71 FERC ¶ 61,263

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.

Comtu Falls Corporation) Project No. 7888-010

ORDER AMENDING LICENSE

(Issued June 1, 1995)

On September 22, 1994, the Commission issued an order invoking its reserved authority to require Comtu Falls Corporation (Corporation) to file a downstream fish passage plan for its Comtu Falls Project after consultation with the U.S. Fish and Wildlife Service (FWS) and the Vermont Department of Fish and Wildlife (Vermont). 1/ The Corporation filed such a plan on October 25, 1994. On January 20, 1995, a notice was issued of the availability of a draft Environmental Assessment (draft EA) of the plan filed by the Corporation, as well as an alternative design proposed and recommended by the Commission's staff. Comments on the draft EA were submitted by the FWS, Vermont, the State Historic Preservation Officer, and the Corporation. The Corporation filed responses to the comments by the agencies. On March 29, 1995, the Commission issued an order requiring the installation of interim fish passage measures, pending completion of a final EA that would address which of several possible designs would be the best, and whether the Corporation should be required to install a facility of that design in view of possible adverse effects on the environment, economics, safety, historic, or aesthetic resources of the project. 2/

The final Environmental Assessment (EA), issued as an appendix to this order, concludes that the planting of salmon in the Black River upstream of the project is beneficial to the Atlantic salmon restoration effort for the Connecticut River Basin, and that downstream fish passage facilities are needed at the Comtu Falls Project to provide for downstream migration of juvenile salmon smolts. 3/ Furthermore, the EA approves the

1/ 68 FERC ¶ 61,356.

2/ 70 FERC ¶ 61,354.

3/ During their earliest life stage, one to two weeks old, salmon are called "fry." Thereafter, until they begin active migration to the sea, they are called "parr." During their period of downstream migration, they are called "smolts" or juvenile salmon.

Corporation's design for such facilities and concludes that their installation and operation would have no significant adverse effects on the environment, the economics or safety of the project, or its aesthetic or historic resources. The Commission concurs in the conclusions of the EA and will amend the Corporation's license to require the installation and operation of the fishway facility with the design proposed by the Corporation.

BACKGROUND

The Comtu Falls Project is situated on the Black River in Springfield, Vermont. The 460-kilowatt project includes a powerhouse, an intake with trashrack having 1.5-inch clear bar spacing and set at a 45 degree angle to the intake, and a dam approximately 128 feet long with 2-foot-high flashboards, situated on the top of a natural falls. The dam tapers from 5.5 feet high at its western end to nothing with irregular bedrock comprising the last 17 or 18 feet as it extends across the river from the intake to the east shore. Average generation is estimated at 2,367,700 Kwh annually.

The history of this proceeding has been described in detail in the Commission's orders of September 22, 1994, January 18, 1995, 4/ and March 29, 1995. The September 22 order was issued under the authority of Article 11 of the Corporation's license 5/ because the licensee did not agree voluntarily to install downstream fish passage facilities as requested by the FWS and the Commission's staff. The Corporation has presented numerous arguments in the course of these proceedings against having to install the requested facilities. We have dealt with

4/ 70 FERC ¶ 61,031.

5/ Article 11 of the Comtu Falls Project license provides:

> The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate ... such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project ... is located, after notice and opportunity for hearing.

36 FERC at p. 63,125, ordering paragraph (E), incorporating by reference the standard articles in Form L-15, 54 FPC 1883, 1886 (1975).

these arguments in the previous orders. The questions remaining, as we said in the January 18 order, are whether the planting of salmon in the Black River upstream of the project was beneficial to the restoration effort, 6/ what would be the best design for a downstream passage facility, and whether the best designed fishway would have detrimental effects that might outweigh the benefit to the fishery environment. 7/

The March 29 order required the Corporation to install interim fish passage measures at the Comtu Falls Project by removing a section of the project's flashboard for a two and one-half month period beginning April 1, 1995, or as soon as the removal could be practically effectuated. The Corporation filed a letter on April 24, 1995, indicating that the interim fish passage measures were in operation by April 12, 1995. 8/

6/ In the March 29, 1995 order requiring interim fish passage measures, we reached the tentative conclusion, on the basis of information in the draft EA and other record evidence, that using the Black River above Comtu Falls as nursery habitat for salmon fry would help to achieve the goals of Atlantic salmon restoration in the Connecticut River Basin. 70 FERC ¶ 61,354 at p. 62,042. In this order we make a definitive finding that such stocking is beneficial to the restoration effort on the basis of the final EA issued with this order.

7/ 70 FERC at p. 61,104.

8/ The Corporation also asserts that downstream passage facilities at some of the other dams above and below Comtu Falls had not yet been installed, or at least were not visible in photographs taken by the Corporation on April 14, 1995.

The Cavendish Project (FERC No. 2489) has interim facilities operating and has plans and construction schedules for permanent facilities approved. The licensees of Fellows Dam (FERC No. 9648), Lovejoy Dam (FERC No. 9649) and Gilman Dam (FERC No. 9650), depicted in the Corporation's photographs, have all been requested by the Commission's staff to provide plans for interim measures for downstream passage to be initiated this year, and the recommendations of the FWS for permanent facilities. The licensees have indicated that the only route for passage at these projects in the interim (1995) will be spillage over the crest of the dams, since none of these projects have operable flashboards.

At Slack Dam, the other project depicted in the Corporation's photographs, an exempted project, mandatory

(continued...)

DISCUSSION

The final EA concludes that the stocking of Atlantic salmon fry in the reaches of the Black River above Comtu Falls will be beneficial to the efforts to restore Atlantic salmon to the Connecticut River Basin, and that the installation, operation, and maintenance of the downstream fish passage facilities at the Comtu Falls Project is necessary for the salmons' safe downstream migration. The FWS has stated that, in order to achieve successful salmon restoration in the Connecticut River Basin, salmon habitat in the basin must be used to the fullest to produce smolts and future returns; that the Black River above Comtu Falls has been identified as suitable habitat; and that salmon fry have recently become available in sufficient quantities to stock more tributaries than those originally designated for the fry-release program.

In early 1993, 23,124 Atlantic salmon fry were stocked in the Black River between Ludlow and Cavendish, Vermont, above Comtu Falls. In the fall of 1993, 67,767 0+ parr 9/ were stocked. In 1994, 209,200 salmon fry were stocked, and according to the FWS, greater numbers are expected to be stocked in 1995. 10/ Mortality rates for entrained juvenile fish at the Comtu Falls Project may range from 7.6 to 13 percent, averaging 11 percent. 11/ Smolts migrating downstream on the Black River pass numerous dams, and fish passage facilities at these dams are needed to ensure maximum survival. Returning adult salmon that have been reared in the Black River will contribute to the restoration program by providing a source of eggs for fry production from Connecticut River stock. 12/

The EA also concludes that the design for permanent fish passage facilities submitted by the Corporation in October 24, 1994, is superior to alternative designs proposed by the Commission's staff in the draft EA and the FWS in its comments on the draft EA. The Corporation proposes replacing 33 feet of the

---

8/(...continued)
conditions require the licensee to provide fish passage facilities when prescribed. According to the FWS, the facilities have been installed and the exemptee is prepared to operate the facility upon FWS' request.

9/ 0+ parr are salmon between two weeks and one year of age.

10/ Final EA, attached to this order, at 6.

11/ These mortality rates are based on studies of Kaplan turbines, the type used at the Comtu Falls Project.

12/ Final EA at 10.

2-foot-high flashboards adjacent to the proposed discharge weir with a 2-foot-high fixed concrete crest. A 2.5 foot wide by 2.0 foot high discharge weir would be opened in this concrete cap at the west abutment of the dam and trashrack to produce a 20-cubic feet per second flow to attract/convey emigrating smolts. The flow would discharge into a 3-foot-deep plunge pool to be constructed on the bedrock falls below the discharge. The Corporation also proposes to cap 18 feet of the east edge of the dam to the height of the flashboards to cover the exposed bedrock. The remaining 74 feet of the dam would retain the 2-foot-high flashboards. The estimated cost of the facility would be between $75,000 and $100,000.

In the draft EA, the staff proposed a downstream passage facility consisting of an 18- to 24-inch diameter PVC pipe that would be fitted into the flashboard section nearest the trashrack or into a collection box constructed in the same location to convey emigrating salmon smolts to the tailwater pool. The estimated cost of this alternative would be less than $10,000. However, because of ice in the Black River in the winter, the staff concluded that the bypass entrance and section of the conveyance pipe would probably have to be replaced every year, and would require additional maintenance because of clogging from debris.

The FWS proposed a passage facility consisting of a notch approximately 18-inches to two-feet deep, and 3 feet wide, with removable stoplogs that would allow for bypass depth adjustments as headpond levels change. The FWS proposal would include the plunge pool as proposed by the Corporation. The advantage of the FWS proposal is that it would provide for attraction/conveyance flows even when the flashboards might be washed out by flooding or damaged by ice. However, the staff concluded that, with the elevation of the top of the penstock higher than the elevation of the crest of the dam, flow patterns could develop that would affect project operation, but more importantly, the efficiency of the fish passage facility. Operation of the FWS alternative during low headpond levels would create irregular flow patterns, such as eddies and vortices, in front of the project's intake that could interfere with the guidance efficiency of the trashrack as well as project operation. Such problems could require modifications to the intake, with the result being that operation of the FWS alternative could be substantially more expensive than the Corporation's proposed design.

Finally, the EA concludes that the installation, operation, and maintenance of the fish passage facilities proposed by the Corporation will have no significant adverse effects on the environment, or the economics, safety, or aesthetic and historic character of the project.

Operation and maintenance costs would be negligible. The visual character of the project site will not be significantly affected, because the licensee must maintain the minimum flow of 4 cfs over the crest of the dam, which is sufficient to maintain an attractive veil of water over the falls. Furthermore, the plunge pool would not be readily visible from the bridge where the falls are usually seen, and would not affect the veil of water passing over the dam's crest.

As discussed in the EA, the project dam was considered to be a contributing element to the Springfield Historic District (District). After consultation with the Vermont State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act, the SHPO recommended that the project dam, because of its contribution to the District, be documented prior to construction of any fish passage facility. The Corporation, by letter to the SHPO dated May 24, 1995, disputed the fact that the dam was a contributing element to the District and stated that the SHPO agreed to reevaluate its recommendation to require documentation. In order to allow the Corporation and the SHPO to attempt to resolve this matter, the Corporation will be provided additional time to consult with the SHPO. After the licensee has completed its consultation, the Commission will determine what, if any, mitigation measures may be appropriate.

The Commission concurs in the conclusions of the EA, for the reasons expressed in the EA, and accordingly, we will exercise our authority under Article 11 of the Corporation's license to amend the license to provide for the installation, operation, and maintenance of the downstream fish passage facilities proposed by the Corporation, with the facility to be operational by April 1, 1996. 13/

In connection with construction of the permanent passage facilities, the Corporation should consult with the resource agencies in developing functional design drawings to be filed for Commission approval. Further, the Corporation must provide final contract drawings and specifications for the pertinent features of the revised project to the Commission's New York Regional Office (NYRO) and the Director, Division of Dam Safety and

13/ In comments on the EA, the Corporation requests that we review the salmon restoration program in the year 2001 and allow for discontinuance of operation of the fish passage facility if the FWS has not met its goal of returning adult Atlantic salmon to the Connecticut River as stated in the FWS' 1989 EIS on salmon restoration. At any time, the licensee may file a request for Commission approval to stop operation of the downstream fish passage facility, after consultation with the appropriate resource agencies.

Inspections (Director), for review prior to start of construction. Furthermore, the Corporation must submit to the NYRO and to the Director copies of any approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval by the licensee of any contractor-designed cofferdams and deep excavations prior to the start of construction to ensure that construction of any cofferdams and deep excavations is consistent with the approved designs. Finally, the Corporation must submit "as built" drawings after the proposed installations are completed.

The Commission orders:

(A) The licensee's fish passage proposal filed on October 25, 1994, is approved.

(B) Within 30 days of issuance of this order, the licensee shall file for Commission approval, detailed functional design drawings of the downstream fish passage proposal approved herein, after consultation with the U.S. Fish and Wildlife Service and the Vermont Department of Fish and Wildlife. The Commission reserves the right to require changes to the facility's design.

(C) The licensee shall complete construction of the downstream fish passage facility by April 1, 1996.

(D) The downstream fish passage facility shall be operated annually from April 1 through June 15. Operation of the facility may be temporarily modified if required by operating emergencies beyond the control of the licensee and upon mutual agreement among the licensee, the Vermont Agency of Environmental Conservation, and the U.S. Fish and Wildlife Service.

(E) The licensee, at least 60 days prior to the start of construction, shall submit one copy to the Commission's New York Regional Director and two copies to the Director, Division of Dam Safety and Inspections, of the final contract drawings and specifications for the pertinent features of the project. The Director, Division of Dam Safety and Inspections, may require changes to the plans and specifications in order to assure a safe and adequate project.

(F) The licensee shall review and approve contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of the cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall submit to the Commission's New York Regional Director and to the Director, Division of Dam Safety and Inspections, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

(G) Within 90 days of completion of the modifications to the spillway and fishway, the licensee must file, for Commission approval, revised exhibit drawings to describe and show the modifications as built.

(H) The licensee shall consult with the Vermont State Historic Preservation Officer (SHPO) to reevaluate the SHPO's recommendation to require documentation of the Comtu Falls Dam. The licensee shall file, within 20 days from the date of this order, the results of the consultation and, if available, comments from the SHPO. If the licensee does not agree with the SHPO's final recommendations regarding documentation of the dam, it must provide the reasons for its disagreement. The Commission reserves the right to require the licensee to undertake the mitigative measures necessary to ensure protection of cultural resources, including documentation of the Comtu Falls Dam. The licensee shall not undertake any construction activity until notified by the Commission that construction can proceed.

(I) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

By the Commission.

(S E A L)

Lois D. Cashell,
Secretary.