Appendix B.2

Ayers Island FERC License

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

Public Service Company of New Hampshire	))	Project No. 2456-009

ORDER ISSUING NEW LICENSE

(Issued April 29, 1996)

The Public Service Company of New Hampshire (Public Service) 1/ filed, on December 20, 1991, an application for a new license, pursuant to Section 15 of the Federal Power Act (FPA), 2/ to continue to operate and maintain the 8.4-megawatt (MW) Ayers Island Hydroelectric Project. The project is located on the Pemigewasset River, in Belknap and Grafton Counties, New Hampshire, near the towns of Bristol, Bridgewater, New Hampton and Ashland. The Commission issued the original license for the project on March 29, 1967. 3/ The original license expired on December 31, 1993. Since then, Public Service has operated the project under annual license. 4/

1/ Public Service is a public utility, organized under New Hampshire law, that generates, purchases, transmits, distributes, and sells electricity to approximately 70 percent of the state, both at the retail level and as a wholesaler to several other utilities and small municipal systems. Public Service is, since June 1992, a wholly owned subsidiary of Northeast Utilities, an electric utility holding company.

2/ 16 U.S.C. § 808.

37 FPC 578 (1967). The reach of the Pemigewasset River that includes the site of Project No. 2456 is a navigable waterway of the United States. Id. at 579. Section 23(b)(1) of the FPA, 16 U.S.C. § 817(1), therefore requires the project to be licensed.

4/ See Section 15(a)(1) of the FPA, 16 U.S.C. § 808(a)(1). On January 24, 1994, the Secretary issued a notice authorizing continued operation of the project pending the disposition of Public Service's application. 59 Fed. Reg. 10128, 10129 (March 3, 1994).

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Public Service proposes substantial environmental enhancements, no increase in the project's capacity, and no new construction. Public Service will continue to use electricity generated by the project in its transmission and distribution system. We will issue a new license for a term of 40 years.

I. PROJECT DESCRIPTION

The Ayers Island Hydroelectric Project was constructed in 1923-1924. It is situated twelve miles upriver of the U.S. Army Corps of Engineers' (Corps) Franklin Falls Flood Control Dam, with which, to a limited extent, it coordinates operations to decrease downstream flooding. Project releases into a 1.5-mile reach of the Pemigewasset River known as the Bristol Gorge enable year-round whitewater boating. 5/ The whitewater run has its put-in on project land, just below the Ayers Island Dam, and has its take-out on Corps land associated with the Franklin Falls Dam. The Corps leases the take-out site to the New Hampshire Department of Resources and Economic Development (State Development) for recreational purposes.

The project's principal features consist of: (1) a 699-foot-long concrete Ambursen dam having a 267-foot-long spillway and a maximum height of 72 feet from the toe of the dam to the spillway crest, with 7-foot hinged steel flashboards plus 1-foot wooden flashboards on the spillway section increasing the dam's height an additional eight feet, and, at the western end of the spillway, a 28-foot-long, gated Ambursen spillway section equipped with a 16-foot-high steel Broome-type gate; (2) an impoundment extending approximately ten miles upstream of the dam, with a normal maximum surface area of 600 acres and gross storage capacity of 10,000 acre-feet; (3) a reinforced concrete and brick powerhouse on the east bank of the river, just east of the spillway section, housing three generating units, each rated at 2.8 MW and having 500-550 cubic feet per second (cfs) turbine capacity; and (4) three 1.2 kilovolt lines 262 feet long leading to the associated substation east of the powerhouse. Ordering paragraph (B)(2) contains a more detailed project description.

5/ The Bristol Gorge offers mainly Class II whitewater, but also some Class III. At high levels of releases, it offers Class IV. Connelly, J. and J. Peterfield, Appalachian Whitewater (Birmingham: Menasha Ridge Press, 1987) at 97.

The International Scale of River Difficulty classifies rivers as follows: class I -- moving flatwater; class II -- easy rapids; class III -- rapids requiring precise maneuvering; class IV -- turbulent water requiring complex maneuvering; class V -- extremely difficult and long rapids requiring scouting from shore to determine the best route.

The project's authorized installed capacity is 8.4 MW, and its annual generation averages about 44.288 gigawatt-hours (GWh).

II. BACKGROUND

Notice of Public Service's new license application was issued on November 16, 1992, 6/ with a deadline for filing motions to intervene of February 17, 1993. 7/ Filing motions to intervene were: the U.S. Department of the Interior (Interior), presenting the views of the U.S. Fish and Wildlife Service (FWS) and the National Park Service (Park Service); the U.S. Environmental Protection Agency (EPA); the State of New Hampshire, presenting the views of the New Hampshire Department of Fish and Game (State Fish & Game); fifteen boating interest entities, jointly (the Boaters); 8/ and three fishing interest entities, jointly (Trout Unlimited). 9/ The motions to intervene were timely and unopposed and therefore granted automatically under Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 10/ Interior, New Hampshire, and Trout Unlimited opposed issuance of a new license, either as proposed by Public Service or lacking specific license terms. Three individuals jointly filed comments on the application. 11/

6/ 57 Fed. Reg. 57433, 57437 (December 4, 1992).

7/ Errata notice issued December 23, 1992.

8/ The Boaters are: Merrimack Valley Paddlers; Appalachian Mountain Club; American Whitewater Affiliation; American Canoe Association; American Rivers, Inc.; Pemigewasset River Council; Friends of the Winnipesaukee; U.S. Whitewater Team; Rhode Island Canoe Association, Inc.; Plymouth State College Outing Club; Ledyard Canoe Club; University of Massachusetts Outing Club; John Kazimierczyk d/b/a Millbrook Boats; A.D. Mitchell d/b/a Mitchell Paddles; and Whitewater River Journeys.

9/ The fishing interests are: Trout Unlimited; the New Hampshire Council of Trout Unlimited, Basil W. Woods, Jr./Concord Area Chapter; and the Atlantic Salmon Federation.

10/ 18 C.F.R. § 385.214(c)(1) (1995).

11/ The individuals are Maurice Jenness, William Thistle, and Terence Murphy. The major concern of their December 16, 1992 comments was erosion around the project's impoundment.

After the Commission staff issued notice, on September 22, 1993, 12/ that the new license application was accepted for filing and ready for environmental analysis, Interior, EPA, State Fish & Game, the Boaters, and Trout Unlimited filed comments. On October 13, 1993, the staff issued notice 13/ that an environmental impact statement would be prepared. Staff issued Scoping Document I in November 1993, describing the environmental issues to be evaluated, including reasonable alternatives to the project. Scoping meetings were held on December 14 and 15, 1993, in Bristol and Concord, New Hampshire, respectively. After these scoping meetings, EPA, State Fish & Game, Boaters, and two individuals 14/ filed additional comments. In February 1994, the staff issued a revised Scoping Document II 15/ and, in March 1994, asked for comments on the cumulative effects of proposed licensing activities in the Merrimack River Basin, 16/ to which EPA and Trout Unlimited filed responses. 17/

After issuance of the draft environmental impact statement (Draft EIS), on October 4, 1994, the staff held a public meeting in Bristol, to receive oral and written comments. Filing written comments were: the U.S. Department of Commerce (Commerce); Interior; EPA; State Fish & Game; Trout Unlimited; the Boaters; two constituent groups of the Boaters, the New Hampshire Rivers Council and the Pemigewasset River Council; and Public Service. 18/ Interior and State Fish & Game included in their

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12/ 58 Fed. Reg. 51333, 51335 (October 1, 1993).

13/ 58 Fed. Reg. 60014, 60014-15 (November 12, 1993).

14/ The individuals are Gerald Bernier, a white water boater, and Ernest Davidson, proprietor of a campground on the Pemigewasset River.

15/ Scoping Document II for Ayers Island Project (FERC Project No. 2456), issued February 7, 1994.

16/ March 8, 1994 letter from Commission staff to organizations on the service list for this proceeding, and other governmental agencies.

17/ March 31, 1994 filing by Water Quality Management Section, EPA, Region I (Boston); and March 25, 1995 filing by Trout Unlimited.

18/ On May 4, 1995, the Hydropower Reform Coalition filed comments with generic criticisms of the EIS.

comments recommendations for license conditions pursuant to Section 10(j) of the FPA. 19/

Thereafter, the staff wrote to Interior and State Fish & Game, 20/ explaining which of these agencies' recommendations to foster fish and wildlife the staff had been preliminarily found to conflict with the comprehensive planning and public interest provisions of the FPA. 21/ Further discussion ensued. The two resource agencies reached accord with Commission staff on license conditions affecting fish and wildlife and

19/ Section 10(j)(1) of the FPA requires the Commission to include license conditions, based on recommendations of state and federal fish and wildlife agencies, submitted pursuant to the Fish and Wildlife Coordination Act, 16 U.S.C. § 661 et seq., for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife resources. If the Commission believes that any such recommendations may be inconsistent with Part I of the FPA, or other applicable law, Section 10(j)(2) of the FPA requires the Commission to attempt to resolve the inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of the agencies. Failing resolution of the inconsistency, Section 10(j)(2) requires the Commission to publish findings that adoption of the recommendation is inconsistent with Part I of the FPA or other applicable law, and that the conditions selected by the Commission will adequately protect, mitigate adverse impacts to, and enhance fish and wildlife resources.

20/ February 3, 1995 letter from Commission staff to Office of the Attorney General, New Hampshire; and February 9, 1995 letter from Commission staff to Regional Solicitor, U.S. Department of the Interior.

21/ Section 4(e) of the FPA, 16 U.S.C. § 797(e), provides that licenses issued "shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality."

Section 10(a)(1) of the FPA, 16 U.S.C. § 803(a)(1), provides that licenses for projects shall be "such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways. . . ."

withdrew their opposition, subject to the Commission including appropriate license conditions. 22/

Commission staff issued the final environmental impact statement (EIS) for the new license on October 25, 1995, 23/ which is made a part of this order. EPA and the Boaters filed comments on the document. 24/ On September 21, 1995, Commission staff issued a Safety and Design Assessment (S&DA) for the new license, which is available in the Commission's public file associated with this proceeding. The EIS concludes that continued operation of the project, with staff's recommendations, would provide a dependable source of electric energy for Public Service's customers, and environmental measures that would improve the environment, including a beneficial cumulative effect on both Atlantic salmon and whitewater boating.

Trout Unlimited has maintained its opposition to a new license unless these conditions were included: run-of-river operation year-round, or at least May 15 through August 31; ramping (gradually increasing or decreasing outflows following project shut-down or unusually high-volume releases) and certain minimum and maximum flow limitations; satisfaction of state water quality standards; and installation of upstream fish passage facilities by the year 2010. For the reasons discussed below, we have adopted several, but not all, of these recommendations. Trout Unlimited requests an adjudicatory hearing, which we are denying.

The Commission has fully considered the motions and the comments of the above-named organizations and individuals in determining to issue the new license, with staff-recommended license conditions.

22/ March 1, 1995 letter from Acting Supervisor, New England Field Offices, FWS, to Commission staff, filed April 18, 1995; and March 15, 1995 letter from Assistant Attorney General, Environmental Protection Bureau, New Hampshire Department of Justice, to Commission staff, filed March 23, 1995.

23/ 60 Fed. Reg. 56590 (November 9, 1995).

24/ December 8, 1995 filing by Regional Administrator, EPA, Boston; and January 16, 1996 filing by the Boaters.

III. APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10(a)(2)(C) and 15(a) of the FPA, 25/ we have evaluated Public Service's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission line improvements; (7) project modifications; and (8) compliance record. Our findings follow.

1. Section 10(a)(2)(C): Conservation Efforts

Public Service promotes conservation of electricity in compliance with the requirements and policies of the New Hampshire Public Utilities Commission (Utilities Commission), which has statutory and regulatory authority regarding least cost planning and energy conservation in New Hampshire. Public Service's existing programs that encourage or assist customers to conserve electricity include individual analysis of energy use for residential and business customers, interruptible rates, time of use rates for large power customers, and rates for using thermal energy storage to heat spaces and water. Additional programs are under development to assist residential, commercial and industrial customers to reduce or time-shift their demands for electricity.

Commission staff contacted the Utilities Commission by phone (on March 8, 1994), and was advised that Public Service has complied with that agency's regulations and directives.

We conclude that Public Service is making good faith efforts to conserve electricity and to promote energy conservation by its customers.

2. Section 15(a)(2)(A): Compliance History and Ability to Comply with the New License

We have reviewed Public Service's license application and its record of compliance with its existing license in an effort to judge its ability to comply with the articles, terms, and conditions of any license issued, and with other applicable provisions of Part I of the FPA. Our review of Public Service's compliance record indicates that the licensee has in the past complied in a good faith manner with all articles, terms, and conditions of its current license. As a result of our review, we

25/ 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

believe Public Service has or can acquire the resources and expertise to comply with the conditions of the new license.

3. Section 15(a)(2)(B): Safe Management, Operation, and Maintenance of the Project

The Ayers Island Hydroelectric Project is classified under our regulations 26/ as having a high hazard potential because of the danger posed to property and human life downstream of the project in the event of a dam failure. 27/ Additionally, because of the dam's height and the size of its impoundment, our regulations 28/ require an independent consultant's inspection of the dam every five years.

Commission staff in the Division of Dam Safety and Inspections approved the Sixth Independent Consultant's Safety Inspection Report on January 28, 1993. The consultant evaluated the project site, stability analysis, spillway adequacy, operation and maintenance monitoring schedule.

Commission staff in the New York Regional Office (NYRO) inspected the project on May 24, 1995. NYRO staff described the project generally as being in good condition and well maintained, and the licensee's staff as knowledgeable about the operational requirements of the project. NYRO staff found that repairs needed at the intake platform and at the spillway channel downstream of the wastegate have been completed, and that the recommendations of the Sixth Independent Consultant's Safety Inspection Report have been implemented.

We conclude that the project will be safe for continued operation during the new license term, and will pose no threat to public safety if operated and maintained according to good engineering practices and our regulations governing our hydroelectric licenses.

26/ 18 C.F.R. Part 12 (1995), "Safety of Water Power Projects and Project Works."

27/ 18 C.F.R. § 12.31(b) (1995).

A dam with a "high hazard" potential is one whose failure, in the judgment of the Commission staff, might endanger human life or cause significant property damage, or one that meets the criteria for high hazard potential as defined by the Corps of Engineers in 33 C.F.R. Part 222.

28/ 18 C.F.R. §§ 12.30 and 12.38 (1995).

4. Section 15(a)(2)(C): Ability to Provide Efficient and Reliable Electric Service

We reviewed Public Service's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service.

Periodically, Public Service evaluates the feasibility of increasing capacity or generation at its hydroelectric projects. Its most recent evaluation of the Ayers Island Hydroelectric Project indicated that such increase is not economically feasible at this time. Public Service will continue to investigate and update its feasibility evaluations as changing conditions may warrant. Public Service does not now propose any new development.

Public Service has provided a list of unscheduled outages and the resultant lost generation during the period 1986-1991. The duration of unscheduled outages ranged from a minimum of 54 minutes to a total of about 15 hours.

We conclude that Public Service has been operating the project in an efficient manner within the constraints of the existing license and that it will continue to provide efficient and reliable electric service in the future.

5. Section 15(a)(2)(D): Need for Power

Customers of Public Service have benefitted from the low-cost hydropower generated by the Ayers Island Hydroelectric Project for over 70 years.

Public Service reports to the New England Power Pool (NEPOOL), which, together with the New York Power Pool (NYPP), constitute the Northeast Power Coordinating Council (NPCC). NPCC prepares an annual report for the northeast region, "The Regional Reliability Council Long Range Coordinated Bulk Power Supply Programs Report," from data reported by NYPP and NEPOOL. This report, commonly referred to as the DOE Form OE-411 Report or simply as the OE-411 Report, gives projected summer and winter peak-hour demand data, capacity resources data and projected annual energy requirements data for each year of the 10-year planning period, with NEPOOL and NYPP data presented separately.

The 1993 NPCC OE-411 Report forecasted the annual compounded growth rate for the summer peak load in the NEPOOL region for the 1993 through 2002 planning period to be 2.4 percent for the summer peak load, and 2.1 percent for the winter peak load. The corresponding compounded annual growth rate for annual energy requirements is projected to be 2.0 percent. These projections, together with the project's 70 years of reliable operation,

support Public Service's need for the project's electricity to serve its present and future customers.

We conclude that Public Service's long term need for power justifies licensing the project.

6. Section 15(a)(2)(E): Transmission Line Improvements

Public Service proposes no new power development at the project, and will continue to use the project's energy in its transmission and distribution system. Because the existing transmission system suffices, Public Services proposes no changes to the transmission network affected by project operations.

7. Section 15(a)(2)(F): Project Modifications

Although Public Service does not propose additional generating capacity, it does propose environmental, recreational, and aesthetic resources enhancements to the project that would affect existing project operation and the environmental and aesthetic resources of the project. The EIS discusses in detail the need for, usefulness of, and economics of the modifications proposed by Public Service modified in turn by Commission staff. We conclude that the project, as currently constructed, and as proposed to be operated, with Public Service's and staff's modifications, fully develops and uses the economical hydropower potential of the site.

8. Section 15(a)(3)(A): Compliance Record

We have reviewed Public Service's record of making timely filings and of complying with the terms and conditions of its existing license. We conclude that Public Service's overall record is satisfactory.

IV. WATER QUALITY

Water quality, discussed here, and project operating regimen, discussed next, have been the two major areas of contention in this new license proceeding.

EPA, New Hampshire, and the Boaters request that all project waters at all times be required to meet New Hampshire's Class B standards. 29/ Additionally, EPA and the Boaters request that

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29/ New Hampshire's surface waters are classified either Class A (highest quality) or Class B (second highest quality). Class B waters are "acceptable for fishing, swimming and other recreational purposes and, after adequate treatment,

(continued...)

project waters meet EPA's stream classification criteria pertaining to metal concentrations, which the New Hampshire Department of Environmental Services, Water Supply and Pollution Control Division (Water Division) has adopted. 30/

Public Service's study of project waters during late summer of 1990 and late spring and early summer of 1991 (Water Quality Report) 31/ showed that during these seasons, water in the impoundment hypolimnion 32/ tended to have dissolved oxygen concentration below the state standard of at least 75 percent of saturation. Similarly, tailrace water sometimes fell below the state standard, presumably because the hypolimnion had risen to the project intake level. However, less than one mile below the project dam, the dissolved oxygen concentration had risen to meet the state standard. 33/ The study also showed manganese, aluminum, zinc and lead levels at the headpond surface and bottom and at the tailrace exceeded EPA's stream classification criteria pertaining to metal concentrations. 34/

29/(...continued)
for use as water supplies.". They must have dissolved oxygen content of at least 75 percent of saturation; they must meet precise limitations of Escherichia coli bacteria and precise pH ranges, except for natural causes; and temperature increases caused by discharges must not interfere appreciably with the waters' assigned uses. N.H. Rev. Stat. Ann. § 485-A:8(II) (1992).

30/ See N.H. Code Admin. R. Env.-Ws 432.03, Table 1 (1994).

31/ "Water Use and Quality at the Ayers Island Project," prepared by Normandeau Associates, August 1991, in license application, vol. II, Exhibit E, Appendix A.

32/ The hypolimnion is the lower, heavier, colder, oxygen-poor zone in a thermally stratified lake. It is separated from the epilimnion, the upper, warmer, lighter, oxygen-rich zone, by a thermocline layer.

33/ See EIS at § 3.3.2 at pp. 3-18 to 3-22; and Water Quality Report, § 2, "Stratification Surveys" at pp. 4-6, and § 4, "Water Quality Sampling and Monitoring," at pp. 92-93.

34/ See EIS, § 3.3.2 at pp. 3-22 to 3-23; and Water Quality Report, § 4.12, "Total Metals," at pp. 71-72.

Water Quality Certification

Under Section 401(a)(1) of the Clean Water Act, 35/ the Commission may not issue a license for a hydroelectric project unless the state in which the project discharge originates either issues water quality certification for the project or waives certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year.

Public Service requested water quality certification from the state certification agency, the Water Division, by letter dated March 7, 1990. 36/ Water Division received the request a few days later. 37/ The Water Division did not issue water quality certification until August 9, 1991. We find that the Water Division has waived certification by failing to act on Public Service's request within the statutory one-year period.

In Order No. 533, 38/ the Commission revised its rules for determining the one-year period within which a state certifying agency must act on a request for water quality certification. Under the new rule, for certification requests filed on or after June 19, 1991, the effective date of Order No. 533, the waiver period begins on the date that the certifying agency receives the request. For certification requests filed before June 19, 1991, the one-year waiver period begins on the date that the certification agency had accepted the request for filing "in accordance with applicable law governing filings with that agency," the Commission's prior waiver rule as construed in City of Fredericksburg, Virginia v. FERC, 876 F.2d 1109 (4th Cir. 1989). 39/ Fredericksburg

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35/ 33 U.S.C. § 1341(a)(1).

36/ See the license application, vol. III, Exhibit E, Appendix G.

37/ Telephone conversation between Commission staff and Water Division staff.

38/ Regulations Governing Submittal of Proposed Hydropower License Conditions and Other Matters, 56 Fed. Reg. 23108 (May 20, 1991), FERC Stats. & Regs. Preambles ¶ 30,921, on reh'g, 56 Fed. Reg. 61137 (Dec. 2, 1991), FERC Stats. & Regs. Preambles ¶ 30,932 (Order No. 533-A), codified at 18 C.F.R. §§ 4.38(f)(7) and 16.8(f)(7).

39/ See Order No. 533, ¶ 30,921 at pp. 30,135-36 and n. 116, and Order No. 533-A, ¶ 30,932 at pp. 30,343-44 and n. 70. If (continued...)

held that the waiver period commences upon satisfaction of the state certification agency's filing requirements. 40/

In 1990, when Public Service requested certification for Project No. 2456, New Hampshire had no published regulations governing the filing of water quality certification requests. Accordingly, there was no applicable law governing Public Service's filing, and therefore the one-year waiver period began on the day the Water Division received Public Service's request, on or about March 7, 1990. Since the Water Division's August 9, 1991 certification was issued more than one year later, certification was waived.

The August 9, 1991 certification contained the condition that, starting in 1994, Public Service was to conduct a three-year water quality monitoring program for dissolved oxygen and temperature in project waters. Another condition called for maintenance and protection of all existing Pemigewasset River uses and New Hampshire's Class B water quality standards.

Although these conditions are not mandatory under Section 401 of the Clean Water Act, 41/ due to the waiver of certification, Public Service has voluntarily agreed to comply with them, to the best of its ability. 42/ In July 1994, Public Service began to monitor project waters for dissolved oxygen and water temperature at locations upstream and downstream of the project dam, as requested by Water Division. 43/

39/(...continued)
the certification agency had not accepted the certification request for processing in accordance with its regulations on or before June 19, 1991, the one-year period begins on that date.

40/ 876 F.2d at 1112 and n. 3.

41/ Lawful conditions of a certification for a project become terms and conditions of the license. See Tunbridge Mill Corporation, 68 FERC ¶ 61,078 at p. 61,387, n. 19 (1994).

42/ License Application, vol. I, Exhibit E, § 2.4 at p. E2.4-1.

43/ Public Service intends to conclude the water quality monitoring in September 1996. It anticipates making its report to the Water Division in early 1997. (March 26, 1996 telephone communication from Public Service to Commission staff.)

Article 402 of the new license requires Public Service to use all reasonable measures to meet the water quality standards, to complete its three-year monitoring program of dissolved oxygen and temperature, and to recommend any changes in project operations needed to facilitate continual maintenance of these standards.

Metals Contamination

EPA has expressed concern that project waters in some locations exceed EPA standards for manganese, aluminum, zinc, and lead. Although acknowledging that the project does not discharge these metals into the Pemigewasset River, EPA suggests that the project impoundment may serve as a sink, and that the anoxic conditions of the impoundment's hypolimnion may cause impoundment sediments to release these metals.

EPA asks that Public Service be required to evaluate the relationships between dissolved oxygen and metals levels, on the one hand, and project operations, such as impoundment stratification, powerhouse intake locations, and upstream sources of toxins, on the other hand, and then to propose operation, structural, or other means to alleviate the contamination. EPA also requests, in its comments on the Draft EIS, that Public Service conduct a post-licensing study to determine mercury concentrations in tissues of project impoundment fish.

Similarly, the Boaters have expressed concern that project operations contribute to elevated levels of mercury. In their November 1993 comments on the new license application, the Boaters requested that Public Service conduct a five-year study of the project's role in mercury accumulation in fish, birds and humans. Should the project be found to be partly responsible for mercury contamination, the Boaters also requested license modification to address the contamination and that Public Service develop and implement a fish consumption advisory.

As discussed in the EIS, metal and mercury accumulations in rivers and lakes are mainly the result of natural run-off -- for example, mercury is a natural constituent of some surface soils and rocks -- and urban and industrial development. The slightly elevated levels of metals found in water from the project impoundment bottom and tailrace are similar to the

levels found in other rivers and lakes throughout the Merrimack River Basin. 44/

The project itself is not the source of any of the elemental metals, or any other point-source pollutant to water quality. The relatively minor impoundment fluctuations along the river banks from project operation produce only minimal erosion and are a negligible cause of metal and mercury accumulations. While the project's impoundment acts as a sink for relatively insoluble elements and compounds that flow downstream from up-river sources and either sink or bind with sediments in the impoundment, these trace metals bound in sediment at present, or transported downstream in the future, would continue to be present in the Basin, and would essentially remain unaffected with or without the operation of the hydroelectric project in the Basin.

Since the project does not directly cause or exacerbate metals contamination in project waters, which is similar in degree to metal levels in other rivers and lakes throughout the Merrimack River Basin, we are not requiring Public Service to conduct the requested post-licensing studies metals contamination studies.

44/ EIS § 3.3.2 at pp. 3-22 to 3-23; § 4.3.2 at pp. 4-11 to 4-13; and § 4.3.4 at p. 4-26. In 1990, Public Service conducted water quality sampling that detected lead, manganese, aluminum, and zinc at levels which exceeded EPA criteria for water quality. Most of the elevated metals levels were observed in the hypolimnion, where the anoxic condition probably results in increased releases of trace metals from impoundment sediments. Comparison with data collected by Water Division in 1989 revealed that the levels for aluminum, manganese and zinc, though elevated, are within the range of those sampled throughout the Basin by Water Division's extensive sampling. These results are indicative of a river showing general system-wide cumulative contamination from multiple sources of these industrial pollutants. Although no site-specific mercury sampling has been conducted at Ayers, general sampling has been conducted throughout the Basin. In 1982 and 1985, the FWS conducted a survey for selected EPA priority pollutants to determine the state of contamination of fish in particular reaches of the river, which showed that Merrimack River wholebody fish tissue levels of PCBs (polychlorinated biphenyl compounds), lead, mercury, copper and cadmium were generally above mean national levels.

V. PROJECT OPERATING REGIMEN

The most contentious issue of this new license proceeding has been project operations. When should the project operate run-of-river, for fishery protection, and when should the project operate store-and-release (peaking), for power generation, and, for the latter, under what regimen? Peaking enables Public Service to shift generation to times of greater energy demand, and to provide large releases that enhance the whitewater boating in the Bristol Gorge. Although not required under the original license, Public Service voluntarily began, in 1987, to release a minimum flow of 320 cfs or project inflow, if lower, to protect fish and their habitat.

In its new license application, Public Service proposes to continue the 320 cfs minimum flow, except when the impoundment will not refill within 24 hours to its normal maximum surface elevation of 453.33 feet USGS, and to operate the project in a modified peaking mode from mid-May to August 31, with the daily flow variation kept to one turbine's hydraulic capacity (500-550 cfs). To benefit whitewater boaters, and provided the project reservoir could refill within 24 hours, on weekends (Saturday and Sunday) and holidays, between June 1 and October 31, Public Service proposes to release a minimum of 840 cfs over the four-hour period that coincides with the times of most whitewater use. Additionally, Public Service proposes to schedule with the whitewater boating groups three special boating events annually "with guaranteed instream flows of 840 cfs, 1,000 cfs, or 1,500 cfs." 45/ From September 1 to May 15, Public Service proposes to operate the project in a daily peaking mode. In conjunction with changing the releases from the project, either for peaking or for whitewater flows, Public Service proposes half-hour ramping holds as each individual turbine goes on or off line. 46/ Exceptions to this ramping regime would be during emergencies. Public Service would also release flows as needed for fish to pass downstream through the fish passage facility.

Trout Unlimited requests that the project operate run-of-river mid-May through the end of August, or, should we permit a peaking regime during that period, release a minimum flow of

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45/ Application, vol. I, Exhibit E, p. E5-25.

46/ The "ramping holds" proposed here involve sequentially restarting or shutting down the project's turbines at half-hour intervals and specified outflows. In other words, when one turbine is restarted or shut down other turbines would not be comparably started or shut down until half an hour later.

746 cfs from mid-May to mid-October, with ramping to reduce fish stranding and to foster safety for anglers. Also, when the reservoir refills after draw-down, including the summer whitewater season, Trout Unlimited asks that the project maintain a minimum flow of 320 cfs. Trout Unlimited states that the project's peaking releases under the original license have caused habitat loss and have adversely affected spawning and incubation of the Pemigewasset's coldwater fishery, including trout and Atlantic salmon.

State Fish & Game originally requested that the project operate run-of-river from mid-May through the end of August. As an alternative to run-of-river operation, State Fish & Game proposes that Public Service be required to undertake a habitat time series analysis to investigate whether its proposed peaking and ramping operation under a daily maximum flow variation of 500 cfs would enable juvenile fish to move to suitable habitats with changing flows, and also to prepare a wetland mapping of the impoundment to show the effects of peaking operations on the fish and wildlife habitat there. Fish & Game requests also that the 320 cfs minimum flow always be maintained, even when refilling the impoundment after drawdown or whitewater release.

Interior requests, to accommodate the interests of both FWS and the Park Service, that the project operate mid-May through August as Public Service had proposed, with daily flow fluctuations limited to 500 cfs and with half-hour ramping holds. However, Interior also requests that the project release a 320 cfs minimum flow or project inflow, continuously except for emergencies.

The Boaters request, to satisfy beginner through advanced whitewater boaters, that the project release a minimum of 840 cfs for four to six hours, on weekends and holidays from the first weekend in March through the last weekend in October, with preference given to Sunday releases if reservoir storage is insufficient for both weekend days. To enable the Boaters to schedule their whitewater events, the Boaters request that each month, June through September, Public Service guarantee specific releases of 840 cfs on the first Saturday and 1,500 cfs on the third Saturday.

In the Draft EIS, Commission staff proposed the following project operations. Maintenance draw-down would be scheduled between Labor Day and October 1. The project's minimum flow release would be 320 cfs or project inflow, if less. The minimum flow could be reduced, but not below a minimum of 148 cfs, after reservoir draw-down to enable the reservoir to refill over 48 hours. Should Atlantic salmon be restored to the Pemigewasset River reach, just below the project dam, then

the licensee would be required to release a minimum flow of 746 cfs from October 15 through May 15. The maximum variation in daily flows could be no greater than 550 cfs (one turbine's maximum capacity), except for whitewater releases. Intermediate generation (ramping) holds would be at half-hourly intervals during all up- and down-ramping, including special whitewater events but excluding during NEPOOL-determined emergencies. Whitewater releases, assuming the impoundment will refill over 24 hours, would be: a minimum of 840 cfs on weekends, May through August, for six hours between 10 a.m. and 4 p.m., but if inflow is low, then on Sunday; a minimum of 840 cfs for at least four hours on weekends, September through October plus Labor Day and Columbus Day; and two, previously scheduled, 6-hour special releases, one of 1,000 cfs in July and the other of 1,500 cfs in August. For the two special release days, project operation would be permitted to exceed the daily variation limit of 550 cfs. Nevertheless, the special release flows would still be subject to half-hour holds during up- and down-ramping. 47/

Commission staff reviewed all the organizations' comments on the Draft EIS. Pursuant to Section 10(j) of the FPA, 48/ the staff then conferred, by telephone, with the resource agencies, FWS and State Fish & Game, and included the other parties, Public Service and the Boaters, to try to resolve the various parties' objections to the staff's proposed operating regime. 49/

The participants agreed that Public Service could release from the project less than the required 320 cfs minimum flow while the impoundment refills after draw-down or whitewater events, but only if, given the impoundment level and the river flow, the impoundment could not refill within 48 hours to its normal surface elevation of 453.33 feet USGS with a 320 cfs minimum flow. The temporarily reduced minimum flow will be limited to the flow that predictably will take a full 48 hours to refill the impoundment, and in no case will be lower than 148 cfs. 50/

47/ Staff's Recommended Alternative. Draft EIS § 5.4 at pp. 5-13 to 5-14, and § 5.4.1 at pp. 5-16 to 5-19.

48/ 16 U.S.C. § 803(j).

49/ The telephone conference took place on April 19, 1995. Trout Unlimited declined to participate.

50/ See March 1, 1995 letter from New England Field Office, FWS, to Commission staff, filed April 18, 1995; March 15, 1995

(continued...)

The Commission staff has thoroughly investigated the related issues of fishery protection and whitewater boating flows. We adopt the conditions agreed to by staff and by all of the parties except Trout Unlimited: the modified peaking operating regime; the ramping rates; the study of ramping's effect on fish and habitat; the two minimum flows; and the whitewater releases. They are appropriate to safeguard fishery resources while enabling continued whitewater enjoyment of the Bristol Gorge. These conditions are set forth in Articles 401 through 407 and Article 413.

Article 403 requires a minimum flow of 320 cfs or inflow. It permits the minimum flow to be reduced after whitewater events or emergency draw-down to the flow that will refill the impoundment over 48 hours, with a lower limit of 148 cfs. Article 404 provides for a future required minimum flow release of 746 cfs between October 15 and May 15 should salmon be restored to the Pemigewasset River between the Eastman Falls and Ayers Island Dams. Article 405 requires the licensee to limit maintenance draw-downs of the project impoundment to after Labor Day and before October 1. Article 406 limits changes in project outflow to 550 cfs (one turbine's maximum capacity) from May 15 through August 31, except for whitewater events. In association with whitewater events, and during the remainder of the year, September 1 through May 14, when flows may vary by more than 550 cfs over the course of a day, the licensee will be required, in non-emergency situations, to hold project outflows constant for 30-minute intervals as each turbine goes on- or off-line. Article 407 requires the licensee to prepare a plan to monitor the effects of this ramping rate on fish below the project dam. Article 413 provides for special whitewater boating releases.

VI. FISHWAYS

Section 18 of the FPA 51/ states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of Commerce and the Interior may prescribe. Commerce did not submit a prescription. Interior, in its comments filed November 22, 1993, requests construction of a downstream fishway, and reservation of its authority to require future upstream fishway construction.

50/(...continued)
letter from State Fish & Game to Commission staff, filed March 23, 1995; and January 16, 1996 filing of the Boaters.

51/ 16 U.S.C. § 811.

Interior asks that the licensee construct, after FWS approval of the functional design drawings, a permanent downstream fishway with appropriate water flows, and that it be operated continuously from April 1 through June 15 to benefit salmon smolts, and as-needed October 15 through November 30 for adult salmon stocked upstream from the project. Further, Interior requests that the fishway's effectiveness be monitored.

Article 408 provides, as an interim measure, for removal of the westernmost flashboard and appropriate flows. It allows five years for the licensee to study alternate downstream fish passage methods, in consultation with FWS and State Fish & Game, before filing its plan for permanent downstream fish passage facilities. Article 408 directs the licensee to consult with FWS regarding the downstream fish passage plan before filing final design drawings for Commission approval. 52/

Interior anticipates that the Merrimack River anadromous fish restoration program 53/ will evaluate the need for

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52/ The Commission must require its licensees to construct the fishways that the Secretary of Commerce or the Interior prescribes. However, because the Commission retains final approval authority over all project structures, see Lynchburg Hydro Associates, 39 FERC ¶ 61,079 (1987), the Commission has ruled that a requirement that final designs for fishways be approved by such agencies is not a prescription within FPA Section 18. See Eugene Water and Electric Board, 49 FERC ¶ 61,211 (1989) at p. 61,743, reh'g, 60 FERC ¶ 61,743 (1992); Northern Wasco County People's Utility District, 57 FERC ¶ 61,214 (1991) at p. 61,706, reh'g, 60 FERC ¶ 61,087 (1992) at p. 61,281. Prior to acting on a licensee's final fishway designs, it is Commission practice to require the licensee to consult on such designs with Commerce and/or Interior, and submit their comments to the Commission. See, e.g., Enerco Corp., 48 FERC ¶ 61,009 (1989) at p. 61,043; Northern Hydro Consultants, Inc., 58 FERC ¶ 61,347 (1992) at p. 62,133. Niagara Mohawk Power Corp., 67 FERC ¶ 61,300 (1994), reh'g pending, and Edward M. Clark, 73 FERC ¶ 61,088 (1995), failed to reflect the Commission's prior rulings. We reaffirm those rulings.

53/ Under the provisions of the Anadromous Fish Conservation Act of 1965, as amended, 16 U.S.C. §§ 757a-757f, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the U.S. Forest Service have entered into a cooperative (continued...)

upstream fish passage facilities in various dams along the Pemigewasset and Merrimack Rivers in 2010. Interior therefore requests reservation of its authority to prescribe upstream fishways. 54/ Article 409 reserves the Commission's authority to require Public Service to construct, operate, and maintain such upstream fish passage facilities as may be prescribed by the Secretary of the Interior.

VII. RECREATION

The Boaters request numerous improvements in recreational facilities to increase their enjoyment of the Bristol Gorge: (1) to correct the existing "river telephone line," so that its estimated flow information is accurate and is updated twice-daily; (2) to improve the road leading to the boat put-in site and to snow-plow it when necessary, from March through October; (3) to develop and maintain a canoe portage trail around the Ayers Island Dam to the boat put-in site; (4) to place picnic tables at the boat put-in site; (5) to maintain temporary toilets and trash cans at the put-in site from March through October; (6) to require no-cost access to project lands for all recreation uses; and (7) at the downstream Franklin Falls Reservoir boat take-out area, under State Development's charge, to improve the portage trail, road and parking facilities, and to install campgrounds, picnic tables and portable toilets there, funding these improvements to the extent that State Development does not do so.

Interior, in its comments on the Draft EIS, stated approval of Commission staff's recommended recreational improvements. It requested that the license ensure no-cost, public access to the boat put-in area within the project boundary, that the licensee consult with the National Park Service and State Development over its recreational plan and improvements, and that the licensee finance State Development's improvements at the boat take-out area at the Franklin Falls Reservoir.

53/(...continued)
program with the fisheries agencies of Massachusetts and New Hampshire (the Massachusetts Division of Fisheries and Wildlife, the Massachusetts Division of Marine Fisheries and the New Hampshire Department of Fish and Game) to restore anadromous fish, principally Atlantic salmon and American shad, to the Merrimack River Basin. These federal and state agencies comprise the Policy and Technical Committees for Anadromous Fishery Management of the Merrimack River.

54/ Comments, filed November 22, 1993, from Director, Office of Environmental Affairs, Office of the Secretary, Interior.

The EIS recommends, 55/ and we adopt, requirements that Public Service: (1) provide a flow information telephone line and a contact person, and specify times when the flow information will be available; (2) improve road access from the picnic site to the boat put-in site, including snow-plowing when necessary after March 1st; (3) identify and remove hazardous rocks from the boat put-in site; (4) install a staff gage downstream of the project dam; (5) develop and maintain the portage trail around the Ayers Island Dam to the boat put-in site; (6) provide a temporary toilet at the boat put-in site; (7) provide an additional picnic table and trash cans at the picnic area; and (8) after consultation with the Corps and State Development, and, as a one-time obligation, fund stabilization of the shoreline and construction of wooden steps at the boat take-out at Franklin Falls. These requirements are in Article 412.

With respect to recreational use fees, our policy is that where a licensee incurs costs in operating and maintaining recreational facilities, the licensee may impose reasonable user fees in order to help defray those costs. 56/ At present, Public Service does not charge fees for recreational access to project lands.

VII. OTHER COMMENTS AND RECOMMENDATIONS

A. Trial-Type Hearing

The Boaters and Trout Unlimited requested in their motions to intervene that we hold an adjudicatory hearing to resolve issues of material fact, including fishery impacts, project flows, recreational needs and other resource impacts. They contend that these issues had not been not fully analyzed or resolved in Public Service's new license application.

These issues were fully analyzed during the four-year process of notice-and-comment hearing that followed Public Service's application. Commission staff issued notices of the filing of the application, the application's readiness for environmental analysis, public scoping meetings, and Draft EIS issuance. All of these events invited comments and participation from the parties or other persons by filed comment letters, or by personal attendance at the public

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55/ EIS § 5.4 at pp. 5-14 to 5-15.

56/ See Order No. 313, 34 FPC 1546, 1548 (1965); and 18 C.F.R. § 2.7 (1995).

meetings. 57/ Commission staff also notified all parties of the conflicts they believed to exist between FWS' and State Fish & Game's environmental recommendations under the Fish and Wildlife Coordination Act, 58/ and the purposes of the FPA. Commission staff asked all parties, including the Boaters and Trout Unlimited, to participate in the April 19, 1995 telephone conference on the Draft EIS and its environmental recommendations. 59/

Boaters and Trout Unlimited have not demonstrated that any issues of material fact were inadequately considered or addressed in the record of the notice-and-comment hearing associated with this relicensing proceeding. 60/

B. Buffer Zone and Shoreland Protection

The lands surrounding the project impoundment are lightly developed, with only scattered residences. The lands' predominant uses are forest, agriculture and recreation. Roads parallel both sides of the impoundment at distances of 200 to 1,000 feet. 61/ The existing project boundary follows very closely the high-water mark of the 10-mile-long impoundment and the river banks below the dam for approximately 400 feet. A bulge in the boundary, adjacent to the north end of the dam, contains the project picnic area and the boat put-in area. Public Service owns only five percent of the impoundment shoreline, but acquired flowage rights over the remainder before it applied for its original license.

57/ See III Procedural Background, supra.

58/ 16 U.S.C. § 661 et seq.

59/ Trout Unlimited declined to participate in the April 19, 1995 teleconference.

60/ Neither the FPA nor the Administrative Procedure Act, 5 U.S.C. § et seq., requires a trial-type hearing, with witnesses under oath, cross-examination and compulsory process, instead of the notice-and-comment type hearing that the staff conducted.

61/ See EIS § 3.1 "General Setting," and License Application, Exhibit E, § 1.1 at pp. E1-1 to E1-3.

Citing Sections 2.7 and 4.51(f)(6)(iv) of our regulations, 62/ the Boaters propose that the new license enlarge project boundaries to 200 feet of the high water mark. 63/ They propose that Public Service be required to purchase this land, except for already developed lots, or, at a minimum, to purchase 200-foot conservation easements that prevent further development. The Boaters assert that a 200-foot buffer zone is needed to protect wildlife, reservoir water quality, and the scenic qualities of the shoreland from the development of homes, docks, and marinas.

Our regulations require an analysis of the costs and other constraints of providing a buffer zone around all or any part of the project impoundment, for the purpose of ensuring public access to project lands and waters and protecting the recreational and aesthetic values of the impoundment and its shoreline. 64/ The EIS found that there was no evidence to

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62/ 18 C.F.R. § 2.7 (1995) is the Commission's policy statement on recreational development at licensed projects. It expresses the Commission's expectation that its licensees:

> acquire in fee and include within the project boundary enough land to assure optimum development of the recreational resources afforded by the project. To the extent consistent with the other objectives of the license, such lands to be acquired in fee for recreational purposes shall include the lands adjacent to the exterior margin of any project reservoir plus all other project lands specified in any approved recreational use plan for the project.

See also the Commission's license application regulations at 18 C.F.R. § 4.51(f)(6)(iv) (1995), incorporated by reference in the relicense regulations, 18 C.F.R. § 16.9(b)(2), and described below. The Boaters also cite to Section 5 of the Manual of Standard Special Articles, Office of Hydropower Licensing (April 1992), which deals with buffer zones and to Alabama Power Co., 12 FERC ¶ 61,060 (1980), in which the Commission required the licensee to acquire a buffer zone.

63/ The Boaters originally sought a 500-foot buffer, but revised it to 200 feet after issuance of the Draft EIS. See the Boaters' comments on the Draft EIS at p. 4, in EIS Appendix C at p. C-21. The Final EIS did not reflect the Boaters' revised proposal, as was noted by the Boaters in their January 16, 1996 comments on the Final EIS.

64/ 18 C.F.R. § 4.51(f)(6)(iv), supra.

suggest that protection of these values is being compromised because of too little land within the current project boundary. 65/

For Public Service to acquire property rights in the parcels of land needed to extend the project boundary by 200 feet would cost from $384,000 to $1,440,000. Absent a clear need to provide additional protection, the cost of acquiring a 200-foot buffer strip cannot be justified. As circumstances warrant, the Commission has reserved authority to require the licensee to acquire additional project lands to serve evolving public interest needs, after notice and opportunity for hearing.

C. Environmental and Recreational Trust Fund

The Boaters contend that Public Service has had free use of the Pemigewasset River to generate power while it has impaired the river's natural resource values. Therefore, the Boaters request that the new license require Public Service to establish an Environmental and Recreational Resource Mitigation Fund (Trust Fund), into which Public Service would contribute a total of $900,000. 66/ The Boaters ask that the trust fund

65/ EIS § 5.4(13) at p. 5-14. The EIS did recommend that Public Service develop a buffer zone management plan for the lands within the boundary. The EIS cited to the zoning ordinances of the surrounding towns as adequately protecting the surrounding shoreland. EIS.§ 5.4(13) at 4-28 to 4-29. However, local zoning ordinances are an inadequate substitute for a licensee's control of land use for the area surrounding a project impoundment to fulfill project purposes. See Alabama Power Co., 12 FERC ¶ 61,060 at p. 61,120 (1980).

66/ The Boaters originally proposed an annual funding by ten percent of the project's gross revenues, but revised that recommendation at the same time they reduced their buffer zone proposal from 500 to 200 feet. See their December 7, 1994 comments on the Draft EIS. The Boaters envision that a public agency or a non-profit trust would manage the fund, and would purchase land, conservation easements and riparian rights in the Pemigewasset watershed. The money and the lands would be used for low-impact public recreation, such as footpaths and fishing opportunities, for educational projects, for protection of archaeological or cultural sites, and for programs to protect wildlife and waterfowl and to prevent pollution at the river and the impoundment.

be modeled after that approved for New England Power Company's Deerfield Project No. 2323. 67/

Unlike the case of the Deerfield River Project, in the instant proceeding the licensee has not entered into an agreement regarding a trust fund, nor do we find that the Boaters' proposal is needed, inasmuch as the license we issue today is conditioned in a manner sufficient to meet the statutory standards. 68/

X. DAM REMOVAL AND PROJECT DECOMMISSIONING

The Boaters request a license condition requiring Public Service to guarantee the costs of project decommissioning or dam removal by establishing a trust fund or by posting a bond to cover these costs. The Boaters do not request that the project be decommissioned or that the dam be removed at the end of this new license. Their concern is that, if, upon expiration of this new license, the Commission orders decommissioning, the funds to do so will be available. Also, EPA requests that the Commission investigate the option of license denial, project and dam removal, and restoration of pre-project river conditions.

In our December 14, 1994 policy statement on project decommissioning at relicensing, we stated that we will not pre-judge future conditions or future regulatory policies involving project decommissioning or dam removal, and that we will not, as a matter of course, impose pre-retirement funding in a

67/ See the Boaters' comments on the draft EIS filed December 7, 1994.

68/ Licensing of the project in 1967 was based on a finding that, on balance, the project was in the public interest, largely due to its production of inexpensive electric power. The comprehensive development standard of Section 10(a) of the FPA evolves over time to reflect new technology, economic conditions, and interest in preserving environmental values. When a project is up for relicense, the FPA does not require us to balance developmental benefits against pre-project conditions. To do so would fail to take into account both the non-developmental benefits the project offers (such as recreation) and the often considerable environmental damage that dam removal would entail. Rather, we start with the project as it now exists and examine whether, in light of today's valuation of various beneficial public purposes, the project should continue to operate, and if so, subject to what new environmental measures.

license. Rather, the particular facts in the record of an individual case will be the basis for requiring advance funding for project decommissioning or dam removal. 69/

The evidence in the record before us indicates that the Ayers Island Hydroelectric Project is economically and physically sound. No party has requested that the project be decommissioned now or at any time in the foreseeable future, and no one has advanced any reason to expect that the project will reach the end of its useful life during the term of the new license. Thus, there is nothing in the record to support establishing a decommissioning fund.

Pursuant to EPA's request, Commission staff investigated removing the project and restoring pre-project conditions, and determined that this would create new problems, such as loss of impoundment recreation, reduction in whitewater boating opportunities, economic loss to the local recreation businesses, loss of flood control, and release of sediments now trapped by the project dam. 70/ We conclude that project removal with restoration of pre-project conditions is unwarranted.

XI. COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA 71/ requires us to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. 72/ Under this statutory provision, federal and state agencies filed 17 comprehensive plans that address various resources in New Hampshire. Of these, Commission staff identified and reviewed

69/ Project Decommissioning at Relicensing: Policy Statement, 60 Fed. Reg. 339, 346 (January 4, 1995), FERC Statutes & Regulations Preambles ¶ 31,011 at p 31,234 (1995).

70/ EIS § 2.4 at p. 2-12.

71/ 16 U.S.C. § 803(a)(2)(A).

72/ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (1995).

15 plans relevant to the project. 73/ No conflicts were found.

XII. CUMULATIVE IMPACTS

On December 14, 1994, we issued a policy statement on ameliorating cumulative impacts of multiple projects within the same river basin by use of reserved authority in licenses. We stated there that our decisions on cumulative impacts would necessarily consider the particular facts and circumstances of each individual case, and that issues of cumulative impacts should be examined preferably at the time of relicensing. 74/

73/ The federal plans are: (1) North American wildlife management plan, 1986, U.S. Fish and Wildlife Service and Canadian Wildlife Service; (2) North American waterfowl management plan, 1986, U.S. Fish and Wildlife Service and Canadian Wildlife Service; (3) Final environmental impact statement -- restoration of Atlantic salmon to New England rivers, 1989, U.S. Fish and Wildlife Service; (4) Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service, undated, U.S. Fish and Wildlife Service; and (5) The nationwide rivers inventory, 1982, U.S. National Park Service.

The state plans are: (1) Strategic plan for the restoration of Atlantic salmon to the Merrimack River, 1990 through 2004, 1990, Merrimack River Policy and Technical Committees for Anadromous Fishery Management of the Merrimack River (Strategic Plan); (2) Wild, scenic and recreation rivers for New Hampshire, 1977, New Hampshire Office of State Planning; (3) New Hampshire wetlands priority conservation plan, 1989, New Hampshire Office of State Planning; (4) New Hampshire outdoors, 1988-1993: state comprehensive outdoor recreation plan, 1989, New Hampshire Office of State Planning; (5) Public access plan for New Hampshire's lakes, ponds, and rivers, 1991, New Hampshire Office of State Planning; (6) Upper Merrimack River corridor plan-volume 2; (7) Management plan, 1991, New Hampshire Office of State Planning; (8) New Hampshire rivers management and protection program, 1990, State of New Hampshire; (9) New Hampshire rivers management and protection program, 1991, State of New Hampshire; and (10) Massachusetts outdoors for our common good: open space and outdoor recreation in Massachusetts, 1988, Massachusetts Department of Environmental Management.

74/ 59 Fed. Reg. 66,714, 66,717 (December 28, 1994), FERC Statutes and Regulations ¶ 31,010 at p. 31,218. See 18 C.F.R. § 2.23 (1995).

The Ayers Island Hydroelectric Project's influence on the downstream Pemigewasset and Merrimack Rivers is limited first by the Corps' Franklin Falls Flood Control Dam, twelve miles downstream, which attenuates the effect of peaking flows from the Ayers Island Dam, and second by the Winnipesaukee River's juncture immediately below Eastman Falls, two miles further downstream, to form the Merrimack River. The significant cumulative impacts issue that arises in this proceeding is restoration of anadromous Atlantic salmon to the Merrimack River Basin and the concomitant need for fish passage facilities and suitable habitat, as discussed in the Strategic Plan. 75/

The new license addresses this issue. Prior to starting the relicensing process, on June 10, 1986, Public Service and concerned federal and state agencies, among them FWS and State Fish and Game, agreed to a fish passage plan at the Ayers Island Dam as part of a comprehensive plan for providing fish passage facilities at three of Public Service's hydroelectric projects in the Merrimack River Basin. 76/ The new license adopts these provisions in Articles 404 and 409. 77/

XIII. COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA 78/ require us, when acting on license applications for the purposes of power and development, also to give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued must be such as in our judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.

In preparing the draft EIS and the EIS, Commission staff independently analyzed several options for a new license: the licensee's proposed project; the proposed project with additional enhancement measures proposed by Commission staff,

75/ See n. 68, supra.

76/ License application, Exhibit E at p. E3.1-7. The two other projects are Merrimack River Project No. 1893 and Eastman Falls Project No. 2457.

77/ See also EIS § 4.3.3 at pp. 4-21 to 4-22 and § 5.4.1.2 at p. 5-23.

78/ 16 U.S.C. §§ 797(e) and 803(a)(1).

the resource agencies, or the intervening parties; and continuation of project operations under the same conditions as the prior license. We have reviewed the staff's analyses, and have decided to issue the new license with the staff's recommended enhancement measures. We have selected this option because these measures will protect and enhance water quality, fishery resources, recreational resources, cultural resources and aesthetics at the project, while the electricity generated from a renewable resource will continue to replace the use of fossil-fueled generating plants, thereby conserving non-renewable energy resources and reducing atmospheric pollution. The project's economic and environmental benefits outweigh its costs; with mitigation, the project's adverse environmental effects will be minor.

Under our new approach to evaluating the economics of hydropower projects, as recently articulated in Mead Corporation, Publishing Paper Division, 79/ we employ an analysis that uses current costs to compare the costs of the project and likely alternative power without regard to forecasts of potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of our analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

In addition, certain economic factors related to project decommissioning are not present in an original licensing proceeding but impinge on the decision to issue a new license. If a new license is not issued for an existing project, or if the licensee-applicant declines to accept the new license, the project will have to be retired in one form or another. This could range from simply removing the project generators to major environmental restoration, including dam removal.

The Ayers Island Hydroelectric Project with the staff's recommended measures, including a required minimum flow of 320 cfs from mid-May through mid-October (and with provision after 2010 for 746 cfs during those months) will produce about 40.08 GWh of energy annually. The energy will have an annual power value of about $1,971,000 or 49.18 mills/kWh; the annual project cost will be about $588,000 or 14.68 mills/kWh; and the net annual benefits will be about $1,383,000 or 34.49 mills/kWh, in 1995 dollars. 80/

79/ 72 FERC ¶ 61,027 (1995).

80/ See S&DA at 7.

Our decision to license the project, with the terms and conditions included herein, reflects our conclusion that the statutory purposes for which a license may issue have been thoroughly considered and appropriately balanced in this relicense proceeding.

XIV. LICENSE TERM

Section 15(e) of the FPA 81/ provides that any new license issued shall be for a term of not less than 30 years nor more than 50 years. Our general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigative and enhancement measures; 40-year terms for project with a moderate amount of proposed redevelopment, new construction, new capacity or mitigative and enhancement measures; and 50-year terms for projects with proposed extensive redevelopment, new construction, new capacity, or mitigative and enhancement measures.

This new license does not authorize construction of new capacity or project redevelopment. However, it authorizes substantial and costly fishery and recreational enhancements. Accordingly, the new license will have a term of 40 years.

XV. SUMMARY OF FINDINGS

The EIS issued for the project contains background information, analysis of impacts, and support for related license articles. Issuance of this license is a major federal action significantly affecting the quality of the human environment.

The design of the project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the S&DA prepared for this project.

Based upon review of the agency and public comments filed in this proceeding, upon our review of the staff's evaluation of the environmental and economic effects of the proposed project and its alternatives, and upon our independent analysis pursuant to Sections 4(e) and 10(a) of the FPA, 82/ we conclude that Project No. 2456, as relicensed herein, is best

81/ 16 U.S.C. § 808(e).

82/ 16 U.S.C. §§ 796(e), 803(a).

adapted to a plan for the comprehensive development of the Pemigewasset River for beneficial public uses.

The Commission Orders:

(A) This license is issued to Public Service Company of New Hampshire (Licensee) for a term of 40 years, effective the first day of the month in which the license is issued, to operate and maintain the Ayers Island Hydroelectric Project No. 2456. 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 subject to the regulations that the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the Licensee's interests in those lands, shown by the following drawings in Exhibit G, which were included in the application for new license filed on December 20, 1991:

Exhibit G-	FERC No. 2456	Showing
1	1006	Project Vicinity and Boundary Map
2	1007	Project Vicinity and Boundary Map
3	1008	Project Vicinity and Boundary Map
4	1009	Project Vicinity and Boundary Map
5	1010	Project Vicinity and Boundary Map
6	1011	Project Vicinity and Boundary Map
7	1012	Project Vicinity and Boundary Map
8	1013	Project Vicinity and Boundary Map
9	1014	Project Vicinity and Boundary Map

10	1015	Project Vicinity and Boundary Map

(2) Project works consisting of: (i) A reinforced concrete Ambursen-type dam, 699 feet long, having (a) a 267-foot-long spillway section, with a maximum height of 72 feet at a crest elevation of 445.33 feet (USGS), topped with 8-foot-high flashboards, comprised of 7-foot-high hinged steel flashboards and 1-foot-high wood boards; (b) a gated structure, located on the west end of the spillway section, with one steel Broome-type gate, 16 feet high by 28 feet wide, having a sill elevation of 437.33 feet (USGS), and (c) a sluiceway structure, located on the east end of the spillway section, with three 5-foot by 5-foot sluice gates, having a sill elevation of 379.8 feet (USGS); (ii) An impoundment having (a) surface area of 600 acres; (b) gross storage capacity of 10,000 acre-feet (AF); (c) useable storage capacity of 1,200 AF; and (d) normal headwater elevation of 453.53 feet (USGS); (iii) An integral powerhouse, located at the east end of the spillway section, measuring about 96 feet long by 31 feet wide by 37 feet high, equipped with three 2,800-kilowatt (kW) generating units with: (a) total capacity of 8,400 kW, (b) hydraulic capacity of 140 to 1,539 cfs, and (c) operating head of 80 feet; (iv) A 262-foot-long, 2.4 kilovolt (kV), 3-phase overhead primary transmission line; and (v) Appurtenant facilities.

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

Exhibit A:

The following sections of Exhibit A, filed December 20, 1991:

The dam, turbines, generators, and electrical single-line-diagram as described on pages A-5 through A-10.

Exhibit F:

The following Exhibit F drawings, filed on December 20, 1991:

Exhibit	FERC No. 2456-	Showing
F-1	1001	Plan and Elevation of the Project Dam
F-2	1002	Plan and Section of Intake Structure

F-3	1003	Plan and Section of the Main Powerhouse
F-4	1004	Sections of Dam and Spillway
F-5	1005	Section and Elevation of Wastegate

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

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States", 54 F.P.C. 1792, 1817-24, and the following additional articles:

Article 201. The Licensee shall pay the United States an annual charge, effective the first day of the month in which this license is issued, for the purposes of reimbursing the United States for the cost of administration of Part I of the FPA, as determined by the Commission. The authorized installed capacity for that purpose is 8,400 kilowatts (kW).

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 reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly 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 301. Within 90 days of completion of construction of the facilities authorized by this license (fish passage, recreation, etc.), the Licensee shall file for approval, revised Exhibits A, F and G, to show those project facilities as-built.

Article 401. In conjunction with the final downstream fish passage design plan required in Article 408, the Licensee shall file an excavation, erosion and sediment control plan to accommodate the required excavation of the plungepool below the final approved fish passage device. The plan shall at a minimum include details on methods and techniques required to excavate the plungepool, including:

(a) Topographic maps showing existing project area features including: (1) stream bottom and banks that will be disturbed, including depth of excavation; (2) all borrow and spill disposal sites; (3) all laydown areas and haul roads; and (4) proposed temporary and permanent alterations in flow routing during excavation and upon completion;

(b) Detailed descriptions of control measures, explaining how the control measures would prevent or lessen the impacts of excavation;

* in progress discussions with State ongoing 4/00 probable actions in '01 CMW

(c) A schedule of all ground disturbing construction activities to occur; and

(d) Documentation of consultation with the agencies prior to preparing the plan, copies of agency comments or recommendations on the completed plan, and specific descriptions of how all the agency 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 prior to 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. Plungepool excavation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission.

Article 402. The Licensee shall complete the three (3) consecutive years water quality monitoring begun in 1994, as defined by the New Hampshire Department of Environmental Services. The monitoring shall include:

See FERC memo 3 10/15/98

(a) Dissolved oxygen and water temperature monitoring at two locations in the Pemigewasset River, upstream of the Ayers Island impoundment and downstream of the dam, as specified by Environmental Services-Pollution Control;
(b) Continuous dissolved oxygen and temperature monitoring at each location for 72 hours during each of the following periods: late June - early July, late July - early August, late August - early September;
(c) Equipment calibration and quality control measures followed to assure accuracy;
(d) Monitoring events conducted under as close to limiting water quality conditions as possible (river flows below 500 cfs and water temperature above 20°C), with sampling flow documented; and
(e) Water quality monitoring and Quality Assurance/Quality Control results reported on an annual basis to the agencies and the Commission and a summary report prepared.

The Licensee shall file the results of the monitoring with the New Hampshire Department of Environmental Services-Division of Water Supply and Pollution Control, the New Hampshire Department of Fish and Game, and the U.S. Fish and Wildlife

Service. The Licensee shall allow a minimum of 30 days for the agencies to comment and make recommendations before filing the report with the Commission. The Licensee shall file with the Commission the results of the monitoring, copies of comments and recommendations from the agencies, and any necessary or proposed changes to the project or project operations needed to maintain state water quality standards. The Commission reserves the right to require additional monitoring, if deemed necessary. Should the results of monitoring indicate that changes in the project or project operation are necessary to ensure maintenance of state water quality standards, the Commission may direct the Licensee to modify project operations.

The Licensee shall implement all reasonable measures to maintain Class B ("swimmable-fishable") New Hampshire state water quality standards at the Ayers Island Project, in order to preserve existing river uses.

Article 403. The Licensee shall release from the Ayers Island Hydroelectric Project into the Pemigewasset River a minimum flow of 320 cubic feet per second or inflow, whichever is less, for the protection and enhancement of aquatic habitat in the Pemigewasset River. This flow may be temporarily modified if required by operating emergencies beyond the control of the Licensee, or for short periods of time upon mutual agreement between the Licensee, the New Hampshire Department of Fish and Game, and the U.S. Fish and Wildlife Service. If the flow is so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

During any temporary modification, as described above, and following draw-down of the reservoir, as specified in Article 405, the Licensee may decrease the minimum flow release from the Ayers Island Hydroelectric Project into the Pemigewasset River only to the flow that will refill the reservoir to its normal surface level of 453.33 feet USGS over a period of 48 hours, except that at no time may the minimum flow from the project be less than 148 cfs. The Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 404. In the future, when a sea-run salmon stocking restoration program is instituted or sea-run salmon reach the Pemigewasset River between Ayers Island and Eastman Falls Dams via upstream fishways, the Licensee shall release from the Ayers Island Project into the Pemigewasset River a minimum flow of 746 cubic feet per second or inflow, whichever is less, from October 15 through May 15, to facilitate salmon spawning and incubation in the Pemigewasset River. This flow

may be temporarily modified if required by operating emergencies beyond the control of the Licensee, or for short periods of time upon mutual agreement between the Licensee, the New Hampshire Department of Fish and Game, and the U.S. Fish and Wildlife Service. If the flow is so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Concurrent with the increase in minimum flow release required when sea-run salmon are stocked into or reach the Pemigewasset River between Ayers Island and Eastman dams via upstream fishways, the Licensee shall consult with the agencies, develop a plan, and conduct an assessment of adult salmon habitat in the reach below the Ayers Island Project.

Article 405. The Licensee shall limit scheduled draw-downs of the Ayers Island Project impoundment, for routine maintenance, to between the day after Labor Day and October 1 each year, for the protection of aquatic resources and whitewater boating releases in the Pemigewasset River. This restriction may be temporarily modified if required by operating emergencies beyond the control of the Licensee, or for short periods of time upon mutual agreement between the Licensee, the New Hampshire Department of Fish and Game, and the U.S. Fish and Wildlife Service. If the draw-down period is so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 406. The Licensee shall maintain maximum rates of change in river flow (ramping rates) during project startup and shutdown according to the following:

(a) From May 15 through August 31, the maximum flow fluctuation during project operation for any one day shall be no greater than 550 cfs, or the equivalent of bringing one turbine on- or off-line;

(b) From September 1 through May 14, and during any whitewater boating releases as specified in Article 413, implement 30-minute holds when bringing turbines on- or off-line, except when documented NEPOOL emergencies arise.

This restriction may be temporarily modified if required by operating emergencies beyond the control of the Licensee, or for short periods of time upon mutual agreement between the Licensee, the New Hampshire Department of Fish and Game, and the U.S. Fish and Wildlife Service. If the ramping-rate requirements are so modified, the Licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

The Licensee shall make available ramping-rate flow information (via project operation records) required by this article to the Commission and appropriate agencies within 30 days from a request for the information.

Article 407. Within 6 months from the issuance date of the license, the Licensee shall file, for Commission approval, a plan to monitor the effects of the ramping rate requirements on the salmon fry below the Ayers Island Project, as required by Article 406. The plan should include methods of monitoring and recording headwater and tailwater fluctuations, changes in habitat availability and use, and fishery responses to flow alterations, and a schedule for implementing the monitoring.

The Licensee shall prepare the plan in consultation with the New Hampshire Department of Fish and Game 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. Should the results of monitoring indicate that changes in project operation are necessary to protect aquatic habitat below the Ayers Island Project, the Commission may direct the Licensee to modify project operations.

Article 408. The Licensee shall, on an interim basis, install, operate, and maintain downstream fish passage facilities at the Ayers Island Project, to reduce fish entrainment and provide efficient downstream fish passage past the project. Interim downstream fish passage shall be provided by utilizing the westernmost flashboard, with flows of 320 to 350 cubic feet per second maintained through the downed flashboard. Flow release volume may be temporarily modified, after consultation and agreement by the U.S. Fish and Wildlife Service and the New Hampshire Department of Fish and Game, for purposes of studying alternative flow releases. The Licensee shall provide for downstream fish passage as described herein from April 1 through June 15, and from October 1 through November 30 each year, subject to modification after consultation and agreement by the U.S. Fish and Wildlife Service and New Hampshire Fish and Game.

Within 5 years after the date of issuance of this License, the Licensee shall file for Commission approval a plan for permanent downstream fish passage facilities that includes functional design drawings of the Licensee's proposed downstream fish passage facilities, quantification of the flows required to operate the proposed facilities, an operation and maintenance plan, and a schedule for installing the facilities. Additionally, the plan shall include an effectiveness monitoring component of the fishway, following installation of the final downstream passage measure, to assess any injury or mortality associated with its use by fish.

The Licensee shall prepare the permanent downstream fish passage plan after consultation with the U.S. Fish and Wildlife Service and New Hampshire Department of Fish and Game. The Licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the drawings, flow requirements, and the installation/operational schedule after each has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the Licensee's 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 409. In 2010, the Licensee shall consult with the U.S. Fish and Wildlife Service on the need for upstream passage facilities. Authority is reserved to the Commission to require the Licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior.

Article 410. The Licensee shall implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the New Hampshire State Historic Preservation Officer, for Managing Historic Properties That May Be Affected By A License Issuing to Public Service of New Hampshire For the Continued Operation of the Ayers Island Hydroelectric Power Project in New Hampshire," executed on November 18, 1994, including but not limited to the Cultural Resources Management Plan for the 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, the Licensee shall obtain Commission approval before engaging in any ground disturbing activities or taking any other action that may affect any historic properties within the Project's area of potential effect.

Article 411. Within 12 months after the date of issuance of this license, the Licensee shall, in consultation with the U.S. Fish and Wildlife Service, and the New Hampshire Department of Fish and Game, prepare and file for Commission approval, a final Comprehensive Land Use, Wildlife, and Bald Eagle Plan (Plan) for the Ayers Island Project. The Comprehensive Plan shall include the following:

- Bald Eagle Management Plan
- Wildlife Management Plan
- Buffer Zone Management Plan

The Licensee shall prepare the final Comprehensive Land Use, Wildlife, Bald Eagle and Recreation Management Plan after consultation with the U.S. Fish and Wildlife Service and the New Hampshire Department of Fish and Game. 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 U.S. Fish and Wildlife Service and the New Hampshire Department of Fish and Game, and specific descriptions of how the agencies' comments and recommendations are accommodated by the plan. The Licensee shall allow 30 days for the agencies to comment and 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. No land-disturbing activities shall begin at the project 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.

Bald Eagle Management Plan

The final project-specific Bald Eagle Management Plan shall include, but not be limited to the following:

(1) a description of the Licensee's role and necessary measures to participate in the existing Statewide Wintering Bald Eagle Monitoring Program;

(2) policies for cooperation with and facilitating access to areas for personnel affiliated with the existing Statewide Wintering Bald Eagle Monitoring Program;

(3) the specific methodology of implementing the necessary measures identified in part 1, above;

(4) the cost of implementation and maintenance of the protection measures;

(4) an implementation schedule for the necessary measures for the statewide program;

(5) a description of provisions to be taken to develop site-specific protection and enhancement measures in the event that bald eagles become established at the project site in the future; and

(6) a monitoring and annual reporting format and schedule for participation in both the statewide program and for site-specific bald eagle monitoring.

Wildlife Management Plan

The final Wildlife Management Plan shall provide for, but not be limited to the following:

(1) cooperating with the Audubon Society of New Hampshire in conducting a survey of swallow nest sites and foraging areas within the Ayers Island Project area for a minimum of two seasons;

(2) filing a Swallow Survey Schedule and a schedule for filing survey results and agency comments with the Commission for review;

(3) pending survey results, if deemed necessary by the Commission, developing and filing for Commission approval, and upon approval implement a site-specific management plan to enhance nest site availability for swallows.

Buffer Zone Management Plan

The Licensee shall consult with the Towns of Bristol, Bridgewater, New Hampton, and Ashland and, at a minimum, shall include the following in the Buffer Zone Management Plan:

(1) map of project showing project boundary;

(2) the Buffer Zone Management Plan to include (for project lands owned by the applicant):

(a) the criteria used for selecting the buffer zone widths (using 200 feet as a rule of thumb);

(b) allowable uses for the buffer zone lands;

(c) conditions to be specified for such allowable uses;

(d) maps delineating the shoreland protective buffer zone area; and

(e) how existing zoning rules of the Pemigewasset Overlay District were incorporated into the plan.

Article 412. Within 6 months of license issuance, the Licensee shall file for Commission approval and, upon approval, shall implement, a final recreation plan to include the following:

(1) an additional picnic table and trash cans at the picnic area;

(2) a trail from the picnic area to the boat put-in area;

(3) widening the boat put-in area to accommodate a vehicle turn-around area;

(4) a toilet at the boat put-in area;

(5) maintaining the boat put-in access road to include snow plowing, when necessary after March 1 and through October 31 of each year;

(6) developing and maintaining a canoe portage trail, including signs large enough to direct boaters safely to the project's boat take-out and put-in sites;

(7) providing a staff gage downstream of the project dam that shows elevation and flow rate;

(8) documentation of consultation with the New Hampshire Department of Resources and Economic Development, the U.S. Army Corps of Engineers, the Town of New Hampton, the U.S. National Park Service and the Appalachian Mountain Club, and a discussion of whether, and to what extent, the boat take-out area should be improved. If the U.S. Army Corps of Engineers permits the use of its lands for the boat take-out area improvements, the Licensee shall fund the stabilization of the shoreline at the boat take-out site and construction of wooden steps leading down the embankment to the water. These improvements would be a one-time cost to the Licensee. If the

U.S. Army Corps of Engineers does not approve of the boat take-out area improvements, the Licensee shall file a report investigating the feasibility of providing such one-time funding of a safe whitewater boat take-out area elsewhere along the river;

(9) a plan for consulting with the Appalachian Mountain Club and the Merrimack Valley Paddlers marking large rock impediments, and removing the large rock impediments at the boating put-in during construction of the plunge pool;

(10) a plan for providing interpretive and directional signs at the Ayers Island Project;

(11) costs for the construction and yearly maintenance of each facility;

(12) a discussion of the erosion and sediment control measures to be used during construction of the facilities and access;

(13) a description of the compatibility of the construction materials for the recreational facilities with the natural and scenic character of the surroundings; and

(14) a construction schedule.

Article 413. The Licensee shall release flows for whitewater boating on weekends and holidays (Memorial Day and Independence Day) from May 1 to August 30 to coincide with peak hours of whitewater boating use below Ayers Island Dam. The Licensee shall provide a minimum flow of 840 cubic feet (cfs) per second for 6 hours minimum (from 10:00 a.m. to 4:00 p.m.) on the aforementioned days provided that impoundment storage can be replenished to elevation 453.33 feet U.S. Geological Survey Datum (USGS) within the 24-hour period following the start of each day's release, in accordance with the Licensee's daily peaking operation. In the event a flow of 840 cfs can not be provided (due to low flow conditions on the river) on both Saturday and Sunday (or holiday), the Licensee shall attempt to make the minimum 840 cfs, 6 hour release on the Sunday (or holiday) provided the impoundment storage can be replenished to 453.33 feet USGS within the 48-hour (or 72-hour) period following the start of the weekend. If the impoundment cannot be replenished to elevation 453.33 feet USGS within this 48-hour (or 72-hour) period, whitewater releases shall not be provided. These flow releases will be subject to the ramping rate provisions required by Article 406.

The Licensee shall also provide one special whitewater boating release of 1000 cfs (Saturday or Sunday) in July and

one special whitewater boating release of 1500 cfs (Saturday or Sunday) in August for 6 hours on each occasion (10:00 a.m. to 4:00 p.m.). The August release shall occur in the middle to end of August, and the Licensee shall consult with the Appalachian Mountain Club and the Merrimack Valley Paddlers by May 1 of each year to schedule the August special release. These flow releases will be subject to the ramping rate provisions required by Article 406.

The Licensee shall release flows for whitewater boating on weekends and holidays (Labor Day and Columbus Day) during September and October. The Licensee shall provide a minimum flow of 840 cfs for a minimum of 6 hours on the aforementioned days provided that the impoundment storage can be replenished to 453.33 feet USGS within the 24-hour period following the start of each day's release in accordance with daily peaking operation. In the event a minimum flow of 840 cfs can not be provided (due to low flow conditions on the river) on both Saturday and Sunday (or holiday), the Licensee shall attempt to make the minimum 840 cfs, 6 hour release on the Sunday (or holiday) provided the impoundment storage can be replenished to 453.33 feet USGS within the 48-hour (or 72-hour) period following the start of the weekend. If the impoundment cannot be replenished to elevation 453.33 feet USGS within this 48-hour (or 72-hour) period, whitewater releases will not be provided. These flow releases will be subject to the ramping rate provisions required by Article 406.

The Licensee shall also provide and maintain a flow information telephone line, including a monitoring log, and provide information specifying times when the flow information will be available. The Licensee shall also designate a contact person or persons who will be available to address whitewater boating issues and concerns.

Article 414. (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-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. 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 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) The Licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the FPA. The Licensee's failure to file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)

Linwood A. Watson, Jr.,
Acting Secretary.