Appendix 1-1

Webster-Pembroke
Order Granting Exemption from Licensing for a Small Hydroelectric Project
of 5 MW or Less and Denying Major License Application
dtd. February 24, 1983

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: C. M. Butler III, Chairman;
Georgiana Sheldon, A. G. Sousa
and Oliver G. Richard III.

Suncook Power Corporation	)	Project No. 3179-001
Pembroke Hydro Corporation	)	Project No. 3185-001

ORDER GRANTING EXEMPTION FROM LICENSING FOR SMALL HYDROELECTRIC PROJECT OF 5 MW OR LESS AND DENYING MAJOR LICENSE APPLICATION

(Issued February 24, 1983)

Suncook Power Corporation (SPC) filed an application for Short Form License (Minor) under Part I of the Federal Power Act (Act), 16 U.S.C. §§791(a)-825(r), for the Webster-Pembroke Project No. 3179-001. SPC subsequently amended its application to one for major license at an existing dam. Pembroke Hydro Corporation (PHC) filed a competing application for exemption from all or part of Part I of the Act pursuant to 18 C.F.R. Part 4 Subpart K (1982), implementing Section 408 of the Energy Security Act (ESA) of 1980, for the proposed Webster-Pembroke Project No. 3185-001.

Public Notice

Notice of SPC's application for minor license was published October 30, 1980. Notice of its amended application changing to an application for major license was issued April 2, 1981. Comments on the amended application were received from the U.S. Department of the Interior (DOI), the Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (Corps) and the New Hampshire Fish and Game Department (NHFG). None of the commenters objected to the issuance of a license for the proposed project.

Notice of PHC's application for exemption was published in accordance with Section 408 of the ESA and the Commission's regulations. Comments were requested from interested Federal and State agencies including the U.S. Fish and Wildlife Service and the State Fish and Wildlife Agency. All comments and protests that were filed have been considered. No agency has any objection relevant to issuance of the exemption.

Site Description

The proposed projects would utilize the existing low head Webster and Pembroke Dams on the Suncook River in the towns of Pembroke and Allenstown, Merrimack County, New Hampshire. Although both dams were previously used to produce hydroelectric energy, neither dam is currently being used for that purpose.

Webster Dam is located approximately 1,800 feet upstream of Pembroke Dam. A diversion canal runs north (downstream) approximately 500 feet from the headgate structure of Webster Dam. The existing Pembroke powerhouse abuts the Pembroke Dam and is approximately 30 feet downstream of the Main Street Bridge.

Proposal Which Would Better Develop the Water Resource

Section 4.104(e)(2) of the regulations provides that, as between a competing license and exemption application, the first-filed will be favored "unless the Commission determines the plans of the subsequent application would better develop the water resource." Thus, SPC, as the first applicant to file, would be favored unless PHC's plan would better develop that portion of the Suncook River under consideration.

SPC proposes the installation of four Francis-type turbine generators having a total rated capacity of 1880 kilowatts (kW). Annual energy generation is estimated by SPC at 8,200,000 kilowatt hours (kWh). The estimated total direct construction cost of the proposed project is $2,560,000.

PHC proposes the installation of one Kaplan-type turbine generator having a total rated capacity of 2,600 kW. Annual energy production is estimated by PHC at 8,500,000 kWh. The estimated total direct construction cost of PHC's proposed project is $2,524,400.

Power produced at either project would be sold to the local utility. Therefore, the market for the power output is not an issue in this case. The selling price of power from either proposed project will depend, in large part, on negotiations between the individual applicant and the utility to which the power is sold. Because such price is unknown at this point, and cannot be accurately estimated, it has not been considered as a factor in our decision." 1/

Environmental constraints on the development of either project would be substantially the same, since both proposed projects are practically identical. Identical minimum flow requirements, and consideration of fisheries, recreational resources, and historical and archeological resources would affect each project proposal in the same manner, and it is concluded that environmental considerations favor neither the license applicant nor the exemption applicant.

1/ See discussion at 5 infra.

Based on a comparison of these factors, PHC's plan would appear to better develop the water resource in question in that it would result in the installation of a hydroelectric project producing 5.9% more energy annually. 2/

SPC argues, however, that its proposed four turbine configuration is superior to the single turbine plan of PHC because the greater operational flexibility and reliability of such a plan result in a clear advantage in overall energy production.

Flow duration curves used by Staff to calculate energy production at the applicants' proposed projects were derived from data published by the U.S. Geological Survey. These data, which are the same as those used by the applicants, indicate that PHC's proposed project will produce more energy annually than SPC's. Additionally, due to the high degree of dependability of hydro generating units (98%), a single unit plan would not be less reliable than a multi-unit development.

SPC further argues that PHC's plan is not as good as its own because PHC's plan will result in significant environmental problems due to penstock routing. PHC proposes to construct a new 460 foot long 8 foot diameter penstock with a route similar to that proposed by SPC. Unlike SPC, however, a portion of PHC's penstock would be located in the river channel and floodway beneath the Main Street Bridge. SPC argues that this can reasonably be expected to increase flooding impact upstream of the Main Street Bridge and is prohibited by existing local land use regulations implementing the Federal Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). Furthermore, PHC's penstock routing, according to SPC, is likely to cause ice jamming in the Main Street Bridge floodway.

According to PHC, development in the Suncook River floodway is permitted by local zoning by-laws, promulgated pursuant to Federal Emergency Management Agency (FEMA) guidelines, upon "an affirmative

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2/ The estimation of 5.9% greater energy which will be produced by PHC's proposed project is based on the following: First, PHC has, pursuant to a letter from the U.S. Environmental Protection Agency, included a 10 cfs minimum flow in its energy computation. This minimum flow was also considered by staff in its energy computations for PHC. A similar minimum flow was not included in SPC's license application or its energy computation. Secondly, SPC included a small and insignificant loss of energy for maintenance which Staff did not include in the PHC computation. If the minimum flow and 1% loss of energy for maintenance are factored into these computations, the resultant average energy output of PHC's and SPC's proposed projects is 6.35 GWH and 6.07 GWH, respectively, using a monthly flow duration curve, or 7.56 GWH and 7.14 GWH, respectively using a daily flow duration curve. Because a daily, versus monthly, flow duration curve provides a more accurate estimate Staff has adopted the former in computing and comparing energy gains of the proposed projects. The .42 GWH difference in favor of PHC's proposed project (7.56 GWH - 7.14 GWH = .42 GWH) equals 5.9%.

finding by the Board of Adjustment that the building can be so placed, constructed and serviced so as not to endanger the health or safety of the general public by causing any increase in flood levels during the 100 year flood." 3/ A study conducted for Pembroke to determine potential changes in water surface elevation resulting from the proposed development indicates that there will actually be a 0.5 foot decrease in the 100 year flood elevation beneath the bridge with the proposed penstock in place.

Staff concurs with PHC's assessment of the impact of the penstock on the floodway and, in addition, has concluded that PHC's penstock should not increase the risk of ice jamming at that location because the penstock would be located in the high velocity outside portion of the river bend. Ice normally collects on the inside of a bend in the river channel, where flows are lower in velocity.

Finally, PHC argues that its plan is better adapted to develop the Suncook River because it currently holds all property interests necessary to develop and operate the proposed project. This, according to PHC, will allow it to complete construction of the project within 18 months of issuance of an exemption. Under the Commission's existing regulations, property ownership is not an independent factor for consideration in deciding between a license application and an exemption application. 4/ It has therefore not been considered herein.

3/ PHC has not, as yet, provided evidence that the Board of Adjustment for Merrimack County has made such an affirmative finding. The issuance of the requested exemption, however, is conditioned on PHC obtaining any necessary determination from the Board or FEMA, as appropriate, regarding floodway impact before construction of the proposed project.

4/ Section 4.104(e)(2) of the regulations states: "If an application for a license and an application for exemption from licensing are each accepted for filing and each propose to develop a mutually exclusive project, the Commission will favor the application first filed, unless the Commission determines the plans of the subsequent applicant would better develop the water power potential of the affected water resources." Thus, the significance of site ownership has already been built into the regulations, and cannot properly be invoked again. In Order No. 106, wherein the Commission promulgated these rules, it stated:

> The Commission believes that the [exemption] rule should not discourage interested non-owners who wish to exploit the full water power potential of a site in circumstances where the project owner does not take timely action to protect itself and develop the site adequately. Therefore, under §4.104 the protection afforded the project owner has been restricted as follows: *** where there has been no permit, a non-owner license applicant will be preferred to an exemption applicant

Given the fact that PHC's proposal would result in more energy production at essentially the same cost, we hereby find its plan would better develop the waterway in question. Therefore, pursuant to Section 4.104(e)(2) of the regulations, we will favor the application of PHC over that of SPC and issue PHC the exemption it has requested.

Standard Article 2, included in this exemption, requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. The terms and conditions referred to in Article 2 are contained in any letters of comment by these agencies which have been forwarded to PHC in conjunction with this exemption.

Should PHC contest any terms or conditions that were proposed by Federal or State agencies in their letters of comment as being outside the scope of Article 2, the Commission shall determine whether the disputed terms or conditions are outside the scope of Article 2.

Special Articles 7, 8 and 9 have been included in the interest of safety and the protection of environmental values affected by the proposed project.

The Commission orders:

(A) Webster-Pembroke Project No. 3185-001 as described and designated in Pembroke Hydro Corporation's application filed on April 22, 1981, as amended July 13, 1982, is exempted from all of the requirements of Part I of the Federal Power Act, including licensing, subject to the standard articles in §4.106 of the Commission's regulations, 18 C.F.R. §4.106, 45 Fed. Reg. 76115

4/ (continued from previous page) that files second and in competition with a license applicant, unless the plans of the exemption applicant would better develop the water power potential of the affected water resources... .

FERC Statutes & Regulations, Regulations Preambles 1977-1981, ¶30,204 at 31,363 (Nov. 7, 1980). Indeed, even where the exemption applicant files first, its ownership preference may be overcome by a license application which proposes more than 7.5 mw installed capacity.

(November 18, 1980), and the following Special Articles:

Article 7. Exemptee shall consult with the Board of Adjustment for Merrimack County or the Federal Emergency Management Agency (FEMA), as appropriate, to determine what effect the installation of the project penstock would have on the flood hazard to property above the Pembroke Dam. At least sixty days prior to the start of construction, Exemptee shall file with the Director, Office of Electric Power Regulation (OEPR), a copy of an agreement with FEMA on any measures deemed necessary to prevent an increase in flood hazard caused by project construction. If FEMA and Exemptee cannot agree upon such appropriate measures, the Director, OEPR, reserves the right to require appropriate modification to project structures to mitigate increased flood hazard caused by the project penstock.

Article 8. This exemption is subject to the provisions of 18 C.F.R., Part 12.

Article 9. Exemptee shall maintain an instantaneous minimum flow release of at least 10 cfs in the bypassed stretch of the Suncook River between Webster Dam and Pembroke Dam and below the tailrace.

(B) The license application of Suncook Power Corporation for the Webster-Pembroke Project No. 3179-001 filed on July 9, 1980 and amended March 5, 1981 and July 9, 1982, is denied.

By the Commission.

(S E A L)

Kenneth F. Plumb

Kenneth F. Plumb,
Secretary.