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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Central Vermont Public
Service Corporation

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Project No. 2489-020

ORDER APPROVING DOWNSTREAM FISH PASSAGE FACILITY
EFFECTIVENESS MONITORING PLAN

JAN 22 1997

On November 15, 1996, Central Vermont Public Service Corporation (licensee) filed a report of the results of the 1996 evaluation of the downstream fish passage facilities at its Cavendish Hydroelectric Project, pursuant to the Order Approving Downstream Fish Passage Facility Operation, Maintenance, and Effectiveness Monitoring Plans, issued December 11, 1995. The project is located on the Black River in Windsor County, Vermont.

BACKGROUND

The Commission's December 11, 1995 order approved the licensee's plan for evaluating the effectiveness of the downstream fish passage facility for the project. ^{1/} The plan outlined the licensee's proposal to determine what percentage of Atlantic salmon smolts approaching the powerhouse intake pass the project via the passage facility. The plan also included provisions to evaluate the condition of smolts in the plunge pool below the passage facility.

The approved plan scheduled fish passage monitoring to begin in April 1996 and be completed by mid-June 1996, with a draft study report completed and submitted to the resource agencies for review and comment by September 15, 1996. A final report, including any proposals to modify the passage facility or for additional monitoring was scheduled to be filed with the Commission by November 15, 1996.

With respect to the final monitoring report, the Commission, pursuant to its December 11, 1995 order, reserved the right, after review of the report and resource agency comments, to require the licensee to modify the passage facility or conduct additional monitoring, if necessary.

^{1/} The downstream fish passage facility consists of a transition box in the spillway adjacent to the penstock intake. Inflow to the box is controlled by a motor-operated gate, allowing variable flow up to 20 cubic feet per second (cfs). Stoplogs are installed to form the back of the box to maintain a minimum water depth. Fish enter the box and pass down the spillway on a 3-foot-wide chute into a three-foot-deep plunge pool, with a channel at the downstream end for flow return to the project's bypass channel.

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Project No. 2489-020

-2-

1996 STUDY RESULTS AND LICENSEE RECOMMENDATIONS

The 1996 passage study was conducted to determine the efficiency of the downstream fish passage facility for passage of salmon smolts and to evaluate the condition of the smolts in the plunge pool after passage through the fishway. To facilitate monitoring of smolt using the bypass, the plunge pool was converted to a collection system.

A total of 600 marked hatchery smolts were divided into 2 lots, with 275 of each lot released into the Cavendish impoundment and their passage monitored. The remaining 25 smolts of each lot were kept as controls, with 38 surviving. These were later released immediately above the dam.

Of the Lot 1 smolts released, 9 percent were captured in the monitoring pool. Of smolts in Lot 2, some 5 percent were captured. None of the control group released just above the dam were captured. Also, 22 unmarked (wild) smolts were captured during the study.

The licensee reports that the field work was complicated by several factors, primarily related to prolonged high river flow and associated debris. These conditions delayed smolt releases long into the migration period, which could have affected migration behavior. Further, the efficiency of the collection system (i.e., the plunge pool) was never verified because debris often blocked the outlet screen resulting in spilling. Because the study results were limited and inconclusive, the licensee recommends the 1996 study be repeated in 1997.

The licensee proposes that two study lots of 300 hatchery smolts be released into the Cavendish impoundment when the river temperature has reached 50f and there is no spillage at the dam. Control lots will be held. Fishway use will be determined by recaptures in the monitoring pool at the base of the dam. The monitoring will begin as soon as conditions permit and will be completed by about June 15, 1997. A draft study will be submitted to the resource agencies by September 15, 1997, with a final report, to include any proposals for modifications to the downstream fish passage facility or further monitoring, filed with the Commission by November 15, 1997.

AGENCY COMMENTS

The U.S. Fish and Wildlife Service (FWS) responded verbally to the licensee's request for comments on the 1996 study report. The FWS recommended that no fishway trapping in the plunge pool/collection system be conducted until study smolts are released.

Project No. 2489-020

-3-

The Vermont Department of Fish and Wildlife (VDFW) by letter dated November 12, 1996, approve the licensee's proposed plan for 1997, provided the licensee: (1) obtains a collector's permit; (2) checks the collection system often during the day; (3) uses punch plate with larger holes in the plunge pool to reduce debris clogging; (4) converts the plunge pool into a collection/monitoring tank only during the study with the test smolts; (5) considers changes to the fishway entrance weir; (6) coordinates closely with the White River National Fish Hatchery on all smolt allocation, handling, tagging and transport; and (7) circulates a draft report of the study results for comment to include a determination if changes to the facility or additional monitoring are needed.

CONCLUSIONS AND RECOMMENDATIONS

The licensee's proposed study plan for 1997, as described in its November 15, 1996 filing, is similar to that approved for its study completed in 1996, incorporates the recommendations of the resource agencies, and should be approved. The plan notes that high water and excess spillage during the 1996 study period likely provided an alternate route for smolt migration and that debris in the fishway monitoring system reduced the efficiency of monitoring. Therefore, the licensee will attempt to conduct the study under more suitable flow and temperature conditions during 1997. Again, however, the Commission should reserve the right to require the licensee to modify the passage facility or conduct additional monitoring, should the results of next year's monitoring report indicate the need for such.

The Director orders:

(A) The plan for evaluating the effectiveness of the downstream fish passage facility for the Cavendish Hydroelectric Project during 1997, filed on November 15, 1996, is approved with the addition in ordering paragraph (B) below.

(B) The Commission reserves the right to require the licensee to modify the passage facility or conduct additional monitoring, should the results of fish passage monitoring during 1997 indicate the need for such.

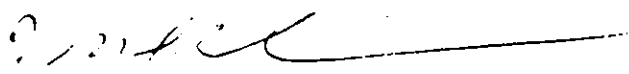
(C) The licensee shall file an original and eight copies of any filing required by this order with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DLC, HL-21.1
888 First Street, N.E.
Washington, D.C. 20426

Project No. 2489-020

-4-

(D) 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.


J. Mark Robinson
Director, Division of
Licensing and Compliance