



## SUBJECT - Low Impact Hydropower Institute (LIHI) Recertification Review for the Salmon River Project (FERC 11408)

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### BACKGROUND

Erie Boulevard Hydropower (EBH) is a wholly owned subsidiary of Brookfield Renewable Energy Group (BREG). EBH's Salmon River LIHI Project (Project) consists of two hydroelectric developments along the Salmon River in the north-central section of New York in the Towns of Redfield and Orwell, and Oswego, New York. Both developments are licensed with the Federal Energy Regulatory Commission (FERC) as the Salmon River Project (FERC No. 11408). The initial eight year LIHI certification was issued on November 14, 2005 and scheduled to terminate on November 14, 2013. However, because of an administrative backlog, the Certificate was granted a 3 month extension to February 14, 2014. EBH submitted an application for recertification of the Project on October 31, 2013.

The Salmon River's 285 square miles drainage basin is located in the north-central region of the state and is captured by the Salmon River Reservoir. This 3,550 acre, 66,000 acre-foot reservoir is operated by EBH to provide storage of spring runoff, flood mitigation, and low-flow augmentation for the remainder of the Salmon River.

The two hydropower powerhouses of this LIHI project are located on the Salmon River as shown on the Project Location Map below. Progressing downstream are the Bennetts Bridge (RM 18.0) and Lighthouse Hill (RM 17.0) developments.

The prior FERC licensee for the projects, Niagara Mohawk Power Corporation (NMPC)<sup>1</sup>, filed an application for initial license for the Salmon River with FERC on April 27, 1993. As was eventually done for all of its "Class of '93" projects, NMPC initiated settlement negotiations with relicensing interveners in 1994 in an effort to reach agreement about recommended license conditions and obtain water quality certification from the New York State Department of Environmental Conservation (NYSDEC).

On April 28, 1994, the NYSDEC issued a Water Quality Certificate (WQC) on condition that the terms and conditions of the Salmon River Project Settlement Offer (SRPSO), signed by NYSDEC, NMPC, New York Rivers United (NYRU), the Adirondack Mountain Club (AMC), and Trout Unlimited (TU) are met. The SRPSO was contained as Attachment A of the Final Environmental Assessment (EA).

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<sup>1</sup> The projects were transferred to Erie Boulevard Hydropower, L.P. in 1999 (*Niagara Mohawk Power Corporation et al.*, Order Approving Transfers of Licenses, Partial Transfer of License, and Substitution of Applicants (88 FERC ¶62,082)). <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=126466>



The SRPSO was collaboratively designed to provide for the continued operation of these projects with appropriate long-term environmental protection measures to meet diverse objectives for maintaining a balance of non-power and power values in the Salmon River Basin.

The provisions of the SRPSO were incorporated by FERC into a new license for the Salmon River Project. The implementation of the protection, mitigation, and enhancement measures associated with the SRPSO has been completed in accordance with the timelines agreed upon.

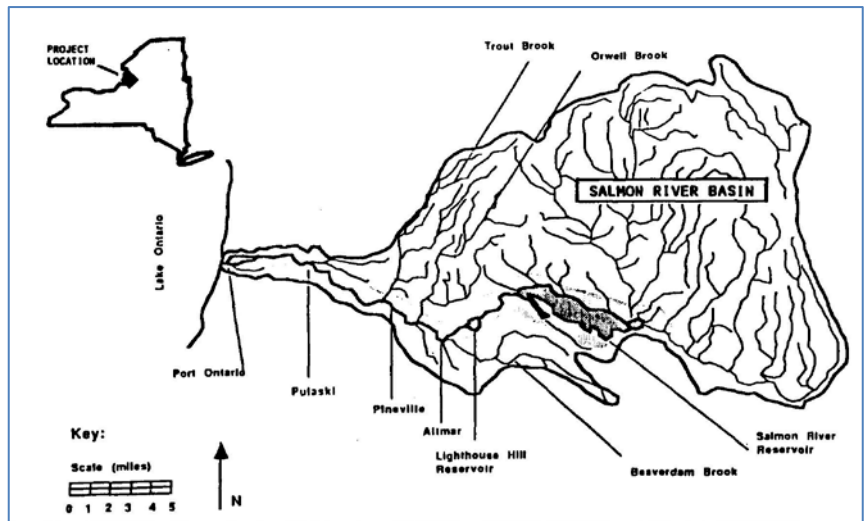


Figure 1- Project Location Map

## Salmon River Project

The FERC issued the original license to NMPC effective, February 1, 1996<sup>2</sup>. This 40-year license expires on January 31, 1936. EBH acquired ownership of the project in 1999.

The LIHI Project consists of two developments licensed as FERC Project 11408. In the most recent recertification application, EBH states that the total project has an installed capacity of 38.4 MW and produces an average annual generation (AAE) of 144.96 GWh (Plant factor of 43.1%).

The Bennetts Bridge development's powerhouse is connected to the Salmon River Reservoir via a system of penstocks approximately 10,000 foot long. The Salmon River Reservoir follows a targeted guide curve and is operated in a peaking mode as a seasonal store and release facility. The development's releases empty directly into the Lighthouse Hill head pond which has a surface area of 170 acres and a volume of 3,200 acre-feet. The Lighthouse Hill development powerhouse is adjacent to the dam and operates as a store and release facility that operates in a re-regulating mode.

Project operations follow the flow requirements and reservoir target elevations as defined in Article 401 of the FERC License. This Article requires that a continuous year-round base flow from the Lighthouse Hill Reservoir be released while maintaining target water surface elevations in the Salmon River Reservoir, as shown in Table 1.

Base flows are released directly from the Lighthouse Hill development, except for 22-cfs which is released from the Salmon River Fish Hatchery (SRFH)<sup>3</sup> downstream of the Lighthouse Hill development.

<sup>2</sup> See NMPC, Order Approving Settlement Offer and Issuing New License (77 FERC ¶61,306) <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=8402048>



Target water surface elevations for Salmon River Reservoir may not be achievable during periods of high or low inflows. High-flow and low-flow periods control when the water surface elevation at Salmon River reaches the seasonal High-flow or Low-flow limit in Table1.

**Table 1 - Project Base Flow and Targeted Reservoir Elevations**

Month	Base Flow Below Lighthouse Hill (cfs)	Salmon River Reservoir Targeted Water Surface Elevation (feet)	Salmon River Reservoir High-Flow Trigger Elevation (feet)	Salmon River Reservoir Low-Flow Trigger Elevation (feet)
January	285	935	936	925
February	285	932	933	925
March	285	923	937	920
April	285	926	937	920
May	185	936	937	920
June	185	936	937	920
July	185	936	937	920
August	185	935	936	920
September	335	933	934	918
October	335	930	931	918
November	335	930	931	918
December	335	931	932	925

**Bennetts Bridge Development**

The Bennetts Bridge Development (Latitude: 43.54490 Longitude: -75.91897) has a total catchment of 285 square miles and consists of:

- a 607-foot-long and 45-foot-high concrete gravity dam with a reinforced concrete intake structure 92 feet long by 39.5 feet wide by 53 feet high, The dam is comprised of a 107-foot-long non-overflow section with crest elevation at 942 feet (USGS), a 244 foot long ungated spillway section with crest elevation at 935 feet,



Photo 1 - Bennetts Bridge Surge Tank and Powerhouse

<sup>3</sup> Located in Altmar, NY and built in 1980, the STFH specializes in raising steelhead, Chinook salmon, Coho salmon, brown trout and landlocked salmon. Originally constructed to revive and enhance the fishery of the Great Lakes, this facility provides most of the fish for the now multi-million dollar Lake Ontario salmonid fishery. Each year this hatchery produces more than 2,000,000 fingerlings (young fish 3-5 inches long) and close to 1,000,000 yearlings (fish one year old or over) and stocks 3.5 million trout and salmon, and nine million walleye fry. The fish are transported by trucks that are specially equipped with tanks of oxygenated water.



equipped with 2-foot-high flashboards, and a 256 foot long gated spillway section with crest elevation at 926 feet, with eleven 11.5-foot-high by 20-foot-wide Taintor gates;

- an impoundment with gross storage capacity of 66,000 acre-feet, maximum surface area of 3,550 acres and normal maximum surface elevation at 937 feet;
- three earth dikes 100, 1,330 and 695 feet long located along the south shore of the impoundment;
- a 10,000 foot long conduit system consisting of (a) a concrete tunnel section 650 feet long and 12 feet in diameter; (b) a reinforced plastic pipeline section 7,790 feet long and 12 feet in diameter; (c) a steel pipeline section 1,200 feet long and 11.5 feet in diameter; (d) a differential surge tank 105 feet high; (e) a steel distributor 200 feet long and 12 feet in diameter; and (f) four steel penstocks, each 330 feet long and 8 feet in diameter, with associate shut-off and air valves;
- a concrete/brick/steel powerhouse 206 feet long and 70 feet wide, containing four turbine-generator units with a total installed capacity of about 28.750 MW;
- Three existing 12-kilovolt (kV) transmission lines with a total length of 17,300 feet and appurtenant facilities.

## Lighthouse Hill Development

The Lighthouse Hill Development (Latitude: 43.52494 Longitude: -75.97024) has a total catchment of 291 square miles and consists of:

- a 382-foot-long concrete gravity dam consisting of a 155 foot long and 59 foot high non-overflow section with crest elevation at 656 feet (USGS), a 43 foot long and 53 foot high un-gated spillway section with crest elevation at 650 feet controlled by a 1 foot high flashboards, and a 184 foot long and 46 foot high spillway section with crest elevation at 643feet, gated with eight 20 foot wide by 7 foot high Taintor gates equipped with 1 foot high flashboards;
- an impoundment with gross storage capacity of 3,200 acre-feet, maximum surface area of 170 acres with normal maximum surface elevation at 651 feet;
- a 324 foot long and 40 foot high earthen dike with crest elevation at 656 feet;
- three 17 foot wide by 8 foot high by 62 foot long concrete penstocks;
- a 15 foot long sluice gate section;
- a 125 foot long concrete/brick/steel powerhouse with an intake structure, containing two existing turbine-generator units with a total installed capacity of about 7.5 MW, and one new



Photo 2 - Lighthouse Hill Dam and Powerhouse





environmental flow 2.150 MW turbine-generator unit for a total installed capacity of 9.65 MW. The environmental flow generating unit is operated to continuously release year-round base flows;

- a 40 foot wide and 2,800 foot long tailrace channel;
- A 400 foot long, 12-Kv transmission line and appurtenant facilities.

## LIHI RE-CERTIFICATION PROCESS

Recertification review focuses solely on determining the answers to the following two questions:

- 1) Has there been a material change in circumstances since the original certification was issued?

For purposes of recertification review, a “material change in circumstances” will mean one or both of the following:

(a) Non-compliance: Since receiving its last certification from LIHI, the certificate holder/applicant has not implemented, or has delayed implementing, or has done an inadequate job of implementing obligations at or near the facility that are of relevance to LIHI’s criteria. These obligations could be in the form of terms and conditions of license(s), settlement agreements, resource agency recommendations or agreements, LIHI conditions of certification including annual notifications, agreements with local municipalities or other third parties or similar relevant obligations; or

(b) New or renewed issues of concern that are relevant to LIHI’s criteria: Since receiving its last certification from LIHI, either new issues of concern and relevance to LIHI’s criteria have emerged that did not exist or were not made known to LIHI at the time of certification, or there continues to be ongoing problems with previously known issues that appeared to LIHI to be resolved or on the road to resolution at the time of certification but in fact are not resolved, and are ongoing at the time of the re-certification application.

If a new license, settlement agreement, prescription, biological opinion or other similar regulatory decision has been made since the original recertification, these documents will be evaluated to determine if new or renewed issues have been raised.

- 2) Have any of LIHI’s criteria, or the Board’s interpretation of one or more criterion, changed in meaningful ways since original certification that are applicable to the circumstances of the facility seeking re-certification?

The Project’s Recertification Application (Application) was received by LIHI on October 31, 2013 and reviewed to assess adherence to the LIHI certification criteria with the above in mind. A FERC e-library search was conducted to verify claims in the Application. The docket search contains documents from as far back as August 8, 2004. My review concentrated on the period from the start of the previous LIHI certification, approximately November 14, 2005 through July of 2014, for FERC docket number P-11408. Appendix A contains a reversed chronological list of docket items pertaining to this recertification. No major issues were found in the docket search.



LIHI published the Application on its website and requested public comment. To be considered, all comments were required to be received at the Institute on or before 5 pm Eastern time on January 18, 2014.

On October 18, 2013, LIHI received a comment from the Towns of Orwell and Redfield, NY requesting the water elevation in the Salmon River be maintained between elevation of 940 and 933 during the time frame of April 1 through September 30 of each year. The towns believe that the current operation where the reservoir is targeted to an elevation range of 926 to 933 impacts the recreational use of the reservoir and have adverse environmental impacts. Their petition also states that base flows could also be reduced during extreme drought or emergency conditions to help maintain higher Salmon River Reservoir elevations. The petition states further that history shows that summertime water levels have been reduced significantly below the target levels in most years since the license was granted. The excessive drawdowns result, not because reasonable base flows are sustained during this period, but because the EBH continues to use the facility for peaking operations during periods of high energy demand and also because of the summertime whitewater releases specified in the flow agreement.

On November 18, 2013, EBH response to the October 18, 2013 petition was received by LIHI. EBH states that the petition does not imply that EBH is non-compliant with the terms of the FERC License or the Settlement Agreement. By License, the reservoir is managed as a storage reservoir in accordance with a rule curve and water budget model established with stakeholders during the licensing process. The License and Settlement Agreement established management goals that clearly highlighted that the reservoir storage would be used to maintain downstream flows throughout the year and to support a multi-million dollar Salmon fishery. EBH acknowledges the concerns highlighted in the petition, but since EBH has fully complied with the terms and conditions of the License and the Settlement Agreement, they don't see any relevance of the petition with regard to LIHI recertification.

On December 22, 2013, LIHI received a comment from Mr. Pape<sup>4</sup>. The letter discusses environmental flows, water quality, and overall environmental impact. He states that large fluctuations in water level consistently experienced on the Salmon River Reservoir in the past decade adversely impact both on the environment and the economy of the local community. These fluctuations are due primarily to needless whitewater releases during the summer months and EBH using the reservoir for peaking operations during periods of high energy demand ignoring the target levels specified in the license.

Low water levels severely stress the fish population in the reservoir since a sudden drop in elevation result in fish egg sacks hanging in exposed brush drying out in the sun and schools of small fry stranded in isolated pools of water. The water level fluctuations also impact other wildlife habitats, such as the loon nests. Also, the long periods during which much of the reservoir bottom is exposed to sunlight has hastened the spread of non-native invasive weeds, particularly Eurasian milfoil.

Recreational use of the reservoir decreases significantly during the low water levels, not only for sport fishing but also recreational boating, canoeing, and flat water kayaking. This has reduced tourism and has a detrimental impact on the economy of the communities around the reservoir.

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<sup>4</sup> Mr. Roger L. Pape, 592 Waterbury Rd., Redfield, NY 13437, [roger.pape@ieee.org](mailto:roger.pape@ieee.org)



Mr. Pape proposes that EBH monitor the reservoir water level daily and post the data on-line for public access, that scheduled summertime whitewater releases be eliminated and that LIHI withhold recertification of the Project until EBH provides credible assurances that they will honor the reservoir target water levels as currently specified in the FERC licensing agreement.

On July 15, 2014, this reviewer emailed the two agencies listed in the Project's Recertification application (USFWS<sup>5</sup> and the NYSDEC<sup>6</sup>). In my email I stated, "... I am the LIHI reviewer tasked with determining whether EBH's Beaver, Salmon, Raquette and Hoosic River Projects should be LIHI recertified. I am emailing you today because you have been identified in the application by the owner as resource agency and non-governmental organization contacts familiar with the project. I would appreciate your perspective regarding the project's operation with regard to satisfying its licensed environmental obligations (FERC articles). Any other views or concerns on the operation of the Projects are welcome. If you have already commented to LIHI, this as an opportunity to add any last minute observations. Without your input my review can only be based on the documents found in the FERC docket. Thank you for your time in this matter."

Agency responses follow:

- NYSDEC - On August 1, 2014, in a phone conversation with Erik Latremore, he stated the NYSDEC believes EBH has performed satisfactorily throughout the Project's last LIHI certification term.
- USFWS - On July 28, 2014, in an email from David Stilwell, Field Supervisor of the Cortland, NY field office, he stated, "*The application for the Salmon River Project adequately describes the project and its license requirements. To the best of our knowledge, Erie is in full compliance with all license and settlement requirements for this project. The Service participates on the annual Flow Management Advisory Team that determines how to best utilize flows when water supplies are inadequate to address all license requirements. It is our opinion that Erie is maintaining the critical base flows to the best of their ability. The Service has no objections to recertification of the Salmon River Project.*"

*These types of comments from users upstream of a reservoir are a typical aftermath in situations where an upstream reservoir is used to improve downstream conditions by supplementing downstream flows during low-flow droughts and reducing downstream flows during high-flows or flood situations. Physics dictates that the improvements downstream occur at the expense of increase reservoir fluctuations upstream.*

*Although I believe areas of compromise are possible and that the rule curve of the Salmon River Reservoir could be improved<sup>7</sup>, the reservoir is currently manager in accordance with the rule curve and water budget model established with stakeholders during the licensing process.*

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<sup>5</sup> USFWS, 3817 Luker Road, Cortland, NY 13045: Stephen Patch - (607)753-9334 - [Stephen\\_patch@fws.gov](mailto:Stephen_patch@fws.gov)

<sup>6</sup> NYSDEC, Dulles State Office Building, 317 Washington Street, Watertown, NY 13601: Erik Latremore - (315)785-2293 - [ejlatrem@gw.dec.state.ny.us](mailto:ejlatrem@gw.dec.state.ny.us). Mr. Erik Latremore has taken over Alice's hydro operations responsibilities.

<sup>7</sup> Improvements should be possible if the current rule curve that targets a constant reservoir level for the entire month were instead changed to target elevations at specific days within the year. This should improve day-to-day operations by allowing for a more graceful transition from a flooding to conservation mode of operation when the reservoir drops



*These upstream concerns will be readdressed as part of the next FERC relicensing process, circa 2036. For prompter consideration of these issues, immediate concerns with upstream impacts should to be documented and sent directly to FERC.*

## RE-CERTIFICATION REVIEW

This section contains my review of the Project with regard to LIHI's certification criteria focusing solely on determining if there has been a material change in circumstances since the original certification was issued.

### LIHI Criterion-Flows

The Salmon River Project is in compliance with resource agency flow conditions issued after December 31, 1986. The FERC license, SRPSO, and Section 401 Water Quality Certificate (WQC) issued on April 28, 1994, include the requirements for flow releases and water level control recommended by the NYSDEC and USFWS. The method of release and time of implementation is also established in the SRPSO as recommended by the resource agencies and others.

All of the flow conditions and impoundment levels have been implemented at the Project developments. EBH uses back-calculated turbine flows based on metered power output and power head estimates in conjunction with downstream staff gages to ensure flows in the river are consistent with flows agreed to in the SRPSO. Each year EBH files documentation with FERC confirming compliance with flow and impoundment level conditions.

For construction and maintenance activities that require lowering the level of an impoundment below the normal operating limits, EBH's Hydro Operating Procedure (HOP 202) requires notification of NYSDEC and compliance with drawdown rates specified in the WQC.

In addition, the SRPSO established a Flow Management Advisory Team (FMAT) to keep abreast of the changing conditions that may affect river flows and coordinate requests to the FERC for change in flows, releases, and other water-related issues. The FMAT initially consisted of a number of parties each with one vote. The initial FMAT included the: NYSDEC, USFWS, National Park Service (NPS), NYS Office of Parks, Recreation and Historic Preservation (SHPO), American Whitewater Affiliation (AWA), New York Rivers United (NYRU), Trout Unlimited (TU), Adirondack Mountain Club (AMC), Oswego County River Guides, Oswego County Federation of Sportsmen's Clubs, Oswego County Legislators, Village of Pulaski Mayor, Albion County Legislator, Supervisor Town of Redfield, Pulaski/Eastern Shore Chamber of Commerce, Salmon River Fishery Committee, and EBH. Over the years, participation by some of the members has waned. However, participation by Federal and States agencies has remained active.

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below the targeted elevation and from conservation to flooding mode of operation when the reservoir rises above the targeted reservoir elevation.





Based on a July 29, 2014 phone conversation with Matt Johnson, EBH Compliance Manager, once a year the FMAT meets at the SRFH to discuss and monitor the effectiveness of flow requirements and evolving hydropower, ecological, and recreational needs in the Salmon River Basin. The FMAT also facilitates post-licensing requests to the FERC for changes in flows or project operation.

The FERC license and SRPSO requires that the project be operated according to Rule Curve 16, as described in the Water Budget Model, submitted May 5, 1993, modified on June 16, 1993 and again on August 9, 1993. This rule curve is designed for the protection and enhancement of aquatic resources, water quality, fisheries, aesthetic resources, and recreation resources in the Salmon River basin.

Rule Curve 16 requires releasing a minimum flow below the Salmon River Reservoir and a base flow from the Lighthouse Hill Reservoir while maintaining target water surface elevations in the Salmon River Reservoir, as defined in Table 1 above. Water surface elevations (WSE) for Salmon River Reservoir are measured at Bennetts Bridge. A continuous minimum flow of 20-cfs from July 1 through September 30 and 7-cfs for the remainder of the year is provided at the Bennetts Bridge dam into the Bennetts Bridge bypass reach. Base flows are released directly from the Lighthouse Hill development, except for 22-cfs which is released from the SRFH by water provided to the SRFH from the Lighthouse Hill reservoir.

Rule Curve 16 also requires releases for whitewater boating activities at least five weekends per year from Lighthouse Hill for whitewater users. Whitewater flows are provided as follows: one weekend in June-400 cfs; two weekends in July-750 cfs; the first full weekend in August-750 cfs; and the first weekend in September-750 cfs.

When inflow is fairly constant, ramping flow rules must be followed. When base flows are greater than 185-cfs, release increases are limited to a maximum increment of 400-cfs over 24 hours. Release increases are limited to a maximum increment of 200-cfs over 24 hours, when base flow is 185 cfs or less. Reductions in releases follow the same rule with the exception that the time frame changes from 24 hours to 12 hours.

Target WSEs for Salmon River Reservoir may not be achievable during periods of high or low inflows. High-flow and low-flow periods are defined when the WSE at Salmon River reaches the elevation thresholds; again define in Table 1 above.

During high-flow or low-flow periods, base flows take precedence over reservoir elevations. An executive board of the FMAT, consisting of EBH and the NYSDEC, is used to mutually agree on temporary reduction in base flows or whitewater releases during extreme drought or emergency conditions. If modifications occur, EBH notifies the FERC, the NYSDEC and the USFWS as soon as possible, but no later than 10 days after each such incident.

*Throughout the prior LIHI certification period, a number of incidents occurred where the downstream base flow was not met. In each case<sup>8</sup>, EBH reported the violation and gave a reason for its occurrence.*

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<sup>8</sup> A July 25, 2006 FERC letter on the 6/27/06 minimum flow deviation—  
<http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11095014>. A December 17, 2007 FERC letter on receipt of



*The majority of deviations occurred due to electrical failures. The June 26, 2006 incident was caused by a power line trip due to lightning. The June 3, 2009 incident was caused by a Lighthouse Hill generator trip due to low oil. The July 2011 incident was due to a transmission line trip causing Lighthouse Hill to shut down. The January 28, 2013 incident was again due to a transmission line trip. Finally, the September 13, 2013 incident was caused by a failed oil pump at Lighthouse Hill.*

*Two of the deviations occurred based on planned decisions of the FMAT. The December 2007 base flow reductions and cancelation of remaining whitewater flow releases was due to emergency drought conditions. The September 2012 base flow reductions were implemented to help reduce fish mortality potential as the result of dry conditions and insignificant inflow into Bennetts Bridge Reservoir.*

*The 2 hour incident on August 7, 2013 incident was due to the necessity to repair a switchyard insulator at the Lighthouse Hill station.*

*In all of these situations, the FERC accepted EBH's explanation.*

*It is my view that during the prior LIHI certification period, the Project has been shown to be in compliance regarding reservoir fluctuation and minimum and base flow requirements.*

## LIHI Criterion-Water Quality

The Project is in compliance with all conditions of its WQC issued for the Project on April 28, 1994. The WQC for the Project includes and incorporates the SRPSO and is conditioned on compliance with the terms of the settlement. It also contains standard provisions related to erosion and sediment control for project maintenance and construction activities.

According to the New York State (NYS) 2012 Section 303(d) List of Impaired Waters, the Salmon River is classified as not meeting water quality standards<sup>9</sup>. The NYSDEC classifies waters of the

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EBH notification of a flow deviation - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11537397>. An August 6, 2009 FERC letter on the 6/23/09 EBH letter providing notification of minimum flow deviation - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12104658>. A July 19, 2011 EBH notice of a minimum flow excursion - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12709972>. An August 22, 2012 EBH letter proposing a planned deviation - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13051107>. A January 29, 2013 EBH notice of a base flow excursion - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13164358>. A February 14, 2013 FERC letter on the 1/28/13 incident at the Lighthouse Hill - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13181988>. An August 7, 2013 EBH notice of base flow excursion - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13324494>. A September 13, 2013 EBH notice of base flow excursion - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13349219>. A November 4, 2013 FERC letter on the deviation occurring on September 3, 2013 - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13387117>. A June 13, 2014 FERC letter on the minimum flow deviation on 7/24/13 - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13570546>.

<sup>9</sup> <http://www.dec.ny.gov/chemical/31290.html>



Salmon River as a cold water fishery that supports trout and is best suited for fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes, and primary contact recreation. The NYSDEC has made a determination that the impairment is not caused by the Salmon River Project but is caused by contaminated sediments; Mirex and PCBs.

*Throughout the prior LIHI certification period, no new areas of concern have occurred.*

## LIHI Criterion-Fish Passage and Protection

By letter dated January 25, 1993, the U.S. Department of Interior (DOI) determined that no upstream passage facilities were currently required, but DOI reserved its authority to prescribe fish passage in the future. Section E of FERC's February 16, 1996 Final EA describes this in greater detail and Article 406 of the FERC License includes the FERC's Reservation pursuant to Section 18 of the Federal Power Act (FPA).

A natural 110-foot Salmon River Falls has historically precluded upstream fish migration. Currently, there are no mandatory fish passage prescriptions for upstream or downstream passage of riverine fish. Because management objectives for the Salmon River are subject to change over the life of the Project, the DOI reserved its authority to prescribe passage in the future.

The SRPSO and the FERC license required the installation of 1-inch trashracks at both developments. The Lighthouse Hill trashracks were replaced in 1999 and the Bennett's Bridge trashracks will be replaced when the existing 1.5 inch racks are at the end of their useful life.

*Throughout the prior LIHI certification period, EBH has been in compliance with mandatory fish passage prescriptions for upstream and downstream passage of riverine, anadromous and catadromous fish. No new areas of concern have occurred.*

## LIHI Criterion-Watershed Protection

The NYSDEC estimates that more than 50% of the project impoundments have dedicated buffer zones for conservation purposes; however, the project boundary does not extend 200-feet from the high water mark. Much of the upland property is owned by NYS and managed as state forest land, based on a transfer of ownership from NMPC as part of the SRPSO.

On their own initiative, exempt from any FERC license requirement, EBH collaborated with the NYSDEC to develop land-use practices consistent with adjoining State properties. In consultation with the NYSDEC, EBH developed a Land Use Management Plan (LUMP) for project lands that manages shorelines previously developed and protects undeveloped properties.



In addition, EBH agreed to establish the Salmon River Enhancement Fund (SREF) as part of the SRPSO which is financed by contributions from EBH<sup>10</sup>. This fund supports the LUMP for the Salmon River.

*A review of the FERC docket indicates that during the prior LIHI certification period, the Project is in compliance with the SRPSO and the FERC license. An additional 3 years of certification was credited in the previous LIHI certification based on the amount of land transfers and the Salmon River Enhancement Fund.*

*Given that no new areas of concern have occurred and that EBH continues to work cooperatively with the NYSDEC with regard to the LUMP and SREF, a continuation of an eight year certification is warranted.*

## LIHI Criterion-Threatened and Endangered Species

The NYSDEC and the USFWS have previously identified the Bald Eagle as an occasional transient within a mile of the Project area. The USFWS has identified the Indiana Bat as present or thought to be present in the Project area and/or downstream reach.

EBH has demonstrated that the Project and its operations do not negatively affect listed species. In addition EBH and the USFWS have a mutual understanding that planned land use practices, such as logging, that have a potential likelihood to affect species of concern will be made available to the USFWS prior to the start of work.

*A review of the FERC docket indicates that during the prior LIHI certification period, the Project is in compliance with both state and federal resource agencies concerns pertaining to threatened and endangered species and that no new areas of concern have occurred.*

## LIHI Criterion-Cultural Resource Protection

The FERC license incorporates a Programmatic Agreement (PA) and Cultural Resource Management Plan (CRMP) for addressing the historic character of this Project. The historical resources for this Project are limited to the Bennett's Bridge powerhouse, dam, and surge tank structures. A component of the CRMP, known as the Historic Properties Management Plan (HPMP) requires EBH to file and annual report on activities conducted at the Salmon River Project each year. A review of the FERC docket indicates that this annual reporting was not followed for calendar years 2010, 2011 and 2012 but started up again in 2013. It is believed that this discrepancy occurred as a result of internal restructuring and FERC compliance reassignments with EBH at the end of 2009. The FERC, neither

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<sup>10</sup> Based on a July 31, 2014 phone call with Steve Murphy, Compliance Specialist, EBH, the annual contribution to the SREF varies since it is based on the amount of revenue that could have been collected from the amount of water diverted to the SRFH from the Lighthouse Hill reservoir. This diversion is typically about 22-cfs. The estimated loss in generation revenue is invoiced to the NYSDEC. The monies received from the NYSDEC are then transferred to the SREF.



EBH nor other Federal or State agencies expressed concerns regarding this oversight. The latest annual filing of the historical properties Manage Plan (HPMP) was submitted by EBH on February 20, 2014.<sup>11</sup>

*With the exception of the three year gap of filing the HPMP, a review of the FERC docket indicates that during the prior LIHI certification period, the Project is in compliance with both state and federal resource agencies concerns pertaining to protection of cultural resources and that no new areas of concern have occurred.*

## LIHI Criterion-Recreation

Article 412 of the FERC license references an “Order Modifying and Approving the Recreation Plan” for the Project that was issued May 1, 1997. The FERC issued an “Order Amending Recreation Plan” on February 10, 2004<sup>12</sup>. All enhancements in these recreation plans have been implemented by the EBH.

In addition to these recreational facilities, EBH has also implemented whitewater flow releases (at least five weekends per year) below the Lighthouse Hill Development pursuant to Article 401. The Project allows access to the reservoir and downstream reaches without fees or charges.

*Throughout the prior LIHI certification period, the Project has been in compliance with all requirements regarding recreation protection, mitigation and/or enhancements included in the FERC license. The Project allows access to the reservoir and downstream reaches without fees or charges. Additionally, no new areas of concern were found.*

## LIHI Criterion-Facilities Recommended for Removal

*A review of the FERC docket indicates that during the prior LIHI certification period, EBH does not have any facility that has been recommended for removal by a natural resource agency.*

## RECOMMENDATION

*A review of the recertification application and a FERC docket search from the start of the previous LIHI certification, approximately November 14, 2005 to the end of the certification on February 14, 2014 and through July of 2014, exemplifies that EBH has been proactive regarding environmental issues associated with the Project.*

*Most required filings were on time without the need of time extension requests. The docket search review resulted in no major non-compliance issues surfacing in the record. The project continues to satisfy the entire LIHI criteria.*

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<sup>11</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13466515>

<sup>12</sup> <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10061013>





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August 1, 2013

*Also, given that EBH continues to work cooperatively with the NYSDEC with regard to the LUMP and SREF, a continuation of an eight year certification is warranted.*

*Based on my review, I recommend that EBH be issued a LIHI recertification for an additional eight years for the Salmon River Project, FERC Dockets P-11408.*

**Gary M. Franc**



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Hydropower Consulting & Modeling*



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*August 1, 2013*

APPENDIX A  
SUMMARY OF E-LIBRARY SEARCH  
(FERC 11408)  
(REVERSE CHRONOLOGICAL ORDER)