission staff's Additional Information Request No. 19, filed October 1, 1993, to protect and enhance the wildlife resources affected by the project. The program includes provisions for maintaining active beaver flowages; establishing nesting structures for a combination of wood ducks, black ducks, and

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<sup>10/</sup> The Deerfield No. 5 powerhouse discharges directly into the Fife Brook Impoundment, which is the lower reservoir for the Bear Swamp Project. Because of Bear Swamp's alternating pumping and generating operation, fluctuations in water levels in the Fife Brook Impoundment are dependent upon Bear Swamp's operations as well as the releases from the Deerfield No. 5 powerhouse.

ospreys; and constructing and maintaining loon nesting platforms.

C. Recreation and Aesthetic Issues

Under Section IV of the Settlement, New England Power would implement a comprehensive recreational plan 11/ to install, operate, and maintain existing and proposed recreational facilities, primarily for picnicking, boating, and hiking. New England Power would provide 50 weekend and 56 weekday whitewater releases annually from Fife Brook Dam, and 26 weekend or holiday, and six Friday releases annually from the Deerfield No. 5 dam, in accordance with the monthly schedule set forth in Appendix A to the Settlement.

Section IV also provides for New England Power to establish a Deerfield River Basin Environmental Enhancement Trust Fund (Fund), funded by the applicant, in the amount of \$100,000, to finance watershed conservation, development of low impact recreational and educational projects and facilities, and planning, design, maintenance and monitoring of such facilities and projects. The Fund would not be used to carry out the various obligations set forth in the other provisions of the Settlement.

D. Project Lands

Pursuant to Section V of the Settlement, New England Power agrees to grant conservation easements to qualified government or non-government land management organizations to provide for the continued preservation in a natural state of the lands within Project No. 2323 owned by New England Power in fee, and certain other non-project lands along the river downstream of Fife Brook Dam and the Deerfield No. 2 development owned by New England Power in fee. Those easements would run for the term of the new license. The conservation easements on non-project lands are conditioned on the Commission's approval that those lands be added to the project lands and be treated as land in utility use for accounting purposes in electric rate filings.

New England Power also agrees to grant a similar conservation easement for the lands within its Bear Swamp Project No. 2669 for the remaining term of the Bear Swamp license.

New England Power agrees to conduct its timber management programs in accordance with the guidelines attached as Appendix C

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11/ The plan was submitted to the Commission as part of Exhibit E of New England Power's application for new license and New England Power's October 1, 1993 Response to Additional Information Request No. 25 of the Commission staff.

to the Settlement, with the goals of protecting riparian zones along rivers and lakes, protecting visual quality within important public view sheds and along trail corridors, limiting use of clear cutting, minimizing interference with low impact recreational use and enjoyment, and preserving wildlife habitat.

E. Project Retirement

Under Section VI of the Settlement, New England Power agrees to perform a study, in consultation with the other parties to the Settlement, to identify and estimate the cost of various options for retirement of the project in the event of a surrender or implied surrender of the license, a denial by the Commission of a subsequent new license, permanent non-power operation, or partial or complete removal of the project. New England Power proposes to seek to recover in rate filings, after the study has been completed and submitted to the Commission for approval, expenditures (by the end of the license term) of sufficient funds to implement a project retirement plan.

F. Approval of Settlement and Post-Settlement Matters

Section VII is concerned with Commission approval of the Settlement, compliance with the terms and conditions of the Settlement, and reopener clauses.

The parties submitted the Settlement to the Commission with the express condition that the Commission approve and accept all provisions therein and issue a new license consistent with the terms of the Settlement. In the event that the Commission changes, conditions, or modifies any provision, either through its own action or through incorporation of conditions of a Section 401 water quality certification, Section VII provides that the Settlement shall be considered modified to conform to the Commission's order unless any party to the Settlement provides written notice to the other parties within 30 days of the Commission's action that it is withdrawing from the Settlement because of the modification, change, or condition. Upon such notification, the Settlement shall be deemed withdrawn.

In the event that the Commission issues a new license that does not include conditions consistent with the Trust Fund or the project lands Section V of the Settlement, New England Power agrees to comply with and implement the terms of those parts of the Settlement as long as it receives a new license for the project with operational terms and conditions and financial impacts consistent with the Settlement.

In the event that any dispute arises over compliance with the terms and conditions of the Settlement, the parties agree to

engage in good faith negotiations for a period of at least 60 days, if necessary, in an effort to resolve the dispute. If resolution cannot be reached, then the parties may refer the dispute to the Commission pursuant to the Commission's Rules of Practice and Procedure (18 C.F.R. Part 385).

The Settlement does not limit or restrict any party's authority to seek different or modified license conditions through a proceeding to reopen the license pursuant to the Commission's reserved authority. However, before any party asks the Commission to invoke any reopener clause, that party must request all parties to negotiate for a period of at least 90 days in an attempt to resolve the relevant issues.

#### V. APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10(a)(2)(C) and 15 of the FPA, <sup>12/</sup> we have evaluated New England Power's record as a licensee, with respect to the following areas: (A) consumption improvement program; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission service; (G) cost effectiveness of plans; and (H) actions affecting the public.

##### A. Consumption Improvement Program

Exhibit H of the New England Power application for the new license contains a detailed description of the load management and conservation programs undertaken since 1987. As of 1991, New England Power was pursuing about 13 different demand-side load management and conservation programs aimed towards its commercial, industrial and residential customers. New England Power has estimated that these programs and others will significantly affect future customer demand. It estimates that in the year 2000 these programs will reduce normal annual energy demand by 1,765 Gwh, the equivalent of about 6.4 percent. We conclude that New England Power has in place an adequate electricity consumption improvement program.

##### B. Compliance History and Ability to Comply with a New License

We have reviewed New England Power's license application in order to judge its ability to comply with the conditions of any license issued, and with applicable provisions of Part I of the FPA. We have also reviewed New England Power's record of

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<sup>12/</sup> 16 U.S.C. § 803(a)(2)(C) and 808(a).



compliance with Commission requirements under its prior license.

Our review shows that New England Power has a satisfactory record of filing submissions in a timely manner and of generally complying with the terms of its existing license. Therefore, we conclude that New England Power has acquired or can acquire the resources and expertise necessary to carry out its plans and to comply with all conditions of a new license and of orders issued thereunder.

C. Safe Management, Operation, and Maintenance of the Project

New England Power owns and operates the Deerfield River Project No. 2323. The project dams and appurtenant facilities are subject to Part 12 of the Commission's Regulations concerning project safety. We have reviewed New England Power's management, operation, and maintenance of the project pursuant to the requirements of Part 12 and the associated Engineering Guidelines, including all applicable safety requirements such as warning signs and boat barriers, Emergency Action Plan, and Independent Consultant's Safety Inspection Report. We conclude that the project is being safely managed, operated, and maintained.

D. Ability to Provide Efficient and Reliable Service

New England Power reports that it plans to operate and maintain the project to provide efficient and reliable service (if granted a new license) by operating the facility in the same manner as in the past. Coordination and management of generation dispatch of all the Deerfield River hydroelectric facilities (including the Deerfield River Project) is performed by the New England Power Exchange (NEPEX). NEPEX is a region wide electricity coordinating body which dispatches regional facilities in the manner that will provide regional consumers with the lowest cost capacity and energy. We conclude that New England Power's plans and abilities are adequate to operate and maintain the project in a manner that will continue to provide efficient and reliable electric service in the future.

E. Need for Power

The area served by New England Power, including its Deerfield River Project, is located in the New England Power Pool (NEPOOL) Sub-Region of the Northeast Power Coordinating Council (NPCC). NPCC annually forecasts electrical supply and demand in the nation and in the region for a ten-year period. These reports are mandated by the United States Department of Energy

(DOE) and are referred to as DOE Form OE 411 Reports.

NPCC's 1995 OE-411 Report forecasts a continued demand growth rate during the ten-year period in the NEPOOL area and little or no net resource additions, resulting in decreased reserve margins. The Deerfield River Project, which generates about 289 gigawatt-hours annually, is included in this forecast as part of the existing resource mix. The electricity generated from the project would benefit the region by providing a portion of the needed regional power.

We conclude that present and future use of the project's power, its displacement of non renewable fossil-fired generation, and its contribution to a diversified generation mix, support a finding that the power from the Deerfield River Project will help meet a need for power in the NEPOOL area in the short and long terms.

#### F. Transmission Services

The existing transmission services consist of lines from the respective powerhouses to New England Power's transmission system.

#### G. Cost Effectiveness of Plans

New England Power has no plans for additional facilities or project modifications, other than recreational and environmental enhancements. We conclude that the project, as presently configured and as operated according to this order consistent with environmental considerations, fully develops the economical hydropower potential of the site in a cost-effective manner.

#### H. Actions Affecting the Public

Environmental enhancement measures included in this license will result in beneficial changes to the environmental quality of the project area, including aquatic resources, and to public recreation.

### VI. WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA), <sup>13/</sup> an applicant for a federal license or permit to conduct any activity

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<sup>13/</sup> 33 U.S.C. § 1341(a)(1).

that may result in any discharge into navigable waters must obtain from the state in which the discharge originates certification that any such discharge will comply with applicable water quality standards. The Commission may therefore not issue a license for a hydropower project unless the relevant state agency either has issued a water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year.<sup>14/</sup>

The Massachusetts Department of Environmental Protection, on December 14, 1994, issued a Section 401 certification for the five developments located in Massachusetts.<sup>15/</sup> The certification contains eleven conditions, labeled A to K.

The Vermont ANR, on January 30, 1995, issued a water quality certification for the three developments located in Vermont.<sup>16/</sup> The certification contains conditions labeled A to X.

All the certification conditions are included in the new license, except for those discussed next, which we conclude are beyond the scope of CWA Section 401.

Condition I of the Massachusetts certification provides that any modification of project operation that would affect states' certification conditions must be approved by Massachusetts, and Condition J reserves Massachusetts' right to review, and modify if necessary, the certification conditions if the Vermont certification results in non-compliance with the Massachusetts certification. Similarly, Condition W of the Vermont certification provides that any changes to the project that would have a significant or material effect on the certification, must be submitted to Vermont ANR for prior review and approval. These conditions in effect give the respective states the opportunity to revisit their certifications. Section 401(a)(3) of the CWA sets out the exclusive manner in which state certifications may be modified and makes clear that the process is to be initiated by the federal licensing agency, not the state.<sup>17/</sup> Thus, the Commission determines whether proposed license amendments require new water quality certification.<sup>18/</sup> Massachusetts'

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<sup>14/</sup> Id.

<sup>15/</sup> See Appendix A to this order.

<sup>16/</sup> See Appendix B to this order.

<sup>17/</sup> See, e.g., Great Northern Paper, Inc., 77 FERC ¶ 61,068 at pp. 61,271-73 (1996).

<sup>18/</sup> The Commission's regulations, 18 C.F.R. § 4.38(7)(iii), provide that, if an

certification Conditions I and J and Vermont's certification Condition W are therefore beyond the scope of their authority under Section 401 and will not be included in the license.

Condition O provides that any proposals for project maintenance or repair work involving the river must be submitted to Vermont ANR for prior review and approval. Vermont ANR has no authority to halt or order maintenance and repair of the Deerfield Project. A certification becomes a license condition; once the license is issued, Section 401 gives the state no further role in the administration of the license. Condition O, which would give the state the ability to control the timing of activities under a federal license, is thus beyond the scope of Section 401 and will not become part of the license.

#### VII. SECTION 18 FISHWAY PRESCRIPTIONS

Section 18 of the FPA 19/ provides that the Commission shall require construction, operation, and maintenance by a licensee of such fishways as may be prescribed by the Secretary of Commerce or the Interior. Interior, on October 5, 1994, submitted the following measures under FPA Section 18, which are consistent with the fish passage measures agreed to in Section III.F. of the Settlement: permanent downstream fish passage measures at the Deerfield Nos. 2, 3 and 4 developments and upstream fish passage facilities at Deerfield No. 2, in accordance with plans filed by New England Power in its relicensing application. Interior further requests reservation of its authority to prescribe fishways in the future.

Aspects of Interior's prescription are beyond the scope of its authority under Section 18. 20/ We will, however, follow the recommendations of the EIS, and require the substance of the prescription, pursuant to our Section 10(a)(1) authority. Articles 408, 409, and 410 of the new license require New England Power to file plans for fish passage measures.

We recognize that future fish passage needs cannot always be determined at the time of project licensing. The Commission's

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applicant seeks to amend its application or license, it must make a new request for water quality certification if the amendment would have a material adverse impact on the discharge from the project.

19/ 16 U.S.C. § 811.

20/ Interior would require that the facilities be constructed and operational within two years of the issuance of the license. However, only the Commission has the authority to control the timing of activities under its license.

practice has been to include a license article that reserves the Secretary's authority to prescribe facilities for fish passage. 21/ Therefore, Article 407 reserves the Commission's authority to require fishways that the Secretary of the Interior may prescribe in the future.

#### VIII. RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES AND THE SECTION 10(J) PROCESS

Section 10(j)(1) of the FPA 22/ requires the Commission, when issuing a license, to include license conditions, based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, to "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project.

By letter of October 5, 1994, Massachusetts, on behalf of its Department of Environmental Management, Department of Environmental Protection, and Division of Fisheries and Wildlife and Environmental Law Enforcement, submitted, as Section 10(j) recommendations, the terms and conditions set forth in the Settlement. Interior's October 5, 1994 filing submits recommendations pursuant to Section 10(j) concerning minimum flows, reservoir levels, and conservation easements, which are consistent with Sections III and V of the Settlement. The license contains conditions consistent with those recommendations.

#### IX. OTHER AGENCY RECOMMENDATIONS

Massachusetts' October 5, 1994 letter also stated that its Section 10(a) recommendations are the terms and conditions set forth in the Settlement. Interior states that its Section 10(a) recommendations are the provisions of the Settlement relative to recreational facilities, whitewater boating releases, the establishment of an environmental enhancement fund, and provisions for the future decommissioning of the project. The license contains conditions consistent with those recommendations.

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21/ The Commission has specifically sanctioned the reservation of fishway prescription authority at relicensing. See Wisconsin Public Service Corporation, 62 FERC ¶ 61,095 (1993), aff'd, Wisconsin Public Service Corporation v. FERC, 32 F.3d 1165 (7th Cir. 1994).

22/ 16 U.S.C. § 803(j)(1)(A).

## X. COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. 23/ Of the comprehensive plans filed with the Commission, the Commission staff identified 18 plans (four in Massachusetts, ten in Vermont, and four federal plans) relevant to the hydroelectric projects on the Deerfield River and reviewed those plans. 24/

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23/ 16 U.S.C. § 803(a)(2). Comprehensive plans are defined at 18 C.F.R. § 2.19 (1996).

24/ The Massachusetts plans are: (1) Deerfield River comprehensive management plan, Franklin County Planning Department, June 1990; (2) Massachusetts outdoors for our common good: open space and outdoor recreation in Massachusetts, Massachusetts Department of Environmental Management, Division of Planning and Development, December 1988; (3) Connecticut River Basin water quality management plan, Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control, June 1983; and (4) Connecticut River Basin fish passage, flow, and habitat alteration considerations in relation to anadromous fish restoration, Technical Committee for Fisheries Management of the Connecticut River, October 1981.

The Vermont plans are: (1) The waterfalls, cascades, and gorges of Vermont, Jenkins, J. and P. Zika, Vermont Agency of Natural Resources, May 1986; (2) Vermont state comprehensive outdoor recreation plan, 1983-1988, Vermont Agency of Environmental Conservation, June 1983; (3) Vermont Rivers Study, Vermont Agency of Environmental Conservation, 1986; (4) Hydropower in Vermont: an assessment of environmental problems and opportunities, Vermont Agency of Natural Resources, Department of Environmental Conservation, May 1988; (5) Preliminary comprehensive rivers plan for the Deerfield River, Vermont: an inventory of uses, values, and goals, Vermont Agency of Natural Resources, Department of Environmental Conservation, Windham Regional Commission, July 1991; (6) Comprehensive river plan for the Deerfield River watershed, Vermont Department of Environmental Conservation, November 1992; (7) 1988 Vermont recreation plan, Vermont Agency of Natural Resources, Department of Forests, Parks and Recreation, 1988; (8) Wetlands component of the 1988 Vermont recreation plan, Vermont Agency of Natural Resources, Department of Forests, Parks and Recreation, Wetlands Steering Committee, July 1988; (9) Vermont's lake trout management plan for inland waters, Vermont Agency of Natural Resources, Department of Fish and Wildlife, May and July, 1990; and (10) A strategic plan for the restoration of Atlantic salmon to the Connecticut River Basin, Policy Committee for Fisheries Management of the Connecticut River, September 1982.

The federal plans are: (1) North American waterfowl management plan, U.S. Fish and Wildlife Service, May 1986; (2) Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service, U.S. Fish and Wildlife Service, undated;

The Commission staff also reviewed another plan that addresses resource concerns for the area but is not designated as a Commission approved comprehensive plan.<sup>25</sup> / The project does not conflict with any of these plans.

#### XI. COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, respectively, require the Commission, in acting on applications for license, to give equal consideration to the power and 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; and require that 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.

The project as proposed in the Settlement, and based on current economic conditions without future escalation or inflation, would cost about \$10,871,000 annually (42.8 mills/kWh) and would produce about 254.0 GWh of energy annually having a current value of about \$13,002,000 (51.2 mills/kWh) for a current net annual power benefit of about \$2,131,000 (8.4 mills/kWh). As licensed with the added requirements of the two state water quality certifications and our recommendations, the project will produce about 247.8 GWh of energy annually, at a current net annual benefit of about \$1,898,000.

The EIS analyzed the effects associated with the issuance of a new license for the Deerfield Project and recommends a variety of measures to protect and enhance the environment resources, which, as discussed above, we adopt.

#### XII. DISCUSSION

##### A. The Settlement Generally

It has long been recognized that an agency's authority to

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(3) Final environmental impact statement - restoration of Atlantic salmon to New England rivers, Department of the Interior, May 1989; and (4) The Nationwide rivers inventory, National Park Service, January 1982.

<sup>25</sup>/ Green Mountain National Forest Land and Resource Management Plan, U.S. Forest Service 1986.

approve settlements is an essential regulatory tool, 26/ and that the wide discretion afforded in this area is supported by the broad public interest favoring the settlement of complex matters. 27/ Settlement procedures provide the opportunity to eliminate the need for more lengthy proceedings, either formal or informal, when the parties reach an agreement on the issues and if that agreement is compatible with the public interest. 28/

If a proposed settlement is uncontested by the parties to the proceeding, it may be approved by the Commission upon a finding that the settlement appears to be fair and reasonable and in the public interest. 29/ The Commission's finding in this regard must be based on its independent determination that the settlement merits approval, regardless of whether support or opposition to the settlement has been expressed. 30/

In considering a settlement proposal, the Commission's decision may impose such terms as it deems fair from the evidence before it. 31/ The Commission may determine that modification or total rejection of the settlement proposal is appropriate. In the instant proceeding, the Settlement specifies that if the Commission issues orders "accepting the Settlement with modifications or conditions," the Settlement would automatically be modified to conform to the terms of the orders unless at least one party objects. Thus, the parties understood that the Commission may adopt those provisions of the Settlement it finds appropriate and modify or reject those which the Commission believes conflict with the public interest.

#### B. Environmental Analysis

The environmental analysis of New England Power's license

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26/ Pennsylvania Gas & Water Co. v. FPC, 463 F.2d 1242, 1246 (D.C. Cir. 1972).

27/ Southern Union Gas Co. v. FERC, 840 F.2d 964, 971 (D.C. Cir. 1988).

28/ Pennsylvania, 463 F.2d at 1247.

29/ 18 C.F.R. § 385.602 (g) (3). See also City of Seattle, Washington, 71 FERC ¶ 61,159 (1995), reh'g 75 FERC ¶ 61,319 (1996); Consumers Power Company, 68 FERC ¶ 61,077 (1994); Public Utility District No. 2 of Grant County, Washington, et al., 45 FERC ¶ 61,401 (1988); Long Lake Energy Corporation, 34 FERC ¶ 61,225 (1986).

30/ Michigan Consolidated Gas Co. v. FPC, supra, 283 F.2d at 224 266. See also Mobil Oil Corporation v. FPC, 427 U.S. 283 (1973).

31/ Consolidated Gas Supply v. FERC, 606 F.2d 323, 330 (1979).



application, as amended by the Settlement, included an examination of water quality, the maintenance of minimum flows, fisheries and fish passage, vegetation and wildlife, geological resources, visual resources, cultural resources, aesthetic resources, and recreation.

New England Power's proposed project conditions will have many beneficial effects. The minimum flows provided in the nearly 12 miles of bypassed reaches of the project will improve the fisheries. Fish passage facilities will be installed at certain developments. Recreational enhancements, including whitewater releases and improved facilities, will be developed to better serve the public.

#### C. Land Management

In Section V of the Settlement, New England Power proposed to grant conservation easements to qualified government or non-government land management organizations to provide for continued preservation in a natural state of lands within the project owned by New England Power, 32/ and certain non-project lands owned by New England Power located downriver of Fife Brook Dam and the Deerfield No. 2 development and along the river corridor. The grant of conservation easements on the non-project lands is conditioned on the Commission's adding those lands to the project lands and treating such as Land in Utility Use for accounting purposes in electric rates proceedings. Article 427 provides for the requested conservation easements, all of which are to be included within the project boundary.

#### D. Enhancement Fund

In Section IV.C of the Settlement, New England Power agrees to establish the Deerfield River Basin Environmental Enhancement Trust Fund (Fund) in the amount of \$100,000, to finance its development, maintenance, and monitoring of watershed conservation and low impact recreational and educational projects and facilities. 33/ The Fund will be administered by a three-member committee, which will decide the appropriate distribution

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32/ See Niagara Mohawk Power Corporation, 76 FERC ¶ 61,152 (1996) at p. 61,833. New England Power is required, under the terms of Articles 5 and 430 of the new license we issue today, to obtain prior Commission approval for the conveyance of certain interests in project property. Thus, prior to making the conveyances required by the Settlement, New England Power must obtain Commission approval of the transfer instruments.

33/ New England Power requested that the new license include all provisions of the Settlement, including the Fund. See pages 21 and 22 of the Settlement.

of available money each year. The committee will consist of representatives from New England Power, Vermont ANR, and Massachusetts.

The committee will annually submit to the Commission for approval a list of activities selected for funding. Eligible fund recipients include non-profit organizations, educational institutions, and units of government within Vermont and Massachusetts. To be eligible for funding, a proposed activity must provide a clear public benefit and contribute to the goals of enhancing low-impact recreational, environmental education, or environmental protection opportunities directly related to the Deerfield River watershed, and must be located within the Deerfield River Basin or in towns with some portion falling within the basin.

Article 429 provides for the establishment of the requested Fund.

#### E. Project Retirement

New England Power agrees, as part of the Settlement, to perform a study, in consultation with the other parties to the Settlement, to identify and estimate the cost of various options for retirement of the project in the event of a surrender or implied surrender of the license, a denial by the Commission of a subsequent new license, permanent non-power operation, or partial or complete removal of the project. The project retirement options will be developed in conjunction with an independent licensed professional engineer approved by the Commission.

New England Power will submit the results of the study to the Commission and the parties to the Settlement for comment, and seek from the Commission approval of the most appropriate likely option for eventual retirement (the "Project Retirement Plan"). New England Power proposes to seek to recover in rate filings with the Commission the appropriate amounts during the remaining license term, to accumulate by the end of the new license term sufficient funds to implement project retirement under the approved plan. License Article 204 implements the project retirement provisions described above. The Commission will accept the approach outlined in the Settlement, as a preliminary step toward the eventual goal of establishing a trust fund to be used for project retirement by New England Power, subject to the same general directions we gave in Consumers Power regarding establishment and implementation of trust funds under this Commission's jurisdiction. 34/

34/ See our discussion of project retirement funds in Consumers Power Company, 68 FERC ¶ 61,077 at pp. 61,380-83 (1994).

## XIII. REQUEST FOR STAY OF THE LICENSE

New England Power submitted on August 14, 1996, a request to defer relicensing action by the Commission, based on uncertainty regarding provisions of the Settlement that allow any party to void the Settlement if the water quality certification issued by either state results in license terms inconsistent with the Settlement. Vermont NRC had filed an appeal of the Vermont certification, challenging findings, conclusions, and conditions contained in the certification; New England Power had also filed an appeal of the Vermont certification.

On February 24, 1997, New England Power, Vermont NRC and the Vermont Agency of Natural Resources jointly filed a motion to dismiss the appeals of the water quality certification. The Vermont Water Resources Board granted the motion on March 17, 1997. Accordingly, we conclude that New England Power's request to defer action on its application for a new license is moot.

## XIV. LICENSE TERM

Pursuant to Section 15(e) of the FPA, 35/ relicense terms shall be not less than 30 years nor more than 50 years. According to the Settlement filed in this proceeding, the parties contemplate a 40-year license for the Deerfield River Project. Because the term of the new license was an important element in the negotiations which led to the Settlement, and because New England Power is proposing substantial environmental enhancement measures for the Deerfield River Project, we will issue the license for a 40-year term.

## XV. SUMMARY

The EIS issued for this project includes background information, analysis of impacts, and support for related license articles. The design of this project is consistent with engineering safety standards. The project will be safe if operated and maintained in accordance with the requirements of this license. We provide analysis of related issues in the Safety and Design Assessment prepared for this project.

The Commission orders:

(A) This license is issued to the New England Power Company

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35/ 16 U.S.C. § 808(e).

(New England Power or Licensee) for a period of 40 years, effective the first day of the month in which it is issued, to operate and maintain the Deerfield River Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of New England Power's interests in those lands, as shown on Exhibits K-2 through K-8 (Sheet 2) (FERC Drawing Numbers 2323-2033 through 2323-2043) of the application.

<u>Exhibit G</u>	<u>FERC No.</u>	<u>Showing</u>
K-2	2323-2033	Index Map
K(1)-2	2323-2034	Deerfield No.2 Project Map
K(2)-2	2323-2035	Deerfield No.3 Project Map
K(3)-2	2323-2036	Deerfield No.4 Project Map
K(4)-2	2323-2037	Deerfield No.5 Project Map
K(5)-2	2323-2038	Sherman Project Map
K(6)-2 Sheet 1 of 2	2323-2039	Harriman Project Map
K(6)-2 Sheet 2 of 2	2323-2040	Harriman Project Map
K(7)-2	2323-2041	Searsburg Project Map
K(8)-2 Sheet 1 of 2	2323-2042	Somerset Project Map
K(8)-2 Sheet 2 of 2	2323-2043	Somerset Project Map

(2) Project works of the Deerfield project consists of eight developments as follows:

Somerset consists of: (1) an earthfill dam structure about 110 feet high and 2,101 feet long with a crest elevation of 2133.58 feet (MSL); (2) main outlet works located at the eastern end of the dam which consists of two gated, 48 inch diameter

pipes that are used to control reservoir discharge; (3) a side channel spillway, about 800 feet long, 45 feet wide, and from six to 30 feet deep, located at the western end of the dam with a crest elevation of 2133.58 feet mean sea level (MSL); (4) an impoundment, about 5.6 miles long, with a gross surface area of about 1,514 acres (AC), a gross storage capacity of 57,345 acre-feet (AF), a usable storage capacity of 20,614 AF, and a normal pool headwater elevation range of 2,113.10 to 2,128.10 feet msl.

Searsburg consists of: (1) a earthfill dam structure about 50 feet high and 475 feet long with a 137 foot long concrete gravity spillway, with a crest elevation of 1749.66 feet msl, topped with 5-foot flashboards (from May 1 to October 31); (2) an intake and penstock with (a) a woodstave conduit 8 feet in diameter and 18,412 feet long, (b) a steel differential surge tank 50 feet in diameter and 34 feet high, and (c) a steel penstock 6.5 feet in diameter and 495 feet long; (3) a powerhouse containing one vertical Francis turbine unit with a capacity of 4,160 kilowatts (KW); (4) an impoundment, about 0.9 miles long, with a surface area of about 30 AC, a gross storage capacity of 412 AF, a usable storage capacity range of 67 to 197 AF, and a normal pool elevation range of 1746.66 to 175.66 feet msl; and (5) appurtenant facilities.

Harriman consists of: (1) an earthfill dam 215.5 feet high and 1,250 feet long; (2) a storage reservoir, nine miles long, having a surface area of about 2,039 AC, a gross storage capacity of 117,300 AF, a usable storage capacity of 103,375 AF (from elevation 1405.66 to 1491.66 feet msl), and a normal pool headwater elevation of 1449.70 to 1491.66 feet msl; (3) morning glory spillway, with sixteen gates, at a sill elevation of 1491.66 msl, topped with six-foot-high flashboards; (4) two eight foot diameter valves, a 12,812 foot long, 14-foot-diameter concrete lined horseshoe shaped intake tunnel, a steel differential surge tank 34 feet in diameter and 184 feet high, and three steel penstocks nine feet in diameter and 620 feet long; (5) a powerhouse containing three vertical Francis turbine units with a total hydraulic capacity of 1,600 cfs, and a capacity of 11,200 KW each; and (6) appurtenant facilities.

Sherman consists of: (1) a 110-foot-high 810-foot-long earthfill dam, with a crest elevation of 1129.66 feet msl; (2) a 179-foot-long concrete gravity spillway, with a crest elevation of 1103.66 feet msl, topped with four-foot-high flashboards which operate year-round; (3) a concrete and brick intake structure and penstock which conveys water to the powerhouse via a concrete conduit 98 feet in length with a cross-sectional area of 142 square feet, and a steel penstock 13 feet in diameter and 227 feet long; (4) an impoundment, about two miles long, with surface

area of about 218 AC, gross storage capacity of 3,593 AF, useable storage capacity of 1,359 AF, and a normal pool headwater elevation range of 1104.66 to 1107.66 feet msl; (5) a powerhouse containing one vertical Francis turbine unit with a capacity of 7,200 kW; and (6) appurtenant facilities.

Deerfield No. 5 consists of: (1) the Deerfield No. 5 Dam, comprised of a concrete gravity spillway about 35 feet high and 90 feet long, with a top elevation of 1,109.66 feet msl, topped with eight foot-high hydraulic steel flap gates which maintain a normal reservoir elevation of 1027.66 feet msl, a concrete intake structure, consisting of two eight-foot wide by 7.75-foot-high sluice gates, with a sill elevation of 1002.28 feet msl, and a single 12.5 foot by 13-foot intake gate with a sill elevation of 1008.16 msl; (2) a small concrete gravity diversion structure on Dunbar Brook approximately 12 feet high and 160 feet long; (3) conveyance sections of tunnel, concrete conduit, and canal totaling 14,941 feet; (4) a steel penstock ten feet in diameter and 400 feet long; (5) an impoundment about 0.75 miles long, having a surface area of about 38 AC, a storage capacity of 118 AF, and a normal pool headwater elevation range of 1022.66 to 1026.66 feet msl; (6) a powerhouse containing one vertical Francis turbine unit with a capacity of 17,550 KW and a hydraulic capacity of 1,250 cfs; (7) a switchyard located on River Road across from the Bear Swamp Visitor's Center; and (8) appurtenant facilities.

Deerfield No. 4 consists of: (1) an earthfill dam (with a concrete core) about 50 feet high and 160 feet long; (2) a 241-foot-long concrete gravity spillway with a crest elevation of 465.66 feet msl, topped with six eight-foot-high wooden flashboards; and (3) three sluice gates located in the east abutment, two with a sill elevation of 462.66 feet msl and another with a sill elevation of 464.66 feet msl; (4) an impoundment about two miles long, having a surface area of about 75 AC, a gross storage capacity of 467 AF, and a usable storage capacity of 432 AF, and a normal pool headwater elevation range of 465.66 to 473.66 feet msl; (5) a power tunnel which conveys water from the intake structure at the impoundment via a 12.5-foot diameter, 1,514 foot-long concrete and brick-lined horseshoe shaped tunnel that leads to the powerhouse forebay; (6) a powerhouse containing three horizontal Francis turbine units with a capacity of 1,600 KW each, and a hydraulic capacity of 1,490 cfs; and (7) appurtenant facilities.

Deerfield No. 3 consists of: (1) a concrete gravity spillway about 15 feet high and 475 feet long with a crest elevation of 396.66 feet msl, topped with six foot-high wooden flashboards; (2) two sluice gates; (3) a power tunnel 677 feet long, 17 feet wide by 12.5 high concrete conduit; (4) an

impoundment about 1.3 miles long, having a surface area of about 42 AC, a gross storage capacity of 221 AF, a usable storage capacity of 200 AF and a normal pool headwater elevation range of 396.66 to 402.66 feet msl; (5) a powerhouse containing three horizontal Francis turbine units with a capacity of 1,600 KW each and a hydraulic capacity of 1490 cfs; (6) a switchyard located within the powerhouse; and (7) appurtenant facilities.

Deerfield No. 2 consists of: (1) a concrete gravity spillway about 70 feet high and 447 feet long, with a top elevation of 284.66 feet msl, topped with six foot-high wooden flashboards and four sluice gates; (2) an impoundment about 1.5 miles long, with a surface area of about 63.5 AC, a gross storage capacity of 350 AF, a usable storage capacity of 300 AF, and a normal pool headwater elevation range of 284.66 to 290.66 feet msl; (3) a powerhouse located adjacent to the Deerfield No. 2 Dam, containing three horizontal Francis turbine units with a capacity of 1,600 KW each and a hydraulic capacity of 1450 cfs; (4) a switchyard located within the powerhouse; and (5) appurtenant facilities.

The project works generally described above are more specifically shown and described by Exhibits A and F.

Exhibit A: The following sections of Exhibit A filed December 27, 1991:

<u>Exhibit A Table</u>	<u>Description</u>
A-1	Searsburg Project Data
A-2	Harriman Project Data
A-3	Sherman Project Data
A-4	Deerfield No. 5 Project Data
A-5	Deerfield No. 4 Project Data
A-6	Deerfield No. 3 Project Data
A-7	Deerfield No. 2 Project Data

Exhibit F: The following Exhibit F drawings filed December 27, 1991:

<u>Exhibit F Drawing</u>	<u>FERC No.</u>	<u>Description</u>
F(1) Sheet 1	2323 2001	Deerfield No. 2 General Layout

F(1) Sheet 2	2323 2002	Deerfield No. 2 Dam and Powerhouse Plan & Elev.
F(1) Sheet 3	2323 2003	Deerfield No. 2 Gate & Powerhouse Sections
F(2) Sheet 1	2323 2004	Deerfield No. 3 General Layout
F(2) Sheet 2	2323 2005	Deerfield No. 3 Plan of Dam & Conduit Structures
F(2) Sheet 3	2323 2006	Deerfield No. 3 Sections of Dam & Conduit
F(2) Sheet 4	2323 2007	Deerfield No. 3 Sections of Intake & Powerhouse
F(3) Sheet 1	2323 2008	Deerfield No. 4 General Layout
F(3) Sheet 2	2323 2009	Deerfield No. 4 Plan of Dam, Tunnel & Forebay
F(3) Sheet 3	2323 2010	Deerfield No. 4 Sections of Dam, Gate & Tunnel
F(3) Sheet 4	2323 2011	Deerfield No. 4 Section of Intake & Powerhouse
F(4) Sheet 1	2323 2012	Deerfield No. 5 General Layout
F(4) Sheet 2	2323 2013	Deerfield No. 5 Dam & Intake Plan & Sections
F(4) Sheet 3	2323 2014	Deerfield No. 5 Intake- Powerhouse Plan & Sect.
F(4) Sheet 4	2323 2015	Deerfield No. 5 Sections of Powerhouse
F(5) Sheet 1	2323 2016	Sherman General Layout
F(5) Sheet 2	2323 2017	Sherman Sections of Dam & Spillway
F(5) Sheet 3	2323 2018	Sherman Cross Sections of Spillway Channel



F(5) Sheet 4	2323	2019	Sherman Sections of Intake & Powerhouse
F(6) Sheet 1	2323	2020	Harriman General Layout
F(6) Sheet 2	2323	2021	Harriman Dam Embankment
F(6) Sheet 3	2323	2022	Harriman Spillway Plan & Sections
F(6) Sheet 4	2323	2023	Harriman Intake Plan & Sections
F(6) Sheet 5	2323	2024	Harriman Powerhouse & Vicinity Plan
F(6) Sheet 6	2323	2025	Harriman Powerhouse Plan & Section
F(7) Sheet 1	2323	2026	Searsburg General Layout
F(7) Sheet 2	2323	2027	Searsburg Dam Plan & Section
F(7) Sheet 3	2323	2028	Searsburg Intake & Spillway Sections
F(7) Sheet 4	2323	2029	Searsburg Surge Tank & Powerhouse
F(8) Sheet 1	2323	2030	Somerset Dam & Spillway Plan & Sections
F(8) Sheet 2	2323	2031	Somerset Control Works Plan & Sections
F(8) Sheet 3	2323	2032	Somerset Spillway Channel Plan & Profile

(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 located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F, and G of the license application 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 purposes of reimbursing the United States for costs of administering 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 76,900 kilowatts.

Article 202. 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.

Article 203. Pursuant to Section 10(d) of the FPA, 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 reserved 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 includible 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 204. Within 30 months from the date of issuance of this license, the Licensee shall begin consultations with all parties to the Offer of Settlement dated October 5, 1994, including the U.S. Fish and Wildlife Service, Vermont Agency of Natural Resources, the Massachusetts Division of Fisheries and Wildlife, and the general public on a plan for studying the costs that would be associated with potential retirement of the project. The consultation shall include a transcribed public meeting to discuss the retirement options for the project.

Within six months after consultation begins, the Licensee shall submit to the Commission a study plan. The Licensee shall allow a minimum of 45 days for the consulted entities and general public to comment and to make recommendations before filing the study plan with the Commission. If the Licensee does not adopt a recommendation made by a consulting entity or the public, the filing shall include the Licensee's reasons, based on project-specific information. The Commission shall conduct such proceedings on the study plan as it deems appropriate.

At a minimum, the study plan shall describe the proposed scope of the study, including the retirement option or options to be examined, why they were selected, and what actions would be involved under each option. The plan shall also contain an assessment of the likelihood of project retirement at or before the end of the license term. The Commission may require that further information be submitted as part of the study plan and may direct changes in the plan submitted by the Licensee. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission.

Within 24 months after Commission approval of the study plan, the Licensee shall file with the Commission a study report documenting the results of the study. When the study report is submitted to the Commission, copies shall also be served on all consulted entities, and copies shall be made available to the public in the Licensee's public files at each project development and at a public library in the county or counties in which the project is located. Following receipt of the study report, and

after public notice and opportunity for hearing, the Commission may issue such orders with respect to project retirement and financing as it deems appropriate. When the Licensee files the study report, the Licensee shall also submit a plan for funding any retirement costs. If the Licensee contemplates collection of monies from ratepayers to be deposited in a trust, it shall also submit a proposed trust agreement which shall be consistent with then-prevailing Commission practice governing nuclear decommissioning trust agreements or other analogous situations. The Commission reserves the right to direct such changes as it deems appropriate.

Article 401. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan and schedule for operating the gates of the Deerfield Project's Somerset dam to manage water levels in the Somerset reservoir from May 1 to July 31. The purpose of the plan is to ensure that water levels in the reservoir protect nesting common loons, as described in Article 406.

The plan shall include a schedule for: (1) implementing the plan to ensure it is operational no later than the first common loon nesting season following the date of issuance of this license; (2) consulting with the resource agencies specified below concerning the development and implementation of the plan; (3) agency comments, and the Licensee's response to agency comments on the plan; (4) automating the gates with the goal of having fully automated gates no later than December 31, 1998; and (5) operating the gates manually, on an interim basis until the gates are fully automated.

The Licensee shall prepare the plan after consultation with the Vermont Agency of Natural Resources, the Vermont Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The Licensee shall include with the 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 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 Somerset Gate Operations Plan, including any changes required by the Commission.

Article 402. Within 180 days from the issuance of this license, the Licensee shall file a plan to monitor gate operations at Somerset dam as required by Article 401, above. The purpose of this monitoring plan is to ensure the dam gates, whether manually or automatically operated, would adequately maintain water levels in the Somerset reservoir to protect nesting common loons.

The monitoring plan shall include: (1) a schedule for implementing the plan; (2) a schedule for consulting with the resource agencies specified below concerning the results of the monitoring; (3) the performance expectations for the equipment to be used under the proposed operating methods (including use of manual and automatic gates); (4) transmitting real time data to the Harriman station to enable operators to make gate adjustments needed to meet common loon nesting requirements at the Somerset reservoir; (5) reporting hourly stage and outflow data collected every two weeks from the Somerset reservoir from April 1 through July 31 to the consulted parties within 10 days from the conclusion of the two week data collection cycle; (6) explaining how any inconsistencies in meeting the water level requirements of Article 406 would be accommodated by gate operations or any alternative operating measures; and (7) filing the plan, including the results, agency comments, and Licensee's response to agency comments, with the Commission.

The Licensee shall prepare the plan after consultation with the Vermont Agency of Natural Resources, the Vermont Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. 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 Somerset Gate Operations Monitoring Plan, including any changes required by the Commission. If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases or gate operations, are necessary to protect common loon nesting, the Commission may direct the Licensee to modify project structures or operations.

Article 403. The Licensee shall operate the Deerfield

Project's Somerset development in such a manner as to ensure the following limits on the maximum change in river flows (ramping rate) for the protection of fish resources in the Deerfield River:

From August 1 to April 30, the rate for increasing river flows (upramping) shall be 100 cubic feet per second (cfs) or less over 24 hours; the rate for decreasing river flows shall be 50 cfs or less over 24 hours. The 100 cfs upramping requirement may be suspended as necessary to lower the reservoir to meet the common loon nesting target elevation by May 1 as required by Article 406.

Article 404. Within 180 days from the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to monitor the effectiveness of Somerset ramping rates required in Article 403, to ensure protection of fishery resources of the Deerfield River.

The monitoring plan shall include a schedule for:  
(1) implementing the plan; (2) consulting with the resource agencies specified below concerning the results of the monitoring; and (3) filing the plan, including the results, agency comments, and Licensee's response to agency comments, with the Commission.

The Licensee shall prepare the monitoring plan after consultation with the Vermont Agency of Natural Resources, the Vermont Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. The Licensee shall include with the plan: any recommended alternative ramping rates based on biological information resulting from the monitoring; documentation of consultation, including copies of comments and recommendations on the completed monitoring 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. If the results of the monitoring indicate that changes in project structures or operations, including alternative ramping rates, are necessary to protect fish resources, the Commission may direct the Licensee to modify project structures, operations, or ramping rates.

Article 405. The Licensee shall release from the Deerfield Project the following minimum flows from the respective project developments, for the protection of fish and aquatic resources in the affected stream reaches of the Deerfield River:

(a) Somerset. Minimum flows shall be released from reservoir storage through the gatehouse and main outlet works as follows: 30 cubic feet per second (cfs) from October 1 to December 15; 48 cfs from December 16 to the last day in February; 30 cfs from March 1 to April 30; and 12 cfs from May 1 to September 30. From May 1 to July 31, the minimum flow may be reduced to 9 cfs, if necessary, to maintain reservoir elevations required in Article 406. The maximum gate release from Somerset shall be 312 cfs, or instantaneous inflow, if higher.

(b) Searsburg. Minimum flows shall be released from the dam as follows: 35 cfs or inflow, whichever is less, from June 1 to September 30; and 55 cfs or inflow, whichever is less, from October 1 to May 31. In addition, a minimum flow of 175 cfs shall be released from the powerhouse from April 20 to May 15 to protect smelt spawning.

The Licensee shall modify the minimum flows from the Searsburg development during periods when low flows to the Searsburg impoundment occur during flashboard reinstallation, or when special maintenance operations require a drawdown of the impoundment. Under those conditions, up to ten percent of the instantaneous inflow to the impoundment shall be placed in storage and the downstream minimum flow shall also be reduced by an equivalent adjustment, not to exceed ten percent.

(c) Harriman. Minimum flows shall be released from reservoir storage from the dam as follows: 70 cfs from October 1 to June 30 and 57 cfs from July 1 to September 30.

(d) Deerfield No. 5. A minimum flow of 73 cfs or inflow, whichever is less, shall be released from the dam. At no time shall the inflow be less than the 57 cfs minimum flow released from the upstream Harriman dam as specified in Article 405 (c).

(e) Deerfield No. 4. Minimum flows shall be released from the dam as follows: 100 cfs or inflow, whichever is less, from October 1 to May 31; and 125 cfs or inflow, whichever is less, from June 1 to September 30.

(f) Deerfield No. 3. A minimum flow of 100 cfs or inflow, whichever is less, shall be released year round from the dam.

(g) Deerfield No. 2. A minimum flow of 200 cfs year round shall

be released from reservoir storage from the dam.

These flows for the Deerfield Project 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 Vermont Department of Fish and Wildlife and the Massachusetts Division of Fisheries and Wildlife. If the flows are so modified, the Licensee shall notify the Commission as soon as possible, but not later than ten days after each such incident.

Article 406. The Licensee shall operate the Deerfield Project so that under normal operating conditions, the Somerset, Searsburg, and Harriman reservoirs shall be maintained at the following reservoir elevations:

(a) Somerset. Reservoir levels during the summer/fall maximum drawdown period, from August 1 to November 1, shall not fall below 2,120 feet mean sea level (msl), in order to protect open-water recreational use in the reservoir. The maximum annual winter drawdown, from November 2 to April 30, shall not fall below 2,107 feet msl in order to protect fish and aquatic resources in the reservoir.

The Licensee shall limit the impoundment fluctuations at the Somerset reservoir to +/- 3 inches from May 1 through July 31 each year to facilitate common loon nesting. The reservoir shall not be drawn down below the target elevation of 2128.58 feet msl.

(b) Searsburg. Reservoir levels during the summer/fall period, from May 1 to October 31, shall not be drawn down below 3 feet below the crest of the dam or below elevation 1,749.66 ft. msl, nor shall the maximum reservoir level exceed the top of the six-foot-high flashboards at 1,755.66 feet msl. From November 1 to April 30 the reservoir level shall not be drawn down below elevation 1,746.66 feet msl, in order to protect fishery resources in the reservoir.

(c) Harriman. Reservoir levels during the summer/fall maximum drawdown period, from April 1 to November 1, shall not fall below 1,475 feet msl to protect open water recreational use. The maximum annual winter drawdown, from November 2 to March 31, shall not be below 1,440 feet msl to protect fish and aquatic resources in the reservoir.

The Licensee shall maintain rising or stable water levels in the Harriman reservoir between April 1 and June 15 to protect fishery resources. The Licensee shall not exceed a maximum drawdown rate of one foot per day between June 16 and July 15.



Reservoir levels may be temporarily modified if required by operating emergencies beyond the control of the Licensee or for short periods for project maintenance purposes, upon mutual agreement between the Licensee and the Vermont Department of Fish and Wildlife. If the reservoir levels are so modified, the Licensee shall notify the Commission as soon as possible, but not later than ten days after each such incident.

Article 407. 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 U.S. Department of the Interior.

Article 408. Within 120 days from the date of issuance of this license, and 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 facilities for the downstream passage of Atlantic salmon smolts at the Deerfield Project development Nos. 2, 3, and 4, as depicted in plan nos. H64755-P, H64757-P, and H64758-P of the license application, and as described in the Offer of Settlement dated October 5, 1994, together with a plan and schedule to construct and install the facilities.

The plan shall include quantification of flows required to operate the proposed facility, an operation and maintenance schedule, measures to control erosion and sedimentation during project construction, and a construction schedule for installation of the fish passage facilities, with a target date that the facilities be operational within two years from the date of the issuance of this license. Once constructed, the Licensee shall operate the downstream fish passage facilities from April 1 through June 15 and from September 15 to November 15 each year. The Licensee shall provide as-built drawings to the U.S. Fish and Wildlife Service within 180 days from the construction of the downstream fish passage facilities.

The Licensee shall prepare the aforementioned drawings and schedule after consultation with the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife.

The Licensee shall include with the drawings documentation of consultation, copies of comments and recommendations on the drawings and schedule after they have been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the Licensee's facilities. The Licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the drawings and schedule 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 proposed facilities and schedule. Upon Commission approval, the Licensee shall implement the downstream fish passage plan and schedule, including any changes required by the Commission.

Article 409. The Licensee shall file, for Commission approval, a plan for the construction, operation, and maintenance of a permanent upstream fish passage facility at the Deerfield No. 2 development, as depicted in plan No. H-64756 P of the license application, and as described in the Offer of Settlement dated October 6, 1994, in order to provide upstream passage for adult Atlantic salmon returning to the Deerfield River.

The timing of the plan for construction of the upstream fish passage facility shall be based on a specific number of migratory adult fish (referred to as trigger numbers) reaching the Deerfield No. 2 dam: twelve adult Atlantic salmon present below the No. 2 dam for each of two consecutive years, as verified by an interim fish trapping system; or the presence of four adult Atlantic salmon below the dam for each of two consecutive years as determined by the radio-tagging monitoring program required in Article 413. If such numbers of migratory salmon are found, the Licensee must complete construction of the upstream fish passage facilities within two construction seasons following the attainment of the trigger numbers. The plan should provide for measures to control erosion and sedimentation during project construction. Once constructed, the upstream fish passage facility shall be operated according to a schedule established by the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife. The Licensee shall provide as-built drawings to the U.S. Fish and Wildlife Service within 90 days of constructing the upstream fish passage facility.

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

Article 410. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to capture and transport migrating Atlantic Salmon adults reaching the Deerfield Project No. 2 development dam to river reaches above the dam or to hatchery facilities. The passage plan shall describe the interim use of fish capture and transport measures that shall be utilized until the permanent upstream fish passage facilities required in Article 409 are completed and shall meet the requirements of establishing an interim fish passagesystem agreed to in the Offer of Settlement

dated October 6, 1994.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the Licensee shall implement the interim fish transport plan, including any changes required by the Commission.

Article 411. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to monitor the effectiveness of the upstream and downstream fish passage facilities and associated operational flows to pass Atlantic salmon smolts down the Deerfield River past development Nos. 4, 3, and 2 and to pass adult Atlantic salmon upstream past the No. 2 development.

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 facilities. The monitoring plan shall also include a schedule for: (1) implementing the plan; (2) consulting with the resource agencies specified below 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 comments, and the Licensee's responses to agency comments with the Commission.

The Licensee shall prepare the monitoring plan after consultation with the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife. 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 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 and alternative flow releases, are necessary to protect fish resources, the Commission may direct the Licensee to modify project structures or operations.

Article 412. The Licensee shall operate the Deerfield No. 2 development such that the changes from the 200 cubic feet per second (cfs) minimum flow required in Article 405(g) to generation flows, occur on average no more than two times per day and not more than ten times per week as described in the Offer of Settlement dated October 6, 1994, in order to reduce the effects of rapidly changing flows on fish resources of the Deerfield River.

The Licensee shall, within 180 days from the date of the issuance of this license, file for Commission approval a plan to monitor project operation and minimum flows for 36 months as described above. The monitoring plan shall include a schedule for: (1) implementing the plan; (2) annually making monitoring data available to parties to the Offer of Settlement; (3) annually consulting with the resources agencies specified below, and other parties to the Offer of Settlement, concerning the results of the monitoring; and (4) filing the results, agency and party comments, and the Licensee's response to agency and party comments with the Commission.

The Licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife. 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 Monitoring Plan, including any changes required by the Commission.

If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases or rates of flow releases, are necessary to protect fish resources, the Commission may direct the Licensee to modify project structures or operations, including peaking operations, or rate of flow releases.

Article 413. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, an Atlantic salmon radio-tagging plan. Implementation of the tagging plan will help determine when the numbers of

Atlantic salmon reaching the Deerfield No. 2 development would trigger a requirement that the Licensee install the permanent upstream fish passage facilities required in Articles 409 and 410.

Atlantic salmon shall be radio tagged and released at the Holyoke Dam Fishway during the first migration season following the issuance of this license and shall continue to be tagged annually until: (1) twelve adult Atlantic salmon have been verified below the Deerfield No. 2 dam in each of two consecutive years using the interim fish trapping system required in Article 410; (2) four adult Atlantic salmon have been verified in the Deerfield River below the Deerfield No. 2 dam for each of two consecutive years without the use of an interim trapping system; or (3) the Connecticut River Atlantic Salmon Commission Technical Committee (Technical Committee) determines that radio-tagging salmon is no longer an acceptable method and an alternative method is selected as described in the October 6, 1994, Offer of Settlement.

The plan shall be prepared in consultation with the U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, and the Technical Committee. The plan shall include: (1) a schedule for implementing the plan in the first migration season following the issuance of this license; (2) documentation of consultation with the U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, and the Technical Committee concerning the development and implementation of the plan; (3) methods of capturing, radio-tagging, and releasing fish at the Holyoke Dam Fishway; (4) methods of monitoring fish movement in the Deerfield River and the location of the monitoring stations; (5) a specific description of how the interim fish trapping facilities would be used in conjunction with the tagging program as described in the October 6, 1994, Offer of Settlement; and (6) filing agency comments, and Licensee's response to agency comments 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 Committee, and specific descriptions of how the agencies' and Committee comments are accommodated by the plan. The Licensee shall allow a minimum of 30 days for the agencies and Committee 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 414. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to monitor dissolved oxygen (DO) and temperature of the Deerfield River at three locations below Harriman dam. The DO and temperature monitoring at Harriman dam shall not be initiated until the minimum flows required in Article 405(c) are released.

The purpose of this water quality monitoring plan is to ensure that streamflows below the Harriman dam would maintain temperature and DO levels of no less than the Vermont state levels, set forth in Section 3 01(B) (2) of the Vermont Water Quality Standards, required for the normal development of trout.

The water quality monitoring plan shall include: (1) a schedule for implementing the program; (2) monitoring temperature and DO levels from June 1 through October 31 at three locations, (a) the Deerfield River channel directly below Harriman dam, (b) the penstock at the Harriman Station, and (c) the Harriman tailrace; (3) collecting DO and temperature data at no less than weekly intervals; (4) concurrently collecting DO and temperature samples at the Harriman station and tailrace; (5) filing annual data reports no later than the end of each sampling year with the Vermont Agency of Natural Resources; (6) a schedule for consulting with the resource agencies specified below concerning the results of the monitoring; and (7) filing the results (including annual data reports in (5)), agency comments, and Licensee's response to agency comments with the Commission.

The Licensee shall prepare the monitoring plan after consultation with the U.S. Fish and Wildlife Service, the Vermont Agency of Natural Resources and the Vermont Department of Fish and Wildlife. 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.

If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases, are necessary to protect fish resources, the Commission may direct the Licensee to modify project structures or operations.

Article 415. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a flow monitoring and reservoir operations plan. The plan would monitor reservoir levels and inflows and instantaneous flow releases below dams and in the tailraces of the Deerfield River Project, to ensure that the individual developments of the Deerfield River Project are managed to protect the fishery resources and water quality of the Deerfield River. The plan shall be consistent with the minimum flows required in Article 405, the reservoir water levels required in Article 406, and the conditions described in the Offer of Settlement signed on October 5, 1994, concerning flow monitoring and reservoir operations.

The monitoring plan shall include a schedule for:  
(1) implementing the plan; (2) consulting with the resource agencies specified below concerning the results of the monitoring; and (3) filing the results, agency comments, and Licensee's response to agency comments with the Commission. Following approval of the monitoring plan, the Licensee shall provide the records of the instantaneous flow data and reservoir level data to the Vermont Agency of Natural Resources and the Massachusetts Division of Fisheries and Wildlife, for project developments in their respective states, on a regular basis, but no later than 30 days from the date of the request.

The Licensee shall prepare the plan after consultation with the Vermont Agency of Natural Resources, the Vermont Department of Fish and Wildlife, the Massachusetts Division of Fisheries and Wildlife, and the U.S. Fish and Wildlife Service. 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.

If the results of the monitoring indicate that changes in

project structures or operations, including alternative flow releases, are necessary to protect fish resources and water quality, the Commission may direct the Licensee to modify project structures or operations.

Article 416. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan for revising the existing watershed model for the Deerfield River, including the Somerset and Harriman reservoirs, to produce a model that better predicts the timing and volume of inflows to these reservoirs and reduces the winter drawdowns to levels necessary to capture spring runoff.

The Licensee shall prepare the plan after consultation with the Vermont Agency of Natural Resources, the Vermont Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service. 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 the 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 417. Within 180 days from the date of the issuance of this license, the Licensee file with the Commission, with a copy to the Vermont Agency of Natural Resources, the rating curves depicting the head-flow-to power relationship for the Somerset, Searsburg, and Harriman developments of the Deerfield River Project.

Article 418. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to monitor the effectiveness of the existing trashracks at the Searsburg development in reducing fish impingement and entrainment at the intake.

The monitoring plan shall include a schedule for:  
(1) implementing the plan; (2) consulting with the resource agencies specified below concerning the results of the monitoring; and (3) filing the results, agency comments, and Licensee's response to agency comments with the Commission.



The Licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and the Vermont Department of Fish and Wildlife. 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.

If the results of the monitoring indicate that changes in project structures or operations, including alternative flow releases, are necessary to protect fish resources, the Commission may direct the Licensee to modify project structures or operations.

Article 419. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a tubercled orchid (Platanthera flava) mitigation and monitoring plan to protect these plants and their habitat, located around the Harriman and Searsburg bypassed reaches, from increased flows released pursuant to Article 405.

The Licensee shall prepare the plan after consultation with the Vermont Agency of Natural Resources (Vermont ANR). The plan shall include provisions for (1) relocating and maintaining in new locations populations of tubercled orchids affected by the increased minimum flows; (2) monitoring the success of tubercled orchid relocations; (3) a monitoring schedule; (4) identification of specific locations for relocating populations and monitoring, designated on a map to include project features; and (5) follow up work if the relocated tubercled orchid populations fail to survive.

The plan shall include a schedule for: (1) implementing the plan; (2) consulting with Vermont ANR concerning the results of the monitoring; and (3) filing the results, agency comments, and Licensee's response to agency comments 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 Vermont ANR, and specific descriptions of how Vermont ANR's comments are accommodated by the plan. The Licensee shall allow a minimum of

30 days for Vermont ANR 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 420. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, an artificial nesting structures plan.

The Licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service (FWS) and the Vermont Agency of Natural Resources (Vermont ANR). The plan shall include the following measures: (1) installation of 55 wood duck boxes; (2) installation of 24 black duck baskets; (3) installation of three common loon rafts; (4) installation of four osprey nesting platforms, around Somerset reservoir; (5) annual maintenance schedule of all installed artificial nesting structures, (6) annual consultation with the FWS and Vermont ANR on the status of waterfowl populations within the Somerset development, and measures to be performed to protect and enhance those waterfowl populations, including a determination of the effectiveness and benefits of providing these artificial nesting structures; and (7) an implementation schedule and map showing the locations for the installation of the various artificial nesting structures.

The plan shall include a schedule for: (1) implementing the plan; (2) consulting with FWS and Vermont ANR, and (3) filing the results, agency comments, and Licensee's response to agency comments 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 FWS and Vermont ANR, and specific descriptions of how agency 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 421. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for

approval, a beaver management plan.

The Licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service (FWS) and the Vermont Agency of Natural Resources (Vermont ANR). The plan shall include the following measures: (1) a description of specific methodology needed to maintain six active beaver ponds surrounding Somerset reservoir, as stipulated in the Deerfield River Project, Offer of Settlement; (2) a description of the monitoring methods and parameters for the beaver ponds; (3) an implementation and monitoring schedule; (4) a map showing project features and all beaver pond locations; and (5) a schedule for providing annual monitoring results to FWS and Vermont ANR.

The plan shall include a schedule for: (1) implementing the plan; (2) consulting with FWS and Vermont ANR, and (3) filing the results, agency comments, and Licensee's response to agency comments 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 FWS and Vermont ANR, and specific descriptions of how agency 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 422. Within 180 days from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a forest/timber management plan for the project area.

The Licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service (FWS), the Vermont Agency of Natural Resources (Vermont ANR), and the Massachusetts Division of Fisheries and Wildlife (Massachusetts DFW). The plan shall include the following measures: (1) objectives and specific measures, to include the specific methodology, used to protect or manage the forest/timber in the project area; (2) a description of clearing and revegetation techniques; (3) a description of the benefits that would result from the proposed management measures; (4) map(s) and acreage of the project areas to be included in the forest/timber management plan, and (5) an implementation schedule for the various management measures.

The plan shall include a schedule for: (1) implementing the

plan; (2) consulting with FWS, Vermont ANR, and Massachusetts DFW; and (3) filing the results, agency comments, and Licensee's response to agency comments 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 FWS, Vermont ANR, and Massachusetts DFW, and specific descriptions of how agency 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 423. Within 180 days of the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a supplement to the Comprehensive Recreation Plan filed with the Commission on September 30, 1993, in this proceeding, as it applies to the Deerfield River Project.

The supplemental plan shall include provisions for:

- (1) appropriate erosion and sediment control measures and measures for revegetation for land-clearances and ground-disturbances associated with improvements to existing and construction of any new recreational facilities; and
- (2) regularly-scheduled monitoring and maintenance for all recreational use areas at the project.

The Licensee shall prepare the supplemental plan after consultation with the National Park Service, the Massachusetts Department of Environmental Management, Vermont Agency of Natural Resources, and the National Resources Conservation Service. The Licensee shall include with the supplemental plan documentation, consultation, copies of comments and recommendations on the supplement after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the supplement to the Comprehensive Recreation Plan. The Licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the supplemental 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 supplemental plan. No land-disturbing or land-clearing

activities for recreation facilities shall begin until the Licensee is notified by the Commission that the supplemental plan is approved. Upon Commission approval, the Licensee shall implement the supplemental plan, including any changes required by the Commission.

Article 424. Within five years from the date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan providing for the construction, operation, and maintenance of a canoe portage facility at the Searsburg dam and a canoe put-in area below the dam.

The Licensee shall prepare the plan in consultation with the National Park Service and the Vermont Agency of Natural Resources. The Licensee shall make the plan available to consulting entities for comment at least 30 days prior to filing the plan with the Commission for approval. The Licensee's documentation of consultation shall include copies of the consulted entities' comments and recommendations on the completed plan and a discussion of how the entities' comments are specifically accommodated by the plan. If the Licensee does not adopt a recommendation made by one of the consulted entities, the Licensee shall include the Licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing or land-clearing activities for recreation facilities shall begin until the Licensee is notified by the Commission that the plan is approved. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission.

Within six months from the completion of these facilities, the Licensee shall file with the Commission, for approval, the as-built drawings, which shall include the identity of the entity responsible for operation and maintenance of the facilities.

Article 425. Within 180 days after the date of the issuance of this license, the Licensee shall file with the Commission, for approval, an Instream Recreation Safety Study Plan to examine the need for establishing gradual rates of change in river flow (ramping rates) below the Deerfield River Project developments or the need to add additional alarm systems for the safety of recreational users.

The Licensee shall prepare the plan after consultation with the National Park Service, the Massachusetts Department of Environmental Management, Vermont Agency of Natural Resources, and Trout Unlimited. 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 Trout Unlimited, and specific descriptions of how their comments are accommodated by the plan.

The Licensee shall allow a minimum of 30 days for the agencies and Trout Unlimited 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 426. Within 180 days of date of the issuance of this license, the Licensee shall file with the Commission, for approval, a plan to implement the releases from the Deerfield No. 5 Dam for whitewater boating agreed to in the October 6, 1994 Offer of Settlement.

The plan shall provide for whitewater releases for at least four continuous hours on Fridays starting at 11:00 a.m., at least five continuous hours on Saturdays starting at 10:00 a.m., and at least four continuous hours on Sundays starting at 10:00 a.m., according to the following monthly schedule providing for 26 weekend days or holidays and six Fridays from May 1 to October 31 annually:

<u>Month</u>	<u>Allocation</u>
May	2 weekend days
June	5 weekend days and 2 Fridays
July	6 weekend days and 2 Fridays
August	7 weekend days and 2 Fridays
September	4 weekend days
October	2 weekend days releases
Holidays	May be substituted for weekend days upon agreement between the Licensee and the citizens groups specified below before April 1 of each year.

The flow levels for the whitewater release periods shall be 900; 1,000; and 1,100 cubic feet per second (cfs) distributed equally over the schedule so as to average 1,000 cfs.

The plan shall include provisions for: the Licensee to meet

with representative citizens groups, including New England FLOW, before January 1 of each year to cooperatively develop the whitewater release schedules for the coming summer; issuance of the annual schedule by April 1 of each year following further consultation with these citizens groups; and cooperation between the Licensee and these citizens groups to disseminate the release schedule to the public.

The plan shall include provisions for a flow information telephone line providing recorded river flow information, including current conditions and anticipated release schedules, to be updated at least daily by the Licensee during the whitewater boating season.

The plan shall include provisions for reduction in whitewater flow releases due to natural low conditions, including consultation with representative citizens groups to cooperatively arrive at a reduced schedule, notification to the public of any such change in the schedule, and rescheduling of canceled release dates as additional release dates over the next two years.

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 427. Within 90 days from the date of the issuance of this license, the Licensee shall file for Commission for approval a detailed plan for the Licensee's participation in the conservation easement program set forth in Section V of the October 6, 1994 Offer of Settlement, for the protection of scenic, forestry, and natural resources on 16,677 acres of land currently included in the Deerfield River Project boundary and on 421 acres of land downriver of the Deerfield No. 2 development that the Licensee shall add to the Deerfield River Project. The 17,098 acres of conservation easements include 15,736 acres of land in Vermont and 1,362 acres of land in Massachusetts, as shown on the map attached as Appendix B in the Offer of Settlement.

The plan shall provide for the continued use of the property for forestry, educational, non commercial recreation, open space, and electric transmission and generation purposes; and for timber management by the Licensee on the conservation easements in accordance with the Forest Management Guidelines attached as Appendix C in the Offer of Settlement.

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 428. The Licensee shall implement the "Programmatic Agreement among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the Massachusetts State Historic Preservation Officer, and the Vermont State Historic Preservation Officer, for Managing Historic Properties that May Be Affected by a License Issuing to New England Power Company for the Continued Operation of the Deerfield River Hydroelectric Power Project on the Deerfield River in Massachusetts and Vermont," executed on October 8, 1996, including but not necessarily limited to: the Cultural Resources Management Plan for the Deerfield Project. In the event that the Programmatic Agreement is terminated, the Licensee shall implement the provisions of its approved Cultural Resources Management Plan. The Commission reserves the authority to require changes to the Cultural Resources Management Plan at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the Cultural Resources Management Plan, then 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 Deerfield Project's area of potential effect.

Article 429. Within 60 days of the date of issuance of this license, the Licensee shall file with the Commission, for approval, a plan to implement the Deerfield River Basin Environmental Enhancement Fund, in the amount of \$100,000, to finance watershed conservation, development of low impact recreational and educational projects and facilities, and planning, design, maintenance and monitoring of such facilities and projects, as described in the Offer of Settlement.

The Licensee shall prepare the plan after consulting with the Massachusetts Executive Office of Environmental Affairs and the Vermont Agency of Natural Resources. The plan shall describe the administration of the fund, including determination of the investment strategy for the fund, distributions from the fund, and eligibility criteria for fund recipients and projects.

The Licensee shall file with the Commission, by October 31 of each year, an annual accounting and funding report that describes the amount of funds expended and how those funds were used. The Commission reserves the right, after notice and opportunity for hearing, to modify the fund, including ordering a suspension or cessation of the funding, should it be necessary or appropriate to do so.

Article 430. (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 water for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the 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 or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69 kilovolts 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. If no conveyance was made during the prior calendar year, the Licensee shall so inform the Commission and the Regional Director in writing no later than January 31 of each year.

(d) The Licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved 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 project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any

calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the Licensee must submit a letter to the Director, Office of Hydropower Licensing, 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 New York 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 the following covenants running with the land: (I) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to 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; and (iii) the grantee shall not unduly restrict public access to project waters.

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

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised exhibit G 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.

(E) This license is subject to the conditions submitted by the Massachusetts Department of Environmental Protection and the Vermont Agency of Natural Resources under Section 401 of the Clean Water Act, as those conditions are set forth in Appendix A to this order, except Conditions I and J, and in Appendix B to this order, except Conditions O and W.

(F) This license will not become effective until New England Power accepts the amendments to its license for the Bear Swamp Project No. 2669, issued contemporaneously with this order.

(G) New England Power shall inform the Commission within 15 days of any change in the status of state administrative or court proceedings concerning water quality certification for the Deerfield River Project, and shall file semi-annual reports on the status of those proceedings if no change has occurred within the previous six months. The first status report must be filed no later than six months after the date of issuance of this order.

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

By the Commission.

( S E A L )

Project No. 2323-012

-53-

Lois D. Cashell,  
Secretary.

## APPENDIX A

## MASSACHUSETTS WATER QUALITY CERTIFICATION CONDITIONS

In accordance with the provisions of MGL Ch. 21, s.26-53, 314 CMR 4.00, 314 CMR 9.00, and Section 401 of the Federal Clean Water Act (Public Law 92-500 as amended), this Department has determined that the project can be operated to minimize impacts to waters and wetlands and that there is reasonable assurance that the project can be conducted in a manner which will not violate applicable water quality standards, as required by 314 CMR 4.00 and 314 CMR 9.04, and will be in compliance with Sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act. The Department issues this Water Quality Certification relative to this project subject to the following conditions:

A. The project shall be operated in accordance with the the provisions included in the FERC application (#2323), any modification made to the application based upon supplemental information, the Offer of Settlement provisions as related to water quality and with the conditions contained in this certification. The operation of the hydrofacilities (including high flow, peaking releases) should not interfere with the attainment of the designated uses of the Deerfield River as outlined in the Massachusetts Surface Water Quality Standards (314 CMR 4.00) and the maintenance of an integrated and diverse biological community in the Deerfield River.

B. The release and maintenance of minimum flows at the by-pass reaches and at the powerhouses which are consistent with the goals of the DRFMP and the Offer of Settlement. The required flows at the sites are as follows:

1. Location: Below No. 5 Dam  
Flow: the lesser of 73 cfs or inflow  
Special Condition: inflow will not be less than the 57 cfs guaranteed at Harriman Reservoir in Vermont
2. Location: Below No. 4 Dam  
Flow:  
October 1 to May 31 - the lesser of 100 cfs or inflow  
June 1 to September 30 - the lesser of 125 cfs or inflow
3. Location: Below No. 3 Dam  
Flow: the lesser of 100 cfs or inflow
4. Location: Below No. 2 Dam  
Flow: 200 cfs  
Special Condition: minimum flow guaranteed from storage

C. This certification requires the following conditions related to fisheries in the Deerfield River:

1. Location: At Dam No. 4

Requirement:

- a. construction of downstream fish passage facility in accordance with Plan H-64755 P (submitted as part of the FERC application and as modified by comments from United States Fish and Wildlife Service (USF&WS) on August 12, 1994) and as agreed to in the Offer of Settlement
- b. facility operational within two construction seasons after issuance of the new FERC license

2. Location: At Dam No. 3

Requirement:

- a. construction of downstream fish passage facility in accordance with Plan H-64757 P (submitted as part of the FERC application and as modified by comments from USF&WS on August 12, 1994) and as agreed to in the Offer of Settlement
- b. facility operational within two construction seasons after issuance of the new FERC license

3. Location: At Dam No. 2

Requirement:

- a. construction of downstream fish passage facility in accordance with Plan H-64758 P (submitted as part of the FERC application and as modified by comments from USF&WS on August 12, 1994) and as agreed to in the Offer of Settlement
- b. downstream passage facility operational within two construction seasons after the issuance of the new FERC license
- c. provide upstream fish passage by implementing an interim trapping program as agreed to in the Offer of Settlement
- d. Install a permanent upstream trap facility in accordance with Plan H-64756 (submitted as part of the FERC application and as modified by comments from USF&WS on August 12, 1994) within two construction seasons if trigger numbers (as agreed to in the Offer of Settlement) of returning salmon have been met or implement alternative system mutually agreeable to NEP, MADF&W, and USF&WS

D. Any construction activities shall be conducted in compliance with the Massachusetts Wetlands Protection Act (MGL c.131, s.40).

E. The applicant shall comply with MGL c.91.

F. All maintenance and repair activities, including disposal of debris and removal of sediments in impounded areas, and construction of fish passage facilities shall be conducted in a manner so as not to impair water quality.

G. Any recreational facilities and/or recreational uses of the project area shall be planned and conducted in such a manner as to protect and maintain water quality of the Deerfield River. The applicant shall maximize access for recreational uses, including those described in the Comprehensive Recreation Plan referenced in the Offer of Settlement dated October 5, 1994.

H. The applicant shall continue to provide telephone recorded flow information to support the recreational use of the Deerfield River.

I. Any modification of the operation of the project which would affect the conditions of this certification must be approved by this Department.

J. This Department reserves the right to review, and modify if necessary, the conditions of this certification if the State of Vermont Water Quality Certification (or future changes therein) results in non-compliance with this certification.

K. This Department may request, at any time during which this certification is in effect, that the Federal Energy Regulatory Commission reopen the license to make modifications necessary to maintain compliance with the Massachusetts Surface Water Quality Standards.



APPENDIX B

VERMONT WATER QUALITY CERTIFICATE CONDITIONS

Based on its review of the applicant's proposal and the above findings, the Department concludes that there is reasonable assurance that operation and maintenance of the Deerfield River Hydroelectric Project as proposed by the applicant and in accordance with the following conditions will not cause a violation of Vermont Water Quality Standards and will be in compliance with sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act, P.L. 92-500, as amended, and other appropriate requirements of state law:

- A. The applicant shall operate and maintain this project as set forth in the findings of fact and conclusions above except where modified by these conditions.
- B. **Reservoir and Flow Management.** The project shall be operated in accordance with the minimum flow and reservoir level management schedules tabulated below. Minimum flows shall be released on a continuous basis and not interrupted; minimum flows are the values listed below, or instantaneous inflow, if less, unless otherwise noted.

Table A. Somerset Reservoir Operation

Period		Minimum Flow Release (cfs)
1	May 1 - July 31	12/9
2	August 1 - September 30	12
3	October 1- December 15	30
4	December 16 - February 28 (29)	48
5	March 1 - April 30	30
Maximum annual drawdown elevation		2107 feet msl
Maximum summer/fall drawdown elev. (through November 1)		2120 feet msl
Ramping requirements for periods 2-5: Up ramping at 100 cfs or less over 24 hours Downramping at 50 cfs or less over 24 hours		
Maximum gate release 312 cfs, or inst. inflow if higher		
Loon protection:  Attain a target elevation of 2128.58 feet msl by May 1 and manage the level to stay within a range of +/- 3 inches of the target elevation through July 31. (see also Condition D)		

- Notes:
1. The minimum flow during Period 1 is 12 cfs, or instantaneous inflow if less than 12 cfs but greater than 9 cfs. If inflow is less than 9 cfs, 9 cfs shall be the guaranteed flow.
  2. Minimum flows in periods 2 5 are guaranteed from storage.
  3. *Loon Period.* If the target elevation cannot be reached by May 1 due to specific low inflow conditions unanticipated by the applicant, the applicant shall attempt to raise the reservoir to the target elevation as soon as possible after May 1, unless the loons nest at a lower elevation, in which case the reservoir shall be stabilized at that level. If the target elevation is not attained by June 1 due to low inflow, the reservoir shall be stabilized on June 1.

If high inflow causes the reservoir to exceed the target elevation on May 1, the applicant shall release water as necessary to attain the target elevation unless nesting occurs before that is possible, in which case the reservoir shall be stabilized at the higher elevation.

Period 1 may be extended as necessary for the protection of unusually late loon nesting, upon notification by the Department of Fish and Wildlife. The period may also be shortened in an individual year to end at an earlier date after June 15, if the Department of Fish and Wildlife determines that nesting is complete or that nesting will not occur.

The Department, upon a request of the Department of Fish and Wildlife, may adjust the target elevation if subsequently an alternate elevation is determined to better suit nesting.

4. *Ramping.* The applicant may elect to complete a study to define alternate ramping rates based on biological information or channel hydraulics. Any study plan shall be developed in consultation with the Agency, and a proposal for alternate ramping rates will require an amendment of this certification.

Table B. Searsburg Station and Impoundment Operation

Period		Bypass Minimum Flow Release (cfs)
1	June 1 - September 30	35
2	October 1- May 31	55
Impoundment fluctuation: No greater than proposed.		
April 20- May 15, a minimum flow of 175 cfs below the tailrace to protect smelt spawning		

Table C. Harriman Station and Reservoir Operation

Period		Minimum Flow Release (cfs)
1	October 1- June 30	70
2	July 1 - September 30	57
Maximum annual drawdown elevation		1440 feet msl
Maximum summer/fall drawdown elev. (through November 1)		1475 feet msl
Maximum drawdown rate, June 16 - July 15		1.0 /foot/day
April 1 - June 15 water level mgmt. rising or stable		

Note: Minimum flows in Table C are guaranteed from storage.

Within one year of the issuance of this certification or 30 days from the issuance of the federal license, whichever is sooner, the applicant shall file descriptions, hydraulic design calculations, an implementation schedule, and plans for the measures to be used to release the bypass flows with the Department for its review and approval. The filing shall address conditions with and without flashboards in place at Searsburg Dam, including conditions when the impoundment is drawn for flashboard replacement and subsequent refilling.

**C. Monitoring Plan for Reservoir and Flow Management.** The applicant shall file for review and approval, within one year of the issuance of this certification or 30 days from

the issuance of the federal license, whichever is sooner, a plan for monitoring instantaneous flow releases at the project, both below dams and below tailraces, and reservoir levels and inflows. Following approval of the monitoring plan, the applicant shall then measure instantaneous flows and reservoir levels and provide records of such measurements on a regular basis as per specifications of the Department. Upon receiving a written request from the applicant, the Department may waive, this requirement, all or in part, for monitoring at this project provided the applicant satisfactorily demonstrates that the project will at all times be managed consistent with the requirements of conditions B and F.

- D. Management Plan for Somerset Reservoir Gate Operation.** The applicant shall develop a management plan to govern operation of the gates at Somerset Reservoir to meet the goals of the water management requirements set forth in Condition B for Period 1, and shall file that plan with the Department within 120 days of the issuance of this certification. Implementation shall begin no later than the first nesting season following license issuance. The gates shall be automated as soon as practicable, but no later than the end of 1998. The plan shall address manual operation during 1996, 1997, and 1998 in addition to the final automated operation. The management plan shall include performance expectations for the equipment to be used and operating method proposed, both for interim and final operation; the plan shall include a calculation brief to support the projected performance. At its discretion, the applicant may elect to file the long-term plan separate from the interim plan, in which case the long term plan will be due on or before January 1, 1997.

The stage data recorder at Somerset Reservoir shall transmit real-time data to Harriman Station to enable the operators to monitor water levels and perform gate adjustments as necessary for the protection of loon nesting, consistent with the provisions of Condition B above. Within 10 days of each two-week period during the month of April and during Period 1, the applicant shall file reports of Somerset Reservoir hourly stages and outflows. Where the reservoir conditions are inconsistent with the goals of Condition B, the report shall indicate the reason.

Condition B allows the 100 cfs upramping requirements to be suspended as necessary to lower the reservoir to the loon nesting target elevation by May 1. As this is undesirable from a downstream resources perspective, the management plan shall be designed to minimize or eliminate the need to

exceed the upramping requirement while achieving a high probability of attaining the target elevation.

- E. Refinement of Watershed Model for Reservoir Management.** The applicant shall develop a refined watershed model in cooperation with the Agency in order to better predict the timing and volume of inflow and minimize reservoir winter drawdowns to only those levels necessary to capture spring runoff. A plan for the model refinement effort shall be filed with the Agency within one year of the date of issuance of the certification. In no case shall reservoir drawdowns exceed the levels stipulated in Condition B above. The model shall be periodically updated over the license term.
- F. Flashboards Installation- Searsburg Dam.** At Searsburg Dam, following the reinstallation of flashboards or an approved special maintenance operation necessitating a drawdown and if impoundment inflows are sufficiently low that the impoundment cannot be filled while meeting the bypass minimum flow requirements, up to ten percent of instantaneous inflow may be placed in storage and the downstream minimum flow requirement adjusted accordingly.
- G. Monitoring of Dissolved Oxygen and Water Temperature at Harriman Dam.** Dissolved oxygen and temperature conditions shall be monitored from June through October at three locations: 1) the river channel directly below Harriman Dam; 2) the penstock at Harriman Station; and 3) the Harriman tailrace. Sampling shall be done at no less than weekly intervals. The two samples at Harriman Station shall be concurrent. Annual data reports shall be filed no later than the end of the sampling year. A quality assurance/quality control plan shall be filed with the Department within 60 days of issuance of the federal license. The sampling at the dam is deferred until the initiation of bypass minimum flows. The Department may suspend the data collection when there is an adequate data base to determine whether or not mitigatory action is necessary.
- H. Institution of Measures to Attain Dissolved Oxygen and Temperature Standard at Harriman Facility.** Upon request of the Department based on its review of the data collected pursuant to Condition G, the applicant shall design and implement measures as necessary to meet dissolved oxygen standards and/or raise the water temperature in the Harriman bypass sufficiently to support high quality habitat for aquatic biota and fish, including the provision of a temperature regime that does not impair the growth rates of

fish.

- I. Tubercled Orchid.** The applicant shall file with the Department for prior review and approval within 90 days of issuance of this certification, a plan of mitigation (three copies) for the detrimental effect of increased flows in Harriman bypass on the state threatened tubercled orchid (Platanthera flava). The applicant shall consult with the Department of Fish and Wildlife during the development and implementation of this plan, which shall commence with the first summer following license issuance and shall include, but not be limited to the following steps:

FIRST SUMMER

1. Inventory the Searsburg bypass above Vermont Route 9 in early to mid-July when the tubercled orchid is in flower and hence most visible.
2. Locate the tubercled orchid plants throughout the Harriman and Searsburg bypass reaches in July when it is flowering and flag, if necessary, to facilitate reidentification in the fall.

FIRST AUTUMN

3. Conduct flow releases at the Harriman bypass (70 cfs) and the Searsburg bypass (35 cfs) after September 15 and locate and mark all inundated individuals of the tubercled orchid. At the same time potential new habitat would be identified and marked along the new edge of bank.
4. Create favorable habitat for the orchid in the areas previously identified along the new edge of bank by removing alders and any other means as required.
5. Collect seeds from the inundated orchids and sow along the new edge of bank using the best means available to insure germination.
6. Attempt to move all the orchids that will be inundated or harmed by whatever means available such as moving entire tussocks if all the plants it contains will be inundated. If individual plants are moved, as much soil as possible should be included, and the transplants should be covered with staked chicken wire to inhibit predation.

FIRST SPRING

10. Prior to mid-May and in coordination with the Agency,

raise water levels up to the required minimum flows in the two bypasses.

11. Monitor the orchid populations on a yearly basis for the next five years and report results to the Agency of Natural Resources on a yearly basis.

**J. Turbine Rating Curves.** The applicant shall provide the Department with a copy of the turbine rating curves, accurately depicting the flow/production relationship, for the record within one year of the issuance of this certification.

**K. Downstream Fish Passage - Searsburg Dam.** The applicant shall submit a plan for downstream fish passage at Searsburg Dam, including estimated design flows necessary for proper operation, to the Department of Fish and Wildlife for review within four months of a request. Such a request shall be predicated on the Department of Fish and Wildlife finding that use of the riverine habitat upstream of the dam as non-natal rearing habitat is necessary to the successful establishment of a migratory salmonid fishery in Harriman Reservoir. The request shall indicate the annual period during which the facility must be operated, but the period will not exceed operation 24 hours per day from April 1 - May 31. The period may be shortened after implementation of the passage based on knowledge gained about migration periods for migratory salmonids. The facility shall be functional at all impoundment operating levels. Downstream fish passage facilities shall be installed so as to be operational within 18 months of a request by the Agency. This plan shall include provisions to:

1. minimize passage of fish into the generating unit(s) if injury or mortality can result;
2. minimize impingement of fish on devices or structures used to prevent entrainment; and
3. convey fish safely and effectively downstream of the facility.

The plan shall include an implementation/construction schedule. The U.S. Fish and Wildlife Service and the Department of Fish and Wildlife shall be consulted during plan development. The plan shall include an erosion control and watermanagement plan designed to assure compliance with water quality standards during construction.

The Department of Fish and Wildlife may suspend the



operation of downstream passage facilities at any time based on its fishery management needs.

A request for passage facilities will not be made any earlier than seven years from the issuance date of this certification.

- L. Intake Protection - Searsburg Dam.** If a request for downstream passage facilities is not made in accordance with Condition K above, the applicant shall, within seven years and four months of the issuance date of this certification, submit a plan to the Department of Fish and Wildlife for measures to prevent fish impingement and entrainment at the Searsburg Dam intake. The plan shall include an implementation/construction schedule. The U.S. Fish and Wildlife Service and the Department of Fish and Wildlife shall be consulted during plan development. The plan shall include an erosion control and water management plan designed to assure compliance with water quality standards during construction. The plan shall be implemented within one year from the date of approval by the Department of Fish and Wildlife.

The Department of Fish and Wildlife may waive or postpone implementation of this requirement based on an analysis of the risk of fish mortality or other relevant information. The applicant may elect to furnish the Department of Fish and Wildlife with data on entrainment and turbine mortality.

- M. Upstream Fish Passage - Searsburg Dam.** The applicant shall submit a plan for upstream fish passage at Searsburg Dam, including estimated design flows necessary for proper operation, to the Department of Fish and Wildlife for review within four months of a request. Upstream passage shall be provided March 15- May 15 and October 1 - November 15, with the period subject to adjustment based on knowledge gained about migration periods for migratory salmonids. Upstream fish passage facilities shall be installed so as to be operational within 18 months of a request by the Agency; the request will not occur any earlier than 20 years from the issuance date of this certification.

The plan shall include an implementation/construction schedule. The U.S. Fish and Wildlife Service and the Department of Fish and Wildlife shall be consulted during plan development. The plan shall include an erosion control and water management plan designed to assure compliance with water quality standards during construction.

The Department of Fish and Wildlife may suspend the

operation of upstream passage facilities at any time based on its fishery management needs.

- N. Debris Disposal Plan.** Within 90 days of the issuance of this certification, the applicant shall submit a plan for proper disposal of debris associated with project operation, including trashrack debris, for written approval by the Department. The plan shall include information on the design and materials used for flashboard construction at Searsburg and the potential for the discharge of flashboards downstream.
- O. Maintenance and Repair Work.** Any proposals for project maintenance or repair work involving the river, including desilting of impoundments, impoundment drawdowns to facilitate repair/maintenance work (except routine flashboard maintenance), and tailrace dredging, shall be filed with the Department for prior review and approval.
- P. 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 State waters to be imposed by the applicant shall first be subject to written approval by the Department. In cases where an immediate threat to public safety exists, access may be restricted without prior approval; the applicant shall so notify the Department and shall file a request for approval, if the restriction is to be permanent or long term, within 14 days of the restriction of access.
- Q. Recreational Facilities.** Recreational facilities shall be constructed and maintained consistent with the proposed recreation plan (ref. response to AIR No. 24). Prior to construction at individual facilities, final design plans and details shall be filed with the Department and the Recreation Section of the Department of Forests and Parks for review and comment. The applicant is advised to consult with the Recreation Section in the development of plans. The filing shall include an erosion control plan that will be subject to Department approval prior to commencement of construction.
- R. Portage - Searsburg Dam.** The recreation plan shall be modified to include a portage at Searsburg Dam and a put in on river right below the dam.
- S. Telephone Notification System for Flows.** The applicant

shall install and have operational by May 1, 1996 a telephone flow notification system which informs callers as to approximate flow being released below Somerset Dam. By the date in which minimum flow releases are provided below Somerset and Harriman dams, the same type of telephone notification system shall be operational.

- T. Erosion Control.** Upon a written request by the Department, the applicant shall install erosion control measures as necessary to address erosion occurring as a result of use of project recreational facilities.
- U. Compliance Inspection by Department.** The applicant shall allow the Department to inspect the project area at any time to monitor compliance with certification conditions.
- V. Posting of Certification.** A copy of this certification shall be prominently posted within the project powerhouses and the Somerset gatehouse.
- W. Approval of Project Changes.** Any change to the project that would have a significant or material effect on the findings, conclusions, or conditions of this certification, including project operation, must be submitted to the Department for prior review and written approval.
- X. Reopening of License.** The Department may request, at any time, that FERC reopen the license to consider modifications to the license necessary to assure compliance with Vermont Water Quality Standards.