

134 FERC ¶ 62,246
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Central Vermont Public Service Corporation

Project No. 11478-013

ORDER APPROVING OPERATIONS COMPLIANCE PLAN

(March 15, 2011)

1. On February 19, 2010, Central Vermont Public Service Corporation (licensee) filed an operations compliance plan (plan) pursuant to article 401 of the license for the Silver Lake Hydroelectric Project (FERC No. 11478).¹ The project consists of three major components: (1) Sugar Hill storage reservoir and Goshen dam; (2) Sucker Brook diversion dam; and (3) Silver Lake Development. The project is located on Sucker Brook in Addison County, Vermont. The project does not occupy any federal lands but is surrounded by the Green Mountain National Forest.

Background

2. Article 401 requires the licensee to file various plans, for Commission approval, pursuant to Vermont Agency of Natural Resources (VANR) final water quality certification (WQC) conditions. The licensee is required to file a comprehensive Operations Compliance Plan that addresses several requirements of article 401 and meets WQC conditions C, D, E, F, G, and H. The WQC conditions C, D, E, F, G, and H include the following plans, respectively: (1) Ramping Plan at Goshen Dam; (2) Ramping Plan at Station Tailrace; (3) Smelt Spawning Protection Operating Protocol; (4) Plan for Method to Maintain Conservation Flows Below Sucker Brook Diversion Dam; (5) Operating Plan for Sugar Hill Reservoir; and (6) Monitoring Plan for Reservoir and Flow Management. The licensee is also to include in their filing a letter from the VANR approving the plans.

Proposed Plans

Ramping Plan at Goshen Dam

3. As required by Condition C of the WQC, the Ramping Plan at Goshen Dam addresses the measurement of ramping flow changes downstream of Goshen Dam. The adjustment of the valve system at Goshen Dam controls the rate of change of downstream

¹ Order Issuing Original License issued February 26, 2009 (126 FERC ¶ 62,148).

flows and protects downstream aquatic organisms. The plan outlines a specific protocol for up- and down-ramping for flow releases at Goshen Dam. The outflows at Goshen Dam during up-ramping will be adjusted at a maximum rate of change of approximately 10 cfs/hr. The maximum rate of change when adjusting flows in a decreasing manner at Goshen Dam will be approximately 8 cfs/hr.

Ramping Plan at Station Tailrace

4. In accordance with Condition D of the WQC, the licensee is proposing to implement an incremental ramp down sequence when the Silver Lake unit is being brought off-line. Upon initiation of shutdown, the licensee will ramp down to 75% load and hold for 5 minutes, then decrease generation to the minimum capacity of 50% load (or about 800 kW) and hold for 5 minutes, then proceed to zero load. This will create a more gradual ramping scenario and reduce stranding potential. Specifically, the ramping plan will allow for safe egress to fish from the 450-foot-long tailrace after shutdown. The licensee also plans to continue to maintain the vertical fish exclusion rack device at the lower end of the station tailrace to prevent fish from ascending the tailrace and becoming stranded.

Smelt Spawning Protection Operating Protocol

5. Pursuant to the requirements of WQC Condition E, the protocol to monitor smelt spawning in Sucker Brook downstream of the Silver Lake project includes a visual inspection process to define the beginning and end of the smelt spawning season and a proposed operating procedure to maximize the protection of rainbow smelt during spawning. Beginning on or before March 15th each year, the staff gage is to be re-installed at the bridge abutment in the midst of the smelt spawning habitat and several coarse faced bricks are to be put into the brook in backwater sites where spawning smelt congregate. In addition, a continuous water level and water temperature data logger is to be installed in the principal smelt spawning area to collect data starting March 15 each year and ending when the hatch is complete. The licensee proposes to operate at reduced or no generation during the smelt spawning and incubation period. Currently, the lowest level the Silver Lake turbine is capable of being run at is approximately half load (equal to about 800 kW).

Plan to Maintain Conservation Flows Below Sucker Brook Diversion Dam

6. As required by Condition F of the WQC, the licensee has developed a method to maintain minimum conservation flows of 2.5 cfs below Sucker Brook Diversion Dam by tapping the penstock leading to Silver Lake. The licensee has proposed the construction of a sump with a simple fixed orifice located 1-foot above the bottom of the sump to be used to control the amount of water diverted for the minimum flow release. The sump would be located underneath the Diversion Dam outlet pipe near the downstream toe of the dam. The sump would be accessed through a manhole located directly above, that

would allow for periodic cleaning of the sump in the event of sediment or debris accumulation. A V-notch weir at the outlet box is proposed to provide a means for visual observation and confirmation of the minimum flow release through the penstock tap. At the request of the VANR, the designs also include the addition of a baffle to the outlet box at the downstream end of the diversion pipe at Sucker Brook Diversion Dam. In addition, the licensee stated that the channel at the outlet is not yet formed. The licensee expects that upon release of the minimum flows, a channel will be established through the forested area until it meets the existing channel, approximately 200 feet downstream. The licensee included final design drawings and hydraulic calculations for providing the minimum flow release at Sucker Brook Diversion Dam in Appendix A of its Operations Compliance Plan.

Operating Plan for Sugar Hill Reservoir

7. Condition G of the WQC requires the licensee to develop an operating plan for Sugar Hill Reservoir that provides information on how the project will conform to the operating rules for water surface elevation and avoid related noncompliance with the conservation flow requirements. The licensee maintains the following operating rules from May 1 through December 31:

Flow Management	
Surface Elevation (ft.)	
>1766.0	Release at a rate as necessary to bring the reservoir down to 1776.0; maintain no less than 2.5 cfs at all times
1761.0 – 1766.0	Release no less than 2.5 cfs
1758.0 – 1761.0	Fixed release of 2.5 cfs (storage dedicated to providing conservation flow)
1758.0	Match inflow (maximum allowed drawdown)

The licensee maintains the following operating rules from January 1 through April 30:

Flow Management	
Surface Elevation (ft.)	
>1761.0	Maintain at no less than 2.5 cfs

1748.0 – 1761.0	Maintain no less than 2.5 cfs and manage drawdown in a manner that sufficient storage is available to accomplish this without dropping below elevation 1748.0 feet
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Monitoring Plan for Reservoir and Flow Management

8. Condition H of the WQC requires the licensee to develop a plan for continuous monitoring of flow releases at the project, both below the dams and below the station tailrace, and reservoir levels and inflows. At the request of the VANR, the licensee plans to perform visual checks during each site visit on the minimum flow discharges at Goshen Dam and Sucker Brook Diversion Dam to verify that the V-notch weirs and associated staff gages show that sufficient flows are being provided to meet the requirements. The licensee plans to maintain continuous records of station output, impoundment water levels, Goshen Dam outlet valve settings, and discharges at Sucker Brook Diversion Dam and provide such records to agencies upon request. If the licensee determines that the minimum flows or surface water elevations deviated from license requirements, then the licensee will self-report to the Commission, VANR, and the U.S. Fish and Wildlife Service (USFWS) within 10 days of the date the data becomes available regarding the incident.

Pre-Filing Consultation

9. The licensee prepared the plan in consultation with the VANR and USFWS. By letter dated July 22, 2009, a draft of the plan was distributed to the VANR and USFWS for review and comment. The USFWS declined to comment on the plan via email dated August 27, 2009. Comments received by the VANR have been incorporated into the revised Operations Compliance Plan.

10. A revised Operations Compliance Plan was submitted by the licensee to the VANR and the Vermont Department of Fish and Wildlife on October 19, 2009, for review and approval. Comments via email were received from the VANR on November 6, 18, and 20, 2009.²

11. The VANR requested that the licensee revise the downstream ramping protocol at the Silver Lake Tailrace. The licensee therefore proposed to implement a ramping sequence as indicated above. At the request of the VANR, the licensee further clarified the explanation of the penstock tap design, revisions to the smelt spawning protection

² On November 23, 2009, the licensee requested an extension of time to file the final plan by February 21, 2010. The Commission approved this request on January 12, 2010.

operation protocol, descriptions of Sugar Hill Reservoir Management operation, minimum flow requirements at Sucker Brook, and the flow estimation accuracy of the V-notch weir at Goshen Dam.

12. Two conference calls were subsequently held between the licensee and the VANR on January 20 and February 12, 2010, in order to resolve outstanding issues related to the Operations Compliance Plan. The plan was revised by the licensee in accordance to consultation with the VANR and resubmitted to the VANR for approval on February 17, 2010. The VANR responded to the licensee on February 18, 2010, granting approval of the Operations Compliance Plan.

Review

13. The licensee's plan, filed February 19, 2010, fulfills the requirements of article 401 and VANR WQC conditions C, D, E, F, G, and H. The licensee's plan adequately outlines the Goshen Dam ramping plan, Silver Lake tailrace down-ramping plan, Sucker Brook Diversion Dam bypass flow plan, Sugar Hill Reservoir operating plan, smelt spawning protection operating protocol, and the monitoring plan for reservoir and flow management.

15. After the proposed penstock tap and sump, and channel at the Sucker Brook Diversion Dam is constructed, the licensee should submit full-size drawings showing the location and layout of these completed facilities, as built, in relation to the project boundary.

16. The plan adequately addresses the requirements of article 401 and WQC conditions C, D, E, F, G, and H, and should be approved.

The Director orders:

(A) The licensee's operations compliance plan for the Silver Lake Hydroelectric Project, filed February 19, 2010, pursuant to article 401 and WQC conditions C, D, E, F, G, and H, is approved.

(B) Pursuant to WQC Condition E, the licensee shall install the water level and data loggers in the principal smelt spawning area within 60 days of the date of this order.

(C) Pursuant to WQC Condition F, at least 60 days prior to the start of construction of the proposed penstock sump and channel at the Sucker Brook Diversion Dam, the licensee shall submit one copy of its plans and specifications and supporting design documentation to the Commission's Division of Dam Safety and Inspections (D2SI) –New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal must also include as part of preconstruction requirements: a Quality Control and Inspection Program, a Temporary

Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI –New York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized the start of construction.

(D) Within 90 days after completing construction of the penstock tap and sump, and channel addition to be provided under the approved operations compliance plan, the licensee shall file with the Commission for approval, as-built drawings of the completed facilities. The drawings shall show the location and layout of the facilities in relation to the project boundary.

(E) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and the Commission's regulations at 18 C.F.R. § 385.713 (2010). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

William Guey-Lee
Chief, Engineering Resources Branch
Division of Hydropower Administration
and Compliance

Document Content(s)

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