

Appendix 1

Ownership/Regulatory Status

The Gregg's Falls generating facility is a run-of-river 3.479 MW plant located on the Piscataquog River, in the community of Goffstown in Hillsborough County, New Hampshire.

The existing Gregg's Falls Dam was built in 1918 by the Manchester Traction, Light and Power Company. It was the largest dam in the state. The power station on the easterly side of the dam enabled the company to utilize a large amount of water that formerly went over the previous dam or through the sluiceway to waste. On July 21, 1983 the Federal Energy Regulatory Commission (the "Commission") issued an exemption to the New Hampshire Water Resources Board to operate the hydroelectric facility at the site of the existing Gregg's Falls Dam. (see Appendix 1-1)

The July 21, 1983 exemption authorized two generating units with a total installed capacity of 3,820 kW. On September 1, 1998, the Commission's New York Regional Office performed an operation inspection of the project. The inspection found that the project's installed generating capacity was 3,474 kW. By letter dated October 2, 1998, the Commission requested the exemptee provide information regarding the installed generating capacities and as-built project features. On October 13, 1998, National Hydro, exemptee for the Gregg's Falls Project, FERC No. 3180, filed as-built capacities for the generator and turbine units to amend its exemption.

In accordance with the Commission March 22, 1995 rulemaking on Charges and Fees for Hydroelectric Projects, the project's authorized installed capacity is based on the lesser of the ratings of the generator or turbine units. The capacities of the generator (G) and turbine (T) units are listed in the following table, and the project's authorized installed generating capacity was amended to 3,479 kW. (see Appendix 1-2)

| Unit | Turbine Capacity (kW) | Generator Capacity (kW) | Generator Capacity (kW) |
|-------|-----------------------|-------------------------|-------------------------|
| #1 | 2,195 | 2,169 | 2169 (G) |
| #2 | 1,310 | 1,314 | 1310 (T) |
| Total | 3,505 | 3,483 | 3,479 |

In addition, when the exemption was issued, it authorized raising the concrete spillway crest by one foot and the installation of six-inch high flashboards. The spillway crest was not raised one foot, instead, 1.5 feet flash boards were installed to achieve the authorized reservoir water level.

The exemptee's October 13, 1998 filing also reported that it had the existing concrete spillway crest elevation surveyed and it was found to be 271.1 feet NGVD, instead of 271.5 feet as described in the exemption. Accordingly, the normal water surface elevation would be 272.6 feet NGVD, which is 0.4 foot lower than the authorized elevation of 273.0 feet NGVD.

The Commission's review found that a minor decrease of the Gregg's Falls project's installed capacity or the substitution of flashboards for raising the spillway does not materially affect any terms and conditions of the exemption. The Commission subsequently ordered that the Description of Project of the exemption in Appendix A be revised, in part, to read as follows:

j(6) an existing powerhouse containing 2 turbines and 2 new generators with an installed capacity of 3,479 kW;

j(8) a new 100-foot-long transmission line. The concrete spillway crest elevation remains unchanged at 271.1 feet NGVD, and is topped by 1.5-foot-high flashboards which raise the normal maximum surface elevation to 272.6 feet NGVD and increase the reservoir's storage capacity to approximately 3,650 acre-feet.

On June 29, 2013, Eagle Creek Renewable Energy LLC acquired 100% of Gregg Falls Hydroelectric Associates Limited Partnership, owner of the Gregg's Falls hydroelectric project. Algonquin Power Co., the general partner of Gregg Falls Hydroelectric Associates LP, notified the Commission on July 8, 2013 of the sale. (see Appendix 1-3)

The Gregg's Falls Dam is owned by the State of New Hampshire and the exemptee is responsible for dam safety requirements

Listing of Authorities/Agencies Contacted

Federal

John Warner
 U.S. Fish & Wildlife Service
 U. S. Department of Interior
 70 Commercial Street, suite 300
 Concord, NH 03301-5087
 Tel: 603-223-2541 ext 15
 Email: John_Warner@fws.gov
 Date last contacted: Sept 25, 2013
 Nature of last contact: Request for
 Comment

State

Carol Henderson
 Fish & Wildlife Ecologist
 New Hampshire Fish and Game
 Department
 11 Hazen Drive
 Concord, NH 03301
 Tel: 603-271-3511
 Email:
 Carol.Henderson@wildlife.nh.gov
 Date last contacted: July 18, 2013
 Nature of last contact: Request for
 Comment

Ted Walsh
 Surface Water Monitoring
 Coordinator
 New Hampshire Dept. of Environ
 Services
 29 Hazen Drive
 Concord, NH 03301
 Tel: 603-271-2083
 Email: Ted.Walsh@des.nh.gov
 Date last contacted: Sept 24, 2013
 Nature of last contact: Sent water
 quality data for DES analysis

State continued

Kim Tuttle
Certified Wildlife Biologist
New Hampshire Fish and Game
Department
11 Hazen Drive
Concord, NH 03301
Tel: 603-271-6544
Email:
Kim.Tuttle@wildlife.nh.gov
Date last contacted: October 4,
2013
Nature of last contact: Request for
Comment

NH Division of Historical
Resources
State Historic Preservation Office
Attn: Review and Compliance
19 Pillsbury Street
Concord, NH 03301-3570
Tel: N/A
Email: N/A
Date last contacted: Aug 16, 2013
Nature of last contact: Sent Rqst
for Project Review

NH Natural Heritage Bureau
DRED
Division of Forests and Lands
172 Pembroke Road
Concord, NH 03302-1856
Tel: 603-271-6488
Email: mcoppola@dred.state.nh.us
Date last contacted: Aug 30, 2013
Nature of last contact: Receipt of
Review

State *continued*

Richard Fink
New Hampshire Fish and Game
Facilities and Land Division
11 Hazen Drive
Concord, NH 03301
Tel: 603-271-1134
Email:
Richard.Fink@wildlife.nh.gov
Date last contacted: October 4,
2013
Nature of last contact: Request for
Recreational Access Review

Appendix 3

Project Location and Operations

Description

The Gregg Falls facility is located on the Piscataquog River near the town of Goffstown, New Hampshire. (see Appendix 3-1) The site was historically used for the generation of electrical energy and was decommissioned in the 1970's. A major refurbishment was undertaken in 1985, which included the installation of two new turbines and generators and the replacement of all electrical and control equipment. The installed capacity of the facility is 3,480 kilowatts.

The facility has a concrete dam that has a height of approximately 60 feet and a span of 1,360 feet. The generating station has approximately 53 feet of head. The site draws flow from a headpond of approximately 136 acres which is part of the Glen Lake recreational waterway. The site has a drainage area of approximately 193.1 square miles. The annual drawdown of the upstream lake provides a boost to energy generation at this site during the fall season.

The powerhouse is integrated into the base of the concrete gravity dam. It is a reinforced concrete structure measuring approximately 98.4 feet wide by 44.3 feet long. The powerhouse has a crane for servicing the generating equipment. The interconnection point with PSNH grid distribution system is located approximately 98.5 feet from the powerhouse.

The Gregg's Falls hydroelectric facility consists of: (1) an existing earthfill and concrete gravity dam 1,360 feet long and 60 feet high; (2) a reservoir (Glenn Lake) with a storage capacity of 3,650 acre-feet; (3) existing intake structures; (4) new fish passage facilities; (5) an existing concrete penstock 31.75 feet long and 10 feet by 17.5 feet oblong shape, transitioning to a 7.5 feet diameter circular shape; (6) an existing powerhouse containing 2 turbines and 2 new generators with an installed capacity of 3,479 kW; (7) a switchyard; and (8) a new 100-foot-long transmission line. The concrete spillway crest elevation remains unchanged at 271.1 feet NGVD, and is topped by 1.5-foot-high flashboards which raise the normal maximum surface elevation to 272.6 feet NGVD and increase the reservoir's storage capacity to approximately 3,650 acre-feet.

Equipment

The generating equipment consists of two Francis turbines with different output capacities of 2160 kW and 1320 kW. The turbines are manufactured by Kvaerner and are connected to two National Industries synchronous generators with similar capacities.

Appendix A

Description of Project flows

River flow History

The Piscataquog River is part of the Merrimack River Basin that encompasses approximately 1,799 square miles in southern New Hampshire and is a tributary of the Merrimack River. The Piscataquog River begins near southern and central New Hampshire just upstream of the Deering Reservoir and flows approximately 37 miles to the Merrimack River in New Hampshire. This river is regulated upstream of the Gregg's Falls project.

On July 21, 1983, the Commission issued an Order Granting Exemption from Licensing to the Gregg's Falls project. Article 2 of the Exemption Order requires compliance with the terms and conditions specified by Federal and State Fish and Wildlife agencies. During the FERC exemption process, the U.S. Department of the Interior's Fish and Wildlife Service stated that the minimum flow recommended at the Gregg's Falls project, based on historical streamflow, would be 20 cfs. The controls of the generating units are set to allow the wicket gates to open to pass 20 cfs when the unit goes offline. See Appendix A-1 for the last five years of minimum flow compliance letters filed with the FERC.

The Gregg's Falls project was historically operated as a peaking project but was changed to a run-of-river facility in 2000.

Appendix B

Water Quality

A water-sampling program of the Piscataquog River was completed in September 2013 in accordance with a New Hampshire Department of Environmental Services (“NHDES”) sampling protocol created for the project. Due to environmental conditions, flows in the Piscataquog River never fell to the 3X7Q10 value of 26.4 cfs required by NH DES in order to monitor dissolved oxygen content. As a result, the applicant has asked NH DES to analyze the 30 days of DO data collected at the project and issue a statement to LIHI regarding the adequacy of that data. Total phosphorus and chlorophyll-a samples were collected at the project in accordance with the sampling protocol. The applicant is fully willing to repeat the DO sampling in 2014 under the required flow conditions and submit that data to NH DES for analysis and production of a statement to LIHI. In the interim, the applicant would ask that LIHI grant low impact certification of the Gregg’s Falls project and include a condition in the certification that the applicant complete the DO testing and produce the letter from NH DES in 2014. The project fully expects that DES will confirm that the operation of the project is not causing or contributing to violations of New Hampshire state water quality standards.

Appendix C

Fish Passage and Protection

The Gregg's Falls project has fully operational downstream passage facilities. The fish bypass pipe allows 20 cfs to be conveyed into the tailrace. The passage must be opened commencing April 1 through June 1 each calendar year. The exemptee has not been asked by any agency to install upstream passage facilities at the site. Article 2 of the Gregg's Falls project exemption dated July 21, 1983 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. (see Appendix 1-1).

On July 18, 2013 requests for comment were submitted to Carol Henderson, Environmental Review Coordinator with the New Hampshire Fish and Game Department (NHF&G) and John Warner, Hydropower Coordinator with the United States Fish and Wildlife Service (USFWS). (see Appendix C-1) Responses from both agencies will be sent to LIHI upon receipt.

Appendix D

Description of Watershed Protection

The Piscataquog River basin is managed, based upon years of data and experience, to balance the many and diverse interests within the basin. There are 5 hydroelectric sites upstream and 1 hydroelectric site downstream of the Gregg's Falls project that use the river flows to generate hydroelectric power. NHDES has entered into water user contracts with the owners of each of these sites. Under the terms of the contracts, one of the objectives of NHDES is to provide water to these facilities in usable quantities, insofar as ongoing conditions will allow, to increase the generating potential of the hydro operations. It is understood by these water users, however, that NHDES also has obligations to reach and maintain certain target elevations for the purposes of promoting the reasonable use and enjoyment of the lakes and rivers by recreational users, and to minimize the risk and effects of damaging flooding.

Day to day lake levels and discharges are coordinated to stay within an operating range that best serves these interests. In general terms, stored water is preserved during the summer recreational season and released in the fall to serve the needs of the hydroelectric interests along the basin and to enhance the lakes' ability to safely store flood waters during the typically high runoff months of March through May. During extreme events, the goal of NHDES is to strike a balance between high lake levels and high stream flows, both of which can be significantly damaging.

The Piscataquog River watershed is highly developed around the centers of Weare, New Boston, Goffstown, and Manchester, NH. High levels of impervious surface contribute to increased levels of stormwater runoff into the watershed.

Appendix E

Description of Threatened and Endangered Species Protection

Requests were submitted to the United States Fish and Wildlife Service and the New Hampshire Natural Heritage Bureau for a complete list of all threatened and/or endangered species found within the Gregg's Falls Facility's project boundary. In response to a request for project review, the United States Fish and Wildlife Service indicated that no rare species or exemplary natural communities exist within the Gregg's Falls project boundary. (see Appendix E-1) On August 16, 2013, a request for project review was submitted to the New Hampshire Natural Heritage Bureau ("NHB"), NHB A response was received on July 30, 2013, indicating that the Brook Floater, a state listed endangered species and the Wood Turtle, a state listed species of special Gregg's Falls project is located. On October 4, 2013, a request was sent to Kim Tuttle, Certified Wildlife Biologist with the New Hampshire Department of Fish and Game for a further review and determination of the potential for the Gregg's Falls project to impact these species. (see Appendix E-2) No response has been received to date. Any response will be sent to LIHI upon receipt.

As a condition of issuance, the Gregg's Falls Project's FERC exemption requires compliance with any terms and conditions that the Federal or State Fish and Wildlife agencies have determined appropriate to

prevent loss of, or damage to, fish and wildlife resources. There have been no deficiencies noted by any agency with jurisdiction for the facility.

Appendix F

Cultural Resources

A Request for Project Review was submitted on August 16, 2013 to the New Hampshire Division of Historical Resources for a list of known sites of historic or archaeological significance that occur within the Gregg's Falls project boundary. (see Appendix F-1) Their response will be forwarded to LIHI upon receipt as Appendix F-2.

No known sites of historic or archeological importance were discovered during the FERC licensing process and the applicant fully expects that this will remain true after the project review is completed by the New Hampshire Division of Historical Resources

Appendix G

Recreation

Recreational access was not included as a requirement in the Project's FERC exemption (Project No. 3180) issued July 21, 1983 and amended December 1, 1998. The project provides recreational access for anglers free of charge within a safe distance of the project works. Extensive boating occurs within the project impoundment, below the project tailrace and throughout Glenn Lake. On October 4, 2013, a request was submitted to Rick Fink with the New Hampshire Fish and Game Department for confirmation that the project permits recreational activity free of charge within the project boundary (see Appendix G-1). Mr. Fink's response will be forwarded to LIHI as Appendix G-2 upon receipt.