

*Reviewer's Report for Application  
for Recertification to the Low  
Impact Hydropower Institute  
from EBH – Lower Raquette River*

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1/16/2015**

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## **REVIEW OF APPLICATION FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE (LIHI) OF THE LOWER RAQUETTE RIVER PROJECT**

*Prepared by:*  
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January 16, 2015

### **1. INTRODUCTION**

The newly defined Lower Raquette River Project (LRRP or Project) is comprised of the Federal Energy Regulatory Commission's (FERC) license 2330 that includes Erie Boulevard Hydro's (EBH) Norwood, East Norfolk, Norfolk and Raymondville hydro developments. EBH is a wholly owned subsidiary of Brookfield Renewable Energy Group (BREG).

Prior to this review, the LRRP was certified as part of the larger Raquette River Project (RRP or LIHI certificate #14), which was comprised of fourteen hydro developments in FERC licenses 2060, 2084, 2320 and 2330.<sup>1</sup> LIHI #14's second five year recertification for the RRP ended on July 9, 2014.

EBH submitted a third application to LIHI for recertification of the RRP on May 12, 2014. Based on review comments by the U.S. Fish and Wildlife Service (USFWS) on May 27, 2014<sup>2</sup>, EBH resubmitted a revised LIHI application for recertification on July 28, 2014.

In reviewing this latest application package, LIHI determined that the RRP needed to be separated into three smaller LIHI certificates to help reduce the overall size and complexity of the issues, and to make the application more manageable. A logical approach was to segment the prior LIHI project by FERC licenses, as described here. This solution was arrived at after discussions with EBH. The applicant agrees with this new approach.

The LRRP will now be defined as LIHI Project #14C going forward. The developments in FERC licenses 2060 and 2084 will now be defined as the Upper Raquette River Project (URRP or LIHI #14A). The developments in FERC license 2320 will now be defined as the Middle Raquette River Project (LRRP or LIHI #14B).<sup>3</sup> This report reviews the applicable portions of the latest application for certification of the LRRP.<sup>4</sup>

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<sup>1</sup> FERC licenses – 2060 (Carry Falls), 2084 (Stark Falls, Blake Falls, Rainbow Falls, Five Falls, and South Colton), 2330 (Higley, Colton, Hannawa and Sugar Island), 2320 (Norwood, East Norfolk, Norfolk and Raymondville).

<sup>2</sup> USFWS LIHI application request, " ... Brookfield should update the entire LIHI Application to reflect current conditions, not those that existed at the time of the 1998 Settlement or the original application to LIHI. In addition, they should provide photo-documentation that demonstrates that all of the eel ladders have been successfully installed and are operating as designed. Finally, Brookfield should indicate which fish protection and downstream passage facilities have been completed and which are yet to be completed (along with proposed installation dates) ..."

<sup>3</sup> FERC issued separate licenses for the Carry Falls Project (P-2060), the Upper Raquette River Project (P-2084), the Middle Raquette Project (P-2320) and the Lower Raquette River Project (P-2330) on February 13, 2002. The term for each license was for 31 years and 11 months ending on December 31, 2033. In December of 2006, FERC amended the Lower Raquette River Project as a means of accelerating the fish protection and downstream passage schedule.

<sup>4</sup> EBH – Daniel Daoust, Compliance Specialist - (315.598.6130 – [Daniel.Daoust@brookfieldrenewable.com](mailto:Daniel.Daoust@brookfieldrenewable.com)).

## 2. PROJECT LOCATION

The Project consists of four hydro developments, Norwood, East Norfolk, Norfolk and Raymondville, along the Raquette River in St. Lawrence County, New York.

The Raquette River, with a total drainage basin of 1,269 square miles at its mouth, originates in the Adirondack highlands at Blue Mountain Lake, Raquette Lake and Long Lake, flows generally north-northwest for more than 120 miles, through Potsdam, New York and empties into the St. Lawrence River, near Massena, New York into the St. Lawrence River/Seaway at the St. Regis Indian Reservation in Franklin County.

The area experiences cold, snowy winters and short summers. Annual precipitation is about 40 inches. As the river flows north, it transitions from cold water habitat to a cool water aquatic fishery as the river reaches the lower gradients.

Most of the basin is sparsely populated, with much of the land forested and brush land. The Project is in a largely rural, forested area that is dependent on forestry, some agriculture, wood products, and tourism. Historically, the river has been developed for water power for sawmills, paper mills, tanneries, and other industry.

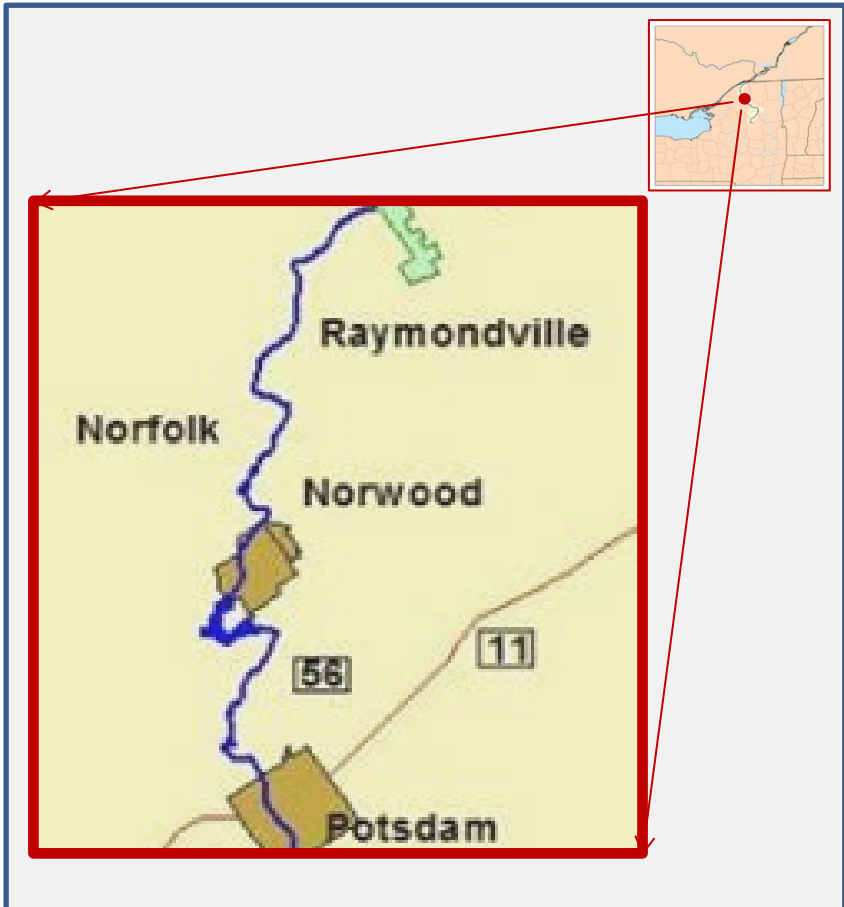


Figure 1 - Location Map

In the Raquette River headwaters, the Carry Falls development, located at river mile (RM) 68 impounds 877 square miles (sq. mi.) of upstream drainage. This development's seasonal storage pond is the largest on the Raquette River (RM 76 to 68) and is used to store and regulate the majority of this upstream flow to the downstream MRRP & LRRP developments. Flows below the MRRP's most downstream project (Sugar Island) travel an additional ten miles before reaching the most upstream development in the LRRP (Norwood).

Four other FERC projects are located within this ten mile stretch of the Raquette River. They include the Potsdam Project (FERC-2869) (RM 35), owned by the Village of Potsdam, Sissonville Limited Partnership's (SLP) Sissonville Project (FERC-9260) (RM 33) and EBH's Hewittville (FERC-2499) (RM 32) and Unionville (FERC-2498) (RM 31) Projects, acquired in March of 2007. All of these projects have individual dams/spillways that receive inflow from the MRRP for power production. Project outflows are passed through each project and eventually become inflow for the LRRP.

EBH's Yalerville Project (P-9222) (RM 25) is also located on the Raquette River within the LRRP's boundary, downstream of the Norwood development and upstream of the East Norfolk development.

### **3. PROJECT DESCRIPTION**

The LRRP is located on the Raquette River in St. Lawrence County, NY about ten miles below the MRRP. The Project consists of four developments, Norwood, East Norfolk, Norfolk and Raymondville, as shown in Table 1. Each development has a dam, reservoir, and powerhouse. From 2002 to about 2007, the LRRP was operated as described in the Raquette River Project Offer of Settlement (RRPSO), submitted to FERC on April 22, 1998<sup>5</sup> and incorporated into the 2002 FERC license<sup>6</sup>.

On June 30, 2006, EBH filed an application with the New York State Department of Environmental Conservation (NYSDEC) for a Water Quality Certificate (WQC) for proposed turbine upgrades. The NYSDEC issued its WQC on October 13, 2006<sup>7</sup>. The WQC conditions required:

- (1) That the WQC certification issued for the project upon its relicensing in February 2002 continues to be in full force,
- (2) Requires EBH to operate the impoundments in a Run-of-River (ROR) mode,
- (3) EBH to develop and submit to the NYSDEC a revised stream flow and water level monitoring plan (SWLMP) within six months after issuance of the license amendment,
- (4) EBH to install one inch trashracks at the Norwood development in 2007, and,
- (5) EBH to install upstream eel passage at each development.

On December 5, 2006, FERC issued an amended license for the Lower Raquette River Project (P-2330) (LRRAL)<sup>8</sup> that incorporated conditions of the WQC. The amended license authorized replacing the existing turbines for all four developments (Norwood, East Norfolk, Norfolk, and Raymondville) and changed their operation to a ROR mode. The overall installed capacity increased from 12.0 megawatts (MW) to 18 MW. Additionally, EBH agreed to accelerate the implementation of the fish protection and downstream passage measures at the Norwood development from 2010 to 2007 and install upstream eel passage at all four developments.

Each LRRP development was constructed in 1928, and contained a single vertical turbine. The replacement of the four turbines and associated generator rewinds resulted in increasing the total hydraulic capacity of the LRRP from 6,625 cubic feet per second (cfs) to 8,503-cfs and the average annual energy (AAE) by 24.9 gigawatt-hour (GWh) per year.

The Norwood development's single vertical turbine with an installed capacity of 2.0 MW was upgraded to a Kaplan runner upgrade with an installed capacity of 3.1 MW and a hydraulic capacity increased from approximately 1,580-cfs to 2,099-cfs. The new runner allows better utilization of the existing generator capacity resulting in an additional output of 4.43 GWh per year.

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<sup>5</sup> RRPSO can be found here - [http://elibrary.ferc.gov/idmws/search/intermediate.asp?link\\_info=yes&doclist=1845587](http://elibrary.ferc.gov/idmws/search/intermediate.asp?link_info=yes&doclist=1845587)

<sup>6</sup> February 13, 2002 FERC License - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11860653>

<sup>7</sup> October 13, 2006 WQC - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11162942>

<sup>8</sup> December 5, 2006 FERC Amended License - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11199505>

The East Norfolk development's single vertical turbine-generator with an installed capacity of 3.0 MW was upgraded to a Kaplan runner with an installed capacity of 4.8 MW and the hydraulic capacity increased from approximately 1,635-cfs to 2,067-cfs. The new runner's increase in output required a generator rewind and replacement of the step up transformer. AAE increases by 5.94 GWh.

The Norfolk development's single vertical turbine with an installed capacity of 4.5 MW was upgraded to a Kaplan runner with an installed capacity of 7.0 MW and the hydraulic capacity increased from approximately 1,770-cfs to 2,238-cfs. The new runner allows better utilization of the existing generator capacity resulting in an additional output of 9.72 GWh per year.

The Raymondville development's single unit rated for 2.0 MW was upgraded with a Kaplan runner upgrade increasing the installed capacity to 3.1 MW and the hydraulic capacity from approximately 1,640-cfs to 2,099-cfs. The new runner allows better utilization of the existing generator capacity resulting in an additional 4.83 GWh per year.

<b>Development</b>	<b>River Mile</b>	<b>Latitude of Dam</b>	<b>Longitude of Dam</b>	<b>Generation (MW)</b>	<b>Dam Crest Elevation (feet)</b>
Norwood	28	44.743300	-75.00530	3.1	326.1
East Norfolk	23	44.794722	-74.98556	4.8	287.9
Norfolk	22	44.802220	-74.99055	7.0	254.1
Raymondville	20	44.833900	-74.98060	3.1	209.6
<b>Total</b>				<b>18.0</b>	

These improvements were completed and placed in service near in 2008. On September 12, 2008, EBH filed a Request for Certification of Incremental Hydropower Generation on developments of license 2330<sup>9</sup>. On April 16, 2009, FERC approved and certified incremental energy for the Project<sup>10</sup>.

### **3.1 Major Project Works –Norwood Development**

The Norwood development has a total drainage area of 1,045 sq. mi. with an intervening drainage area of 51 sq. mi. between the Norwood and the upstream MRRP's Sugar Island development and consists of:

- (1) A 188-foot-long by 23-foot-high concrete gravity dam with 1-foot-high wooden flashboards;
- (2) A reservoir with a 350-acre surface area and a 1,900-acre-foot usable storage capacity at normal maximum pool elevation 327.1 feet mean sea level (MSL);
- (3) A concrete intake structure with steel trashracks oriented 90 degrees to the direction of flow, a skimmer section, and three motor-operated steel sliding gates;
- (4) Two timber flood gates, one 9-feet, 9-inches wide by 12-feet high, and the other 12-feet high by 12-feet wide;
- (5) A concrete log chute with stop log opening 11-feet, 2-inches wide by 4-feet, 6-inches high;
- (6) A concrete and brick powerhouse 59-feet, 9-inches long by 43-feet wide by 34-feet high containing a 3.1 MW generating unit;
- (7) A 3-mile-long, 23 kilovolt (kV) transmission line connecting the Norwood and Norfolk developments, and;
- (8) Appurtenant facilities.

<sup>9</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11804226>

<sup>10</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11991682>

### **3.2 Major Project Works – East Norfolk Development**

The East Norfolk development has a total drainage area of 1,063 sq. mi. with an intervening drainage area of 18 sq. mi. between the East Norfolk and the upstream Norwood development, and consists of:

- (1) A concrete gravity dam with seven hand-operated sluice gates measuring 8-feet wide by 9-foot high protected by steel trashracks oriented 24 degrees to the direction of flow;
- (2) A reservoir with a 135-acre surface area and a 360-acre-foot usable storage capacity at normal maximum pool elevation of 287.9 feet MSL;
- (3) A 4-foot by 4-foot pond drain;
- (4) A concrete intake structure equipped with steel trashracks oriented 90 degrees to the direction of flow, a skimmer section, and an ice chute with a steel sliding gate;
- (5) A 32-foot wide by 1,408-foot long oval steel flume;
- (6) A powerhouse containing a single 4.8 MW generating unit;
- (7) a 0.86-mile-long, 23 kV transmission line connecting the East Norfolk and Norfolk developments, and;
- (8) Appurtenant facilities.

### **3.3 Major Project Works – Norfolk Development**

The Norfolk development has a total drainage area of 1,066 sq. mi. with an intervening drainage area of 3 sq. mi. between the Norfolk and East Norfolk developments. Norfolk consists of:

- (1) A reservoir with a 10-acre surface area and a 35-acre-foot usable storage capacity at normal maximum pool elevation of 254.9 feet MSL;
- (2) A 20-foot-high concrete dam with 10-inch high flashboards, three 12-foot wide by 10-foot high steel headworks gates, and two 9-foot wide by 9-foot high sluice gates;
- (3) A 14-foot diameter, 103-foot long steel penstock fitted with a motor-operated 14-foot diameter butterfly valve;
- (4) A 700-foot long, 14-foot diameter wood stave pipeline protected by two steel trashracks oriented 90 degrees to the direction of flow, a skimmer section, and a 6-foot wide by 6-foot high ice sluice gate used for flushing ice and debris downstream;
- (5) A 1,275-foot-long power canal;
- (6) A concrete and brick powerhouse measuring 52-feet, 6-inches wide by 50-feet, 7-inches long by 35-feet high containing a 7.0 MW generating unit;
- (7) A short 2.4 kV underground transmission line and a 2.32-mile long, 115 kV transmission line connecting the Norfolk and Raymondville developments, and;
- (8) Appurtenant facilities.

### **3.4 Major Project Works – Raymondville Development**

The Raymondville development has a total drainage area of 1,077 sq. mi. with an intervening drainage area of 11 sq. mi. between the Raymondville and the upstream Norfolk development. Raymondville consists of:

- (1) A 50-acre reservoir area and a 315-acre-foot usable storage capacity at normal pool elevation 211.6 feet MSL;
- (2) A 292-foot, 6-inch long by 17-foot high concrete gravity dam having 2.0-foot high rubber and steel flashboards;
- (3) Two 4-foot by 4-foot pond drains;
- (4) A 48-foot wide by 447-foot-long concrete power flume having trashracks oriented 90 degrees



to the direction of flow, an ice chute, and three steel flume intake gates, each 12 feet wide by 10 feet high;

- (5) A concrete, brick, and steel powerhouse measuring 59-feet, 9-inches wide by 42-feet long by 34-feet high containing a 3.1 MW generating unit; and
- (1) Appurtenant facilities.

### **3.5 Mode of Operation for Power**

From 2002 to about 2007, as allowed in its 2002 FERC License, the LRRP developments were operated in a pulsing mode. The normal reservoir fluctuation was limited to no more than 0.5 foot at the Norwood, East Norfolk, and Raymondville developments and no more than 1.0 foot at the Norfolk development. As subsequently modified in the December 5, 2006 LRRAL, the operation of all the LRRP's developments was changed from a pulsing mode to a ROR mode. On March 24, 2010, EBH provided FERC with the final revised SWLMP<sup>11</sup>. This document finalized the definition of ROR mode.

The ROR mode of operation targets a normal maximum fluctuation limit of 0.2 feet below the dam crest or top of flashboards. However, up to 0.5 feet of impoundment fluctuation is allowed before an impoundment level deviation notification to the NYDEC and FERC is warranted. This ROR mode will maintain reservoir levels at or near the top of the dam crest or top of flashboard. Since minimum flows at the developments are passed over weirs a slightly higher minimum flow and/or fish movement flow will be provided.

The LRRP developments have an overall installed capacity of 18.0 MW and produce an average annual energy (AAE) of 106.0 GWh (Plant factor of 67.2%).

### **3.6 Mode of Operation for Minimum and Base Flow Releases**

As described in the 2006 amended FERC license, the LRRP developments operate in a ROR mode while supplying minimum flows<sup>12</sup> as follows:

- (1) From Norwood, no minimum flow is required;
- (2) From East Norfolk, a year-round release of 75-cubic feet per second (cfs)<sup>13</sup> through the stop log section near the left shore and intake;
- (3) From Norfolk, a year-round release of 75-cfs below the confluence of the trash sluice channel and the bypass reach (main channel of the Raquette River). A release of 37.5-cfs<sup>14</sup> shall be maintained from the stop log section of the dam near the right shore and head gates at the upstream end of the bypass reach. A second release of 37.5-cfs<sup>15</sup> shall be maintained in the trash sluice channel which enters the bypass reach at approximately the halfway point, and;
- (4) From Raymondville, no minimum flow is required.

EBH maintains a base flow downstream of the Raymondville development. During "wet" and "normal"

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<sup>11</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12301362>

<sup>12</sup> All minimum flows actual release at any given time may be slightly above or below the required value. The degree of variation is a function of head pond impoundment fluctuation. EBH must determine the appropriate gate settings for the provision of minimum flows at each development based upon the midpoint of the normal impoundment fluctuation of each development. For example, if the normal impoundment fluctuation is 1.0 foot, and the instream flow is 45 cfs, the gate setting to provide 45 cfs shall be based upon a drawdown of 0.5 feet.

<sup>13</sup> The 75-cfs can vary from 65-cfs to 85-cfs.

<sup>14</sup> The 37.5-cfs can vary from 350cfs to 40-cfs.

<sup>15</sup> The 37.5-cfs can vary from 350cfs to 40-cfs

conditions, the base flow equals or exceeds 560-cfs. During a "dry" condition, the base flow equals or exceeds 290-cfs. During a "drought" condition, the licensee will initiate a base flow equal to the daily average flow of the USGS gage at Piercefield, NY and consult with NYSDEC staff to determine any appropriate adjustments to the base flow and/or the Carry Falls drawdown limit (URRP development). Base flows are to be maintained and measured at the area known as Kent Mill "cemetery riffle", located approximately 4 miles downstream of the Raymondville Development. Total daily average outflow from Colton (MRRP development), in conjunction with the Carry Falls' pond elevation and the Piercefield gage data will be used in determining the type of flow condition and corresponding base flow.

To ensure the base flows are being met, a timer system is installed and calibrated into the LRRP control scheme to maintain the maximum shut-down (or generator motoring time) for the appropriate developments of the LRRP, resulting in the required minimum instantaneous base flow.

A "wet" condition exists when, *"The total daily average outflow from Colton is greater than or equal to 1600-cfs and the elevation within Carry Falls Reservoir is greater than, or equal to 1357-feet MSL."* The timer system for the LRRP is not used under this condition.

A "normal" condition exists when, *"The total daily average outflow from Colton is between 650-cfs and 1600-cfs, and the elevation within Carry Falls Reservoir is greater than or equal to 1357-feet MSL."* A timer system for the LRRP may be used to ensure provision of the 560-cfs.

A "dry" condition exists when, *"The total daily average outflow from Colton is less than 650-cfs and the elevation within Carry Falls Reservoir is greater than or equal to 1357-feet MSL."* A timer system for the LRRP is used to ensure provision of the 290-cfs. A "dry" condition is experienced less than 5 percent of the time annually. Once the Carry Falls Reservoir elevation drops to 1357-feet MSL or less, EBH starts monitoring the daily average flow record of the Piercefield USGS gage to determine if a drought condition exists.

A "drought" condition exists when, *"The daily average flow at the Piercefield gage is less than 250-cfs<sup>16</sup> and a Carry Falls Reservoir elevation is less than 1357- feet MSL. "*

During a drought condition, EBH initially maintains a base flow downstream of Raymondville of at least the daily average flow of the Piercefield gage. Additionally, EBH notifies and consults with NYSDEC staff to determine if modifications to the base flow and/or the Carry Falls drawdown limit are warranted. The "drought" condition is experienced less than 1 percent of the time annually.

These operating constraints may be curtailed or suspended if required by operating emergencies beyond the control of EBH, including security, and for short periods upon mutual agreement between EBH and the NYSDEC. If the limitations are so modified, EBH notifies the FERC as soon as possible, but no later than ten business days after each such incident.

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

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<sup>16</sup> Daily average flow at the Piercefield gage is approximately 85 percent that of daily average flows measured at Raymondville.

### **3.7 Mode of Operation for Downstream Fish Passage**

As defined in the 2002 FERC license, EBH provides for safe downstream fish movement and protection at all of the LRRP developments coincident with the release of minimum flows and modifications to the structures and streambed in order to make the flows more “fish friendly”<sup>17</sup>.

New 1-inch clear spacing physical barriers installed immediately above their existing trashrack structure were completed at Raymondville in 2002 and at Norfolk in 2004. In accordance with provisions of the 2006 FERC Amended License, new 1” trashrack were installed at East Norfolk in 2006<sup>18</sup> and at Norwood<sup>19</sup> in 2007 ahead of the original schedule.

Downstream fish passage may be curtailed or suspended if required by operating emergencies beyond the control of EBH, including security, and for short periods upon mutual agreement between EBH and the NYSDEC. If the limitations are so modified, EBH will notify the FERC as soon as possible, but no later than ten business days after each such incident.

For construction and maintenance activities that require curtailment of downstream fish passage, EBH's operating procedure (HOP 202) requires notification of NYSDEC.

### **3.8 Mode of Operation for Upstream Fish Passage**

No upstream fish passage requirements were part of the 2002 FERC license. However, Article 403 of the license reserves the FERC's authority to require EBH to construct, operate, and maintain fishways as the U.S. Department of Interior (USDOI) may prescribe.

As part of the 2006 Amended License, EBH was required to install upstream eel passage at all four developments of the LRRP and at its Yaleville Project (P-9222). On March 6, 2008, FERC issued approval of the Eel Passage Plan<sup>20</sup> and implementation schedule, filed by EBH on December 17, 2007. Eel passage facilities at the Raymondville, Norfolk and East Norfolk developments were planned for completion by December 31, 2008 and for the Norwood development by December 31, 2009<sup>21</sup>.

The eel passage facilities consist of 18-inch wide aluminum flumes with solid bottoms, installed with a maximum slope of 45 degrees, one-foot wide aluminum troughs to convey attraction flows, pumps and siphons to provide attraction and ladder flows, removable cover plates and substrate liners in the flumes. Siphon pipes are used to provide attraction flows of 120 gallons per minute (GPM) and pumps will provide 20-GPM into the ladders. The ladders will be hinged in the lower sections to prevent damage during high flows, ice and from other debris impacts.

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<sup>17</sup> Fish-friendly flow is a flow that is released in a manner that is not expected to injure fish through contact with hard or rough surfaces.

<sup>18</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11315929>

<sup>19</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11657604>

<sup>20</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11600045>

<sup>21</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11600045>

## **4. REGULATORY STATUS**

### ***4.1 Summary of Project Redevelopment and Agency Consultation Process***

The original license for the Lower Raquette River Project (P-2330) was issued in 1964, with an expiration date of December 31, 1993. From January 1, 1994 until the issuance of the 2002 FERC license, the project operated under annual licenses. Niagara Mohawk Power Company (NMPC), the predecessor of EBH<sup>22</sup>, filed a new license application in 1991.

Notice of the relicense application was issued on February 23, 1993, soliciting comments, protests, and motions to intervene. The U.S. Department of the Interior (USDOI), Adirondack Mountain Club (AMC), the New York Department of Environmental Conservation (NYSDEC) and New York Rivers United (NYRU) filed motions to intervene in the proceeding.

In 1995, parties to the pending FERC relicense proceedings for the Lower Raquette River Project (P-2330) and the Middle Raquette River Project (P-2320) requested that all proceedings be combined with the FERC relicense proceedings for the Carry Falls and the Upper Raquette River Project. On December 13, 1995, the FERC approved the request and Niagara Mohawk Power Company (NMPC), the predecessor of EBH agreed to accelerate the FERC relicensing of the Carry Falls and Upper Raquette River Projects<sup>23</sup>.

On April 22, 1998, NMPC filed the RRPSO that addressed issues pertaining to all four FERC licenses on the Raquette River, signed by seventeen participants<sup>24</sup>. Shortly thereafter, the NYSDEC issued the WQC for the Raquette River on June 11, 1998.

The RRPSO provides for minimum flows releases, limitations on impoundment fluctuations, and fish passage and protection measures to protect and enhance the water quality and fishery resources of the Raquette River. It also provides for enhanced recreational opportunities in a manner that is consistent with the undeveloped nature of the surroundings.

On February 10, 1999, NMPC filed notice of a new license application which reflected the provisions of the RRPSO and the WQC<sup>25</sup>, soliciting comments, protests, and motions to intervene. The USDOI, AMC and the NYSPA filed motions to intervene in the proceeding.

On June 16, 2000, the FERC issued for comment a draft Multiple Project Environmental Assessment (DEA) that evaluated the potential environmental impacts of the continued operation of the four projects<sup>26</sup>. The USDOI, NYSDEC, the St. Regis Mohawk Tribe, AMC, and EBH filed comments on the DEA.

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<sup>22</sup> In 1999, NMPC sold their entire hydropower portfolio to Orion Power. EBH was created as a subsidiary of the newly formed company dealing with the operation of the hydropower assets. Orion Power was eventually acquired through a secession of sales and purchases by the BREG, current owner of EBH.

<sup>23</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=8299440:1>

<sup>24</sup> RRPSO signatories include EBH, the NYSDEC, the U.S. Department of the Interior's Fish and Wildlife Service (USFWS), AMC, NYSPA, NYRU, American Canoe Association (ACA), AR, AW, NASNY, the National Park Service (NPS), New York State Conservation Council (NYSCC), North Country Raquette River Advocates (NCRRA), St. Lawrence County, The Adirondack Council (AC), APA, and the Jordan Club. The New York Power Authority (NYPA) and the New York Council of Trout Unlimited (TUNY) participated in the proceeding and had no objections, but chose not to become signatories.

<sup>25</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=3150004>

<sup>26</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=8057323:1>

On April 18, 2001, Commission staff issued a final EA (EA)<sup>27</sup>. The EA concludes that relicensing the four projects will not have a significant adverse impact on the quality of the human environment and recommends issuance of new licenses as proposed in the applications.

On February 13, 2002, the FERC issued separate licenses for the Carry Falls Project (P-2060)<sup>28</sup>, the Upper Raquette River Project (P-2084)<sup>29</sup>, the Middle Raquette Project (P-2320)<sup>30</sup> and the Lower Raquette River Project (P-2330)<sup>31</sup>. The term for each license was for 31 years and 11 months ending on December 31, 2033.

On July 3, 2006, EBH filed an application to amend the licensee for FERC Project 2330. The FERC issued the "ORDER AMENDING LICENSE AND ACCELERATING FISH PROTECTION AND DOWNSTREAM PASSAGE SCHEDULE" for the Project on December 05, 2006<sup>32</sup>.

#### **4.2 License and Compliance Issues**

Key issues in the RRPSO and the 2002 FERC license related to the LRRP included:

- (1) Providing minimum flows in bypass reaches;
- (2) Providing flows for fish spawning and downstream passage;
- (3) Providing a minimum base flow in the river below Raymondville;
- (4) Reducing reservoir drawdowns and fluctuation limits;
- (5) Constructing portage facilities and trails at many of the developments,
- (6) Maintaining and improving recreation access,
- (7) Transferring certain lands for recreational access into the project boundary,
- (8) Establishing a Raquette River Advisory Committee (RRAC) to advise and provide comments on the recreation plan for the projects, and to approve expenditure of a \$5000 annual fund for mitigation and enhancement projects.
- (9) Requires a SWLMP, including gages visible to the public.

In a settlement provision that remained separate from the FERC licensing, EBH agreed to convey over 12,000 acres, primarily within the vicinity of the URRP, to New York State,

In addition, to protect and enhance project-related environmental resources, in the 2006 amended license, EBH agreed:

- (1) That the WQC certification issued for the project upon its relicensing in February 2002 continues to be in full force,
- (2) To increase the authorized generating capacity by replacing the existing turbine in the powerhouse of each of the four developments, Norwood, East Norfolk, Norfolk, and Raymondville;
- (3) To operate the impoundments in a ROR mode,
- (4) To develop and submit to the NYSDEC a revised SWLMP within six months after issuance of the license amendment,
- (5) To install one inch trashracks at the Norwood development in 2007, and;
- (6) To install upstream eel passage at each LRRP development.

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<sup>27</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=164819:1>

<sup>28</sup> FERC license for (P-2060) - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13707255>

<sup>29</sup> FERC license for (P-2084) - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11860652>

<sup>30</sup> FERC license for (P-2320) - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13707261>

<sup>31</sup> FERC license for (P-2330) - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11860653>

<sup>32</sup> 2006 Amended License - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11199505>

## 5. PUBLIC COMMENTS RECEIVED

EBH submitted a third application to LIHI for recertification of the RRP on May 1, 2014. LIHI notified and requested public comment on EBH's application for LIHI certification on May 12, 2014. LIHI policy is for all comments to be posted to the web site and for EBH to have an opportunity to respond. Any EBH responses are also posted. Public comments needed to be received on or before 5 pm Eastern time on July 1, 2014, to be considered.

Review comments from the USFWS were received on May 27, 2014. In this letter the USFWS stated, "... *The LIHI Application filed by Brookfield is incorrect and incomplete under Section C: Fish Passage and Protection. ... Brookfield should update the entire LIHI Application to reflect current conditions, not those that existed at the time of the 1998 Settlement or the original application to LIHI. In addition, they should provide photo-documentation that demonstrates that all of the eel ladders have been successfully installed and are operating as designed. Finally, Brookfield should indicate which fish protection and downstream passage facilities have been completed and which are yet to be completed (along with proposed installation dates).*" In response to these comments, EBH resubmitted a revised LIHI application for recertification on July 28, 2014.

On May 22, 2014, LIHI received a letter from Mr. John Omohundro. In this letter he stated, "...*I wish to comment on the performance of Brookfield Renewable (Erie Hydropower) in these Raquette licenses. I participated in the settlement agreement in the late 1990s and have been a regular member of the Raquette River Advisory Council (RRAC) since then. I designed, built and manage a hiking trail on Brookfield land in the Middle Raquette area. So I am familiar with the licensee's performance on recreation and cultural preservation.*

*I give the licensee good marks for the recreational opportunities it maintains in the new license, for paddlers, walkers, and soon (we expect) cyclists. Fishing platforms have been built, and, when damaged by storms, rebuilt. Enhancement of whitewater events at Stone Valley with improved safety, information, and viewing has also nearly at the construction phase. The licensee sets aside money each year in the RRAC for applicants who wish to enhance or introduce recreational or preservation features. Historic preservation, particularly along the Stone Valley recreation area in the Middle Raquette, has been addressed as illustrated by its support for the plans to interpret with signage the old mills like the tannery in the Stone Valley area.*

*The licensee has fallen behind on repairs on features built when the new license began and before, such as picnic facilities and signage at boat launches on the upper and lower Raquette, but I remain optimistic it will perform those eventually."*

Resource agency contacts contained within the LIHI certification application that have been acknowledged to be knowledgeable on the operational issues with the Project are:

1. Stephen Patch - USFWS, 3817 Luker Road, Cortland, NY 13045 - (607.753.9334 - [Stephen\\_patch@fws.gov](mailto:Stephen_patch@fws.gov)),
2. Mark Woythal - NYSDEC, 625 Broadway, 5th Floor, Albany, NY 12233-4756 - (518.402.8847 - [mswoytha@gw.dec.state.ny.us](mailto:mswoytha@gw.dec.state.ny.us))

On July 22, 2014, this reviewer emailed Mr. Stephen Path with the USFWS. In my email I stated, "*I am the LIHI reviewer tasked with determining whether Brookfield Renewable Energy Group (BREG)'s Beaver, Salmon, Raquette and Hoosic River Hydroelectric Project 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 proposed operation with regard to satisfying its licensed environmental obligations (FERC articles). 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."*

To date, other than their May 27, 2014 letter, no additional USFWS comments have been received.

*On November 5, 2014, this reviewer emailed Mr. Mark Woythal with the NYSDEC. In my email I stated, "I am the LIHI reviewer tasked with determining whether Erie Boulevard Hydropower's (EBH's) Raquette 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 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. 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.*

To date, no NYSDEC comments have been received.



## **6. CONSISTENCY WITH LIHI CRITERIA AND ISSUES IDENTIFIED**

Recertification review focuses primarily 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 recertification 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 following section summarizes the record for LIHI recertification.

### **6.1 Summary of the Reviewer's Findings**

#### **Criterion A – Flows**

As required by the LRRAL, the LRRP developments operate in a ROR mode that target a normal maximum fluctuation limit of 0.2 feet below the dam crest or top of flashboards. However, up to 0.5 feet of impoundment fluctuation is allowed before an impoundment level deviation notification to the NYDEC and FERC is warranted.

A year-round minimum flow of 75-cfs is required below the East Norfolk and Norfolk developments, while a varying base flow, from 560-cfs to 290-cfs, must be released below Raymondville. Each year EBH files documentation with FERC confirming compliance with flow and impoundment level conditions<sup>33</sup>.

A multitude of impoundment fluctuation limit and base flow deviations have occurred at the

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<sup>33</sup> The latest annual minimum flow compliance report for 2013 was filed by EBH on January 21, 2014 - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13493651>



Raymondville development since 2009. In 2010, EBH reported two deviations occurring on September 7, 2010 and September 25, 2010<sup>34</sup> both due to clogged trashracks that caused unit trips during a river flow change.

In 2011, EBH reported three deviations. The August 13, 2011 deviation was due to a pond level control problem at Raymondville for lower river flows. The August 14, 2011<sup>35</sup> deviation was due to a lightning strike at Norwood causing several developments to trip offline. Lastly, the October 9, 2011 through October 11, 2011<sup>36</sup> deviation was a planned lowering for repairs.

In 2012, EBH reported thirteen deviations. The January 10, 2012<sup>37</sup> deviation was due to an ice jam that formed on the spillway crest. The June 8, 2012<sup>38</sup>, June 22, 2012 and June 24, 2012<sup>39</sup> deviations were filed as CEII. Therefore, the causes are unknown. A July 19, 2012<sup>40</sup> deviation was due to a river flow change that based on an operator error eventually caused a unit to trip. On August 30, 2012, FERC ruled that this base flow deviation was a violation of the license because it was caused as the result of operator error. FERC included the incident in the compliance history for LRRP without recommending any penalties. An August 18, 2012<sup>41</sup> incident was caused by equipment malfunction resulting in a generator trip. The October 1, 2012 and October 3, 2012<sup>42</sup> deviations were attributed to clogged trashracks eventually causing a station trip. A November 28, 2012<sup>43</sup> incident was filed as CEII. The December 1, 2012<sup>44</sup> deviation was caused by blown fuses tripping the generator. A December 7, 2012<sup>45</sup> deviation was filed CEII. The December 15, 2012<sup>46</sup> incident was due to a faulty impoundment level probe. A December 31, 2012<sup>47</sup> incident was due to the fresh water cooling system filter baskets being plugged with debris causing oil temperature to exceed its high threshold limit and tripping the generator.

In 2013, EBH reported five deviations. The May 21, 2013<sup>48</sup>, October 17, 2013<sup>49</sup>, October 15, 2013 and October 21, 2013<sup>50</sup> and November 5, 2013<sup>51</sup> were all filed CEII.

In 2014, EBH reported eleven deviations. The March 4, 2014 and March 9, 2014<sup>52</sup> incidences were filed as CEII. An August 5, 2014<sup>53</sup> deviation was caused by a National Grid transmission line fault. The

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<sup>34</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12459361>  
<sup>35</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12803178>  
<sup>36</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12814016>  
<sup>37</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12894184>  
<sup>38</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13008704>  
<sup>39</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13022748>  
<sup>40</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13043187>  
<sup>41</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13113118>  
<sup>42</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13116959>  
<sup>43</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13127300:1>  
<sup>44</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13130464>  
<sup>45</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13132255>  
<sup>46</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13143142>  
<sup>47</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13149989>  
<sup>48</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13271619>  
<sup>49</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13375487>  
<sup>50</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13378370>  
<sup>51</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13394517>  
<sup>52</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13484403>  
<sup>53</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13611194>

September 17, 2014<sup>54</sup> deviation was caused by operator error where a breaker opened inadvertently while performing maintenance. A September 23, 2014<sup>55</sup> incident was due to clogged trashracks. The October 6, 2014<sup>56</sup> incident occurred as part of a flashboard removal procedure. While refilling upstream ponds after flashboard removal, flows above Raymondville were reduced. The Raymondville pond level controller sensed a decreasing impoundment level and it reduced turbine flow too drastically which in turn decreased total station water discharge. The October 9, 2014<sup>57</sup> incident was caused by clogged trashracks. An October 15, 2014<sup>58</sup> deviation was caused by upstream generator trips. The October 27, 2014<sup>59</sup> and October 28, 2014<sup>60</sup> incidences were due to a discrepancy in the calculated gate flows at Colton. The actual flow (as measured on the Raymondville USGS gage downstream) was less than the calculated flows. Due to the discrepancy in the SCADA flow for the Colton station at a 600-cfs declared flow, the NSCC is temporarily utilizing the Higley station outflow as the declared flow for the Raquette River. The SCADA Team and regional operations are working to improve the flow calculations for Colton gate flows. A December 22, 2014<sup>61</sup> deviation was due to ice clogging the trashracks at Raymondville and tripping the generator.

In summary, a total of 34 deviations have occurred since issuance of the last LIHI certification. Of these, twelve were filed as CEII with causes unknown; seven due to clogged trashracks; seven related to equipment failure and/or controller problems; three due to storm related generator trips; two due to operator errors and one each due to a clogged filter, an ice problem and a planned lowering of the pond for equipment repairs.

From my perspective, only five of the 22 known causes for deviations are truly due to unusual circumstances beyond the control of EBH personnel; the storm related outages, the icing of the spillway crest and the planned equipment repair. The remaining 17 instances are primarily caused by inadequate trashrack monitoring/raking, poor preventative maintenance of equipment, deficient SCADA program logic and operator error. To certify the LRRP as "Low Impact", LIHI needs assurance that these operational deviations will be significantly reduced in the future.

I recommend EBH submit a draft Deviation Reduction Plan (DRP) to LIHI no later than three months after LIHI certification of the Project. The DRP will propose proactive approaches to implement as a means of reducing the likelihood of future operational deviations. The report will address the situations causing the majority of deviations; clogged trashracks, preventative maintenance, deficient SCADA logic and operator error.

The report will propose new ways to reduce their occurrence in the future. For example, deviations caused by clogged trashracks can be reduced by changing the trashrack blockage warning to a lower head differential trigger such that the traveling operating has more time<sup>62</sup> to resolve the issue. Alternatively, installing a new trashrack racking system might work as good or better.

Problems with discharge flow transition at Raymondville when lowering the turbine flow can be resolved by adding a low level outlet alternative versus trying to quickly pass the transitional flow over

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<sup>54</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13641867>

<sup>55</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13648777>

<sup>56</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13658639>

<sup>57</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13661731>

<sup>58</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13662908>

<sup>59</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13678699>

<sup>60</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13679958>

<sup>61</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13726046>

<sup>62</sup> The Raymondville development is the farthest location from the Potsdam Office, approximately a 15 mile drive.

the spillway before the pond can total adjust to changes in turbine flow.

LIHI and EBH may need to enter into discussions on the plan before LIHI can agreed to a final DRP and its implementation schedule going forward. The final DRP needs to be completed and agreed to by both EBH and LIHI no later the six months after LIHI certification.

Additionally, I recommend that EBH provide annual reports to LIHI documenting all operational deviations that occurred throughout the year whether unintentional or planned due to construction or maintenance. The report will include all deviations that actually occurred, whether or not the deviations were eventually deemed as not violating the license by FERC. The report will be due at the same time as the annual compliance statement and payment of the annual certification fee. Based on LIHI's review of this annual report, and at LIHI's sole discretion, certification may be modified or rescinded.

Given EBH's agreement and adherence to these conditions, it is my view that this LIHI criterion is conditionally satisfied.

### **Criterion B – Water Quality**

The LRRP is in compliance with conditions pursuant to the WQC issued by the NYSDEC. The WQC includes and incorporates the terms of the RRPSO. Therefore, compliance with the WQC implies compliance with the entire RRPSO. The WQC contains standard provisions related to erosion and sediment control for project maintenance and construction activities. The NYSDEC has confirmed that EBH has properly consulted when there has been any construction at the projects that triggers WQC conditions.

The NYSDEC classifies the project area based on their designated best use. Water classifications for the project areas include Class B (Coldwater fishery) (Best use is primary contact recreation and other uses except as a source of water supply for drinking and culinary or food processing purposes), Class C (T) (Coldwater fishery that supports trout) (best use is fishing and all other uses except as a source of water supply for drinking, culinary or food processing purposes and primary contact recreation), and Class D (warm water fishery) (best use is secondary contact recreation). The NYSDEC identified no area of the Lower Raquette River in their June 3, 2002 Section 303 (d) List.

Since EBH is in compliance with water quality aspects of the WQC and the FERC license, this LIHI criterion is satisfied.

### **Criterion C – Fish Passage and Protection**

The 1998 RRPSO and the 2002 FERC license contain requirements by Resource Agencies for downstream fish passage in the form of required downstream passage flows, modifications to the structures and streambed in order to make the flows fish-friendly, and scheduled installation of 1 inch clear spaced bar trashracks to prevent/reduce entrainment. The 2006 amended license accelerated the installation of one inch trashracks at the Norwood development to 2007, and required EBH to install upstream eel passage at each LRRP development.

One inch clear spacing physical barriers were installed from 2002 through 2007, starting at the most downstream development and proceeding upstream. Installations of trashracks at Raymondville were completed in 2002, at Norfolk in 2004, at East Norfolk in 2006<sup>63</sup>, and at Norwood in 2007<sup>64</sup>.

The upstream passage for anadromous or catadromous fish was not a management objective of the RRPSO. However, the USDOJ reserved their authority to prescribe fish passage facilities for the LRRP in Article 403 of the 2002 FERC license. The Article also reserved FERC authority to require construction, operation and maintenance of any such prescribed fish passage facilities.

Upstream passage of American eel became a management goal during the 2006 license amendment proceedings for the LRRP. The FERC issued an Order Amending License and Accelerating Fish Protection and Downstream Passage Schedule on December 5, 2006 for the LRRP. In response, EBH filed a Final Eel Passage Plan (EPP) on December 14, 2007. On March 3, 2008, FERC approved the EPP<sup>65</sup>.

The facilities will consist of 18-inch wide aluminum flumes with solid bottoms, installed with a maximum slope of 45 degrees, one-foot wide aluminum troughs to convey attraction flows, pumps and siphons to provide attraction and ladder flows, removable cover plates (East Norfolk, Norfolk, and Raymondville) and substrate liners in the flumes. Siphon pipes will be used to provide attraction flows of 120 gallons per minute (GPM) and pumps will provide 20 GPM into the ladders. The ladders will be hinged in the lower sections to prevent damage during high flows, ice and from other debris impacts.

EBH proposed to install upstream eel passage facilities at the Raymondville, Norfolk and East Norfolk developments by December 31, 2008<sup>66</sup> and the Norwood development by December 31, 2009<sup>67</sup>.

On June 13, 2011, EBH notified FERC that the eel ladders at Raymondville and East Norfolk were significant damaged and loss complete sections due to unusually high flows in April and May of 2011. Neither would be available for the upcoming operation by June 15, 2011.<sup>68</sup> Eel passage remained down until August 9, 2013. On this date EBH notified FERC that the eel ladders are in place and fully operational<sup>69</sup>.

No other outstanding issues have surfaced regarding fish passage and protection aspects of its FERC license for LRRP. I conclude that EBH is in compliance with all fish passage and protection aspects of its license, and this LIHI criterion is satisfied.

#### **Criterion D – Watershed Protection**

No documentation has been provided in the LIHI application to verify that more than 50% of the project impoundments have dedicated buffer zones for conservation purposes that extend 200-feet from the high water mark.

In 1996, NMPC developed a plan for divestiture of over 12,000 acres of land within the Raquette River watershed. None of these lands were within the FERC project boundaries associated with the Carry Falls, Upper Raquette River, Middle Raquette River, or Lower Raquette River Hydroelectric Projects.

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<sup>63</sup> Letter stating trashrack installed in 2006 - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11315929>

<sup>64</sup> Letter stating trashracks installed in 2007 - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11657604>

<sup>65</sup> Approved EEP - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11600045>

<sup>66</sup> Letter stating eel ladders installed - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=11990122>

<sup>67</sup> Letter stating eel ladders installed - <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12319833>

<sup>68</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=12684193>

<sup>69</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13325761>

NMPC presented maps of this plan to the State and to the RRPSO signatories. In response, the State prepared maps indicating which parcels were of interest to the State. The signatories reviewed and commented on the maps prepared by the State. For the most part, the two sets of maps identified the same parcels. NMPC held the conveyance of only those lands identified by the State, until October 1, 1997, the scheduled close of the RRPSO negotiations.

This land conveyance process between NMPC and the State pertained to lands outside of the FERC boundaries associated with the projects of RRPSO, and therefore was outside the jurisdiction of the FERC relicensing process. However, this land conveyance process was included as part of the RRPSO because certain aspects of the land transfer affected the outcome of certain aspects of the RRPSO.

The vast majority of this land transfer to the State pertained to property associated with the nearby URRP. Please refer to the URRP recertification review report for details.

Within the MRRP license, EBH committed lands for inclusion within the FERC boundary that were associated with recreation facilities within applicable FERC boundaries but not currently within the FERC boundary. These lands include:

- Portions of the canoe portage routes at Hannawa Falls;
- The intermediate access point to the east bank of the Colton bypass reach off Lenny Road;
- Portions of the Stone Valley Trail system at Colton that were not currently within the FERC boundary;
- All lands associated with the development of the Red Sandstone Trail system.

With regard to the LRRP, no additional lands were committed. No material change in circumstances has occurred since the last recertification of this Project. Therefore, the Project in compliance with all requirements regarding watershed protection and passes this criterion.

### **Criterion E – Threatened and Endangered Species Protection**

The threatened bald eagle is known to pass within the boundaries of the LRRP only as a transient species. The NYSDEC has determined that the bald eagle will not be affected by operations of the LRRP.

Given compliance with all threatened or endangered species protection aspects of the FERC license, this LIHI criterion is satisfied.

### **Criterion F – Cultural Resources**

On February 6, 2002, EBH signed a fully revised Programmatic Agreement (PA) with FERC, the Advisory Council on Historic Preservation (ACHP), and the New York State Historic Preservation Officer (SHPO) for the four FERC licenses on the Raquette River, with the St. Regis Tribe and the USDOJ as concurring parties. By letter dated February 11, 2002, the ACHP filed with FERC the executed agreement that amended the previous 1996 PA.

On April 14, 2003, Erie submitted its required Historic Property Management Plan<sup>70</sup> (HPMP) to FERC. On September 28, 2004, FERC issued an order approving the HPMP.<sup>71</sup> As part of the HPMP, EBH is required to file an annual report. EBH has successfully complied with this requirement. The latest filing

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<sup>70</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=10473424>

<sup>71</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=10255973>

occurred on February 12, 2104.<sup>72</sup>

Given EBH is in compliance with all aspects regarding cultural resource protection, mitigation or enhancement, this LIHI criterion is satisfied.

### **Criterion G – Recreation**

On April 10, 2004, EBH submitted its final Raquette River Recreation Plan in accordance with the License article 404 and the RRPSO. On November 17, 2004, FERC issued an order approving the plan.<sup>73</sup>

Facilities provided as part of the plan included:

- At Norwood - Canoe portage, boat launch and parking area, picnic facilities;
- At East Norfolk - Canoe portage with parking (take-out only);
- At Norfolk - Canoe portage (put-in only);
- At Raymondville - Canoe portage, car top boat launch and picnic facilities with parking.

Land & Water Associates (LWA), the LIHI reviewer for the prior certification of the RRP, confirmed that the recreation facility improvements were completed according to schedule in a timely manner, in consultation with parties to the RRPSO. All facilities have both access to the reservoir and downstream reaches free of charge.

Additionally, the RRAC can advise EBH on issues related to recreation, and other resource enhancements.

The LRRP is in compliance with recreational access, accommodation, and facilities conditions in the FERC license and passes this criterion.

### **Criterion H – Dam Removal**

No state or federal agencies have recommended that dam to be removed. Therefore, the project passes this criterion.

## ***6.2 Recommendations of the Reviewer***

The application for LIHI recertification was adequate to allow for LIHI review. However, I needed to rely consistently on reference of FERC docket documents, a complete copy of the RRPSO and multiple discussions with EBH to complete my review. No material change in circumstances has occurred since the last recertification of this project.

Based on my review of information submitted by the applicant, the additional documentation noted herein, public comments submitted in writing or other communications with resource agencies and other entities, I recommend that the Lower Raquette River Project be conditionally certified, with a certification term of five years.

A concern that I have with regard to LIHI recertification pertains to base flow and impoundment fluctuation deviations at Raymondville. A total of 34 deviations have occurred since issuance of the last LIHI certification. Of these, twelve were filed as CEII with causes unknown; seven due to clogged

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<sup>72</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13468931>

<sup>73</sup> <http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=10295185>

trashracks; seven related to equipment failure and/or controller problems; three due to storm related generator trips; two due to operator errors and one each due to a clogged filter, an ice problem and a planned lowering of the pond for equipment repairs.

From my perspective, only five of the 22 known causes for deviations are truly due to unusual circumstances beyond the control of EBH personnel; the storm related outages, the icing of the spillway crest and the planned equipment repair. The remaining 17 instances are primarily caused by inadequate trashrack monitoring/raking, poor preventative maintenance of equipment, deficient SCADA program logic and operator error. To certify the LRRP as "Low Impact", LIHI needs assurance that these operational deviations will be significantly reduced in the future.

Therefore, I am recommending that the following conditions be included in the next LIHI certification:

1. EBH needs to develop and submit a draft Deviation Reduction Plan (DRP) to LIHI no later than three months after LIHI certification of LRRP. The DRP will propose proactive approaches to implement as a means of reducing the likelihood of future operational deviations. The report will address the situations causing the majority of deviations; clogged trashracks, preventative maintenance, deficient SCADA logic and operator error<sup>74</sup>. LIHI and EBH may need to enter into discussions on the plan before LIHI can agreed to a final DRP and its implementation schedule going forward. The final DRP needs to be completed and agreed to by both EBH and LIHI no later the six months after LIHI certification.
2. EBH needs to provide annual reports to LIHI documenting operational deviations that occurred throughout the year of certification whether unintentional or planned due to construction or maintenance. The report will include all deviations that actually occurred, whether or not the deviations were eventually deemed as not violating the license by FERC. The report is due at the same time as the annual compliance statement and payment of the annual certification fee. Based on LIHI's review of this annual report, and at LIHI's sole discretion, certification may be modified or rescinded.

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<sup>74</sup> For example, deviations caused by clogged trashracks can be reduced by changing the trashrack blockage warning to a lower head differential trigger such that the traveling operating has more time to resolve the issue. Alternatively, installing a new trashrack racking system might work as good or better. Also, problems with discharge flow transition at Raymondville when lowering the turbine flow can be resolved by adding a low level outlet alternative versus trying to quickly pass the transitional flow over the spillway before the pond can totally adjust to changes in turbine flow.



**7. DETAILED CRITERIA EVALUATION**

**7.1 Flows**

<p><b>LIHI Goal:</b> The Flows Criterion ensures that healthy flows for fish, wildlife and water quality are provided downstream of the project and in all bypassed reaches, including, where appropriate, seasonal flow fluctuations characteristic of a natural system.</p>	
<p><b>A.1</b></p>	<p><i>Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations)</i></p>
	<p><b>Reviewer Analysis:</b> A multitude of impoundment fluctuation limit and base flow deviations have occurred at the Raymondville development since 2009. Two conditions have been recommended to allow for a conditional satisfaction of this criterion.</p> <p>EBH needs to develop and submit a draft Deviation Reduction Plan (DRP) and EBH needs to provide annual reports to LIHI documenting operational deviations that occurred throughout the year of certification.</p> <p><b>Conclusion:</b> Conditional Pass A.1; go to the Water Quality Criterion.</p>
<p><b>A.2</b></p>	<p><i>If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or "good" habitat flow standards calculated using the Montana-Tennant method?</i></p>
	<p><b>Reviewer Analysis and Conclusion:</b> N/A.</p>
<p><b>A.3</b></p>	<p><i>If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?</i></p>
	<p><b>Reviewer Analysis and Conclusion:</b> N/A.</p>



7.2 Water Quality

<b>LIHI Goal:</b> The Water Quality Criterion ensures that water quality in the river is protected.	
<b>B.1</b>	<p><i>Is the Facility either:</i></p> <p>a) <i>In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or</i></p> <p>b) <i>In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?</i></p>
	<p><b>Reviewer Analysis:</b> The WQC for the Project includes and incorporates the RRPSO and is conditioned on compliance with the terms of the RRPSO. The Project is in compliance with all conditions of the WQC issued to the Project after December 31, 1986.</p> <p><b>Conclusion:</b> YES, Pass B.1(a); Go to B.2</p>
<b>B.2</b>	<p><i>Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?</i></p>
	<p><b>Reviewer Analysis:</b> The NYSDEC identified several areas of the Raquette River and associated tributaries in their June 3, 2002 Section 303 (d) List. The NYSDEC Section 303(d) List indicates atmospheric deposition (acid rain) is common within the entire length of the Raquette River causing pH to be elevated in the Adirondacks and associated tributaries identified under Section 303 (d). The river's ecosystem is generally low in nutrients and fine sediments. The NYSDEC identified no area of the Lower Raquette River in their June 3, 2002 Section 303 (d) List.</p> <p><b>Conclusion:</b> No; Go to Fish Passage Criterion</p>
<b>B.3</b>	<p><i>If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?</i></p>
	<p><b>Reviewer Analysis:</b> N/A</p> <p><b>Conclusion:</b></p>

**7.3 Fish Passage and Protection**

<p><b>LIHI Goal:</b> The Fish Passage and Protection Criterion ensure that, where necessary, the Facility provides effective fish passage for Riverine, anadromous and catadromous fish, and protects fish from entrainment.</p>	
<p>C.1</p>	<p><i>Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?</i></p> <p><b>Reviewer Analysis:</b> The 1998 RRPSO and the 2002 FERC license contain requirements by Resource Agencies for downstream fish passage in the form of required downstream passage flows, modifications to the structures and streambed in order to make the flows fish-friendly, and scheduled installation of 1 inch clear spaced bar trashracks to prevent/reduce entrainment. The 2006 amended license accelerated the installation of one inch trashracks at the Norwood development to 2007, and required EBH to install upstream eel passage at each LRRP development.</p> <p>One inch clear spacing physical barriers were installed from 2002 through 2007, starting at the most downstream development and proceeding upstream. Installations of trashracks at Raymondville were completed in 2002, at Norfolk in 2004, at East Norfolk in 2006, and at Norwood in 2007.</p> <p>Upstream passage of American eel became a management goal during the 2006 license amendment proceedings for the LRRP. The FERC issued an Order Amending License and Accelerating Fish Protection and Downstream Passage Schedule on December 5, 2006 for the LRRP. In response, EBH filed a Final Eel Passage Plan (EPP) on December 14, 2007. On March 3, 2008, FERC approved the EPP.</p> <p>Conclusion: YES; go to C.2</p>
<p>C.2</p>	<p><i>Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish run is extinct)?</i></p> <p><b>Reviewer Analysis:</b> No historical records were found of migratory fish in the project vicinity prevented from passage due to downstream blockage of fish extinction.</p> <p><b>Finding:</b> NO; Go to C.3</p>

<p>C.3</p>	<p>If, since December 31, 1986:</p> <p>a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and</p> <p>b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,</p> <p>c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?</p>
	<p><b>Reviewer Analysis:</b> The agencies have issued a prescribe fish passage as discussed in C.1. None of the C.3.b or C.3.c factors apply to the LRRP.</p> <p><b>Conclusion:</b> N/A; Go to C.4</p>
<p>C.4</p>	<p>If C3 was not applicable:</p> <p>a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? OR</p> <p>b) If the Facility is unable to meet the fish passage standards in 4.a, has the Applicant either demonstrated, and obtained a letter from the U.S. Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource, or committed to the provision of fish passage measures in the future and obtained a letter from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service indicating that passage measures are not currently warranted?</p>
	<p><b>Reviewer Analysis:</b></p> <p><b>Finding:</b> N/A; Go to C.5</p>
<p>C.5</p>	<p>Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?</p> <p><b>Reviewer Analysis:</b> Covered in response to C.1. No compliance issues are documented.</p> <p><b>Finding:</b> N/A; Go to C.6</p>
<p>C.6</p>	<p>Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?</p> <p><b>Reviewer Analysis:</b> The USFWS has reserved their authority to set mandatory conditions for migratory fish entrainment protection measures under the license and WQC.</p> <p><b>Finding:</b> N/A; PASS and go to the Watershed Protection Criterion.</p>

7.4 Watershed Protection

<p><b>LIHI Goal:</b> The Watershed Protection criterion is designed to ensure that land resources are being protected within and around the facility boundary. The term of certification is extended from five to eight years for projects that have either a shoreline buffer zone or a watershed enhancement fund.</p>	
<p><b>D.1</b></p>	<p><i>Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline?</i></p> <p><b>Reviewer Analysis:</b> No licensee article designates a formal buffer zone around the project impoundments.</p> <p>In 1996, NMPC developed a plan for divestiture of over 12,000 acres of land within the Raquette River watershed. None of these lands were within the FERC project boundaries associated with the Carry Falls, Upper Raquette River, Middle Raquette River, or Lower Raquette River Hydroelectric Projects.</p> <p>This land conveyance process between NMPC and the State pertained to lands outside of the FERC boundaries associated with the projects of RRPSO, and therefore was outside the jurisdiction of the FERC relicensing process. However, this land conveyance process was included as part of the RRPSO because certain aspects of the land transfer affected the outcome of certain aspects of the RRPSO.</p> <p>The vast majority of this land transfer to the State pertained to property associated with the URRP.</p> <p><b>Conclusion:</b> No, Go to D.2</p>
<p><b>D.2</b></p>	<p><i>Has the facility owner/operator established an approved watershed enhancement fund that:</i>  <i>a) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1.,and</i>  <i>b) has the agreement of appropriate stakeholders and state and federal resource agencies?</i></p> <p><b>Reviewer Analysis/Conclusions:</b> N/A.</p> <p><b>Conclusion:</b> No Go to D.3</p>
<p><b>D.3</b></p>	<p><i>Has the facility owner/operator established through a settlement agreement with appropriate stakeholders and that has state and federal resource agencies agreement an appropriate shoreline buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation).</i></p> <p><b>Reviewer Analysis:</b> N/A</p> <p><b>Conclusion:</b> YES, Go to D.4</p>
<p><b>D.4</b></p>	<p><i>Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreline management plan regarding protection, mitigation or enhancement of shoreline surrounding the project?</i></p>

	<p><b>Reviewer Analysis:</b> See response to D.1. No agency concerns have surfaced.</p> <p><b>Conclusion:</b> Yes; pass and Go to Threatened/Endangered Species Criterion.</p>
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**7.5 Threatened and Endangered Species Protection**

<p><b>LIHI Goal:</b> The Threatened and Endangered Species Protection Criterion is designed to ensure that the Facility does not negatively impact state or federal threatened or endangered species.</p>	
<b>E.1</b>	<p><i>Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?</i></p> <p><b>Reviewer Analysis:</b> The threatened bald eagle is known to pass within the boundaries of the LRRP only as a transient species. The NYSDEC has determined that the bald eagle will not be affected by operations of the LRRP.</p> <p><b>Conclusion:</b> YES; Go to E2.</p>
<b>E.2</b>	<p><i>If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?</i></p> <p><b>Reviewer Analysis:</b> There are no formal recovery plans for the threatened and endangered species at the Project.</p> <p><b>Conclusion:</b> N/A; Go to E3.</p>
<b>E.3</b>	<p><i>If the Facility has received authorization to incidentally Take a listed species through: (I) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?</i></p> <p><b>Reviewer Analysis:</b> There are no formal incidental take permits for the threatened and endangered species at the Project.</p> <p><b>Conclusion:</b> N/A; Go to E4.</p>
<b>E.4</b>	<p><i>If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that: a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or d) The recovery plan under active development will have no material effect on the Facility's operations?</i></p> <p><b>Reviewer Analysis:</b> There are no formal incidental take permits for the threatened and endangered species at the Project.</p> <p><b>Conclusion:</b> N/A; Go to E5 do not apply.</p>

<b>E.5</b>	<i>If E.2 and E.3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?</i>
	<b>Reviewer Analysis:</b> The RRPSO declared that project facilities and operations consistent with the agreement will have no adverse effect on federal or state listed threatened or endangered species.
	<b>Conclusion:</b> Yes; Pass - Go to Cultural Resource Protection Criterion.

**7.6 Cultural Resources**

<b>LIHI Goal:</b> The Cultural Resource Protection Criterion is designed to ensure that the Facility does not inappropriately impact Cultural Resources.	
<b>F.1</b>	<p><i>If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?</i></p> <p><b>Reviewer Analysis:</b> On February 6, 2002, EBH signed a fully revised Programmatic Agreement (PA) with FERC, the Advisory Council on Historic Preservation (ACHP), and the New York State Historic Preservation Officer (SHPO) for the four of its FERC licenses on the Raquette River, with the St. Regis Tribe and the USDOJ as concurring parties. By letter dated February 11, 2002, the ACHP filed with FERC the executed agreement that amended the previous 1996 PA.</p> <p>On April 14, 2003, Erie submitted its required Historic Property Management Plan (HPMP) to FERC. On September 28, 2004, FERC issued an order approving the HPMP. As part of the HPMP, EBH is required to file an annual report. EBH has successfully complied with this requirement. The latest filing occurred on February 12, 2014.</p> <p><b>Finding:</b> PASS and go to Recreation Criterion.</p>

**7.7 Recreation**

<b>LIHI Goal:</b> The Recreation Criterion is designed to ensure that the Facility provides access to the waters and accommodates recreational activities.	
<b>G.1</b>	<p><i>If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?</i></p> <p><b>Reviewer Analysis:</b> Erie filed a recreation plan in accordance with the 2002 License and RRPSO. A Raquette River Advisory Council advises EBH on issues related to recreation, and other resource enhancements.</p> <p>Land &amp; Water Associates, the prior LIHI reviewer, confirmed that the recreation facility improvements required in the FERC license were completed according to schedule in a timely manner, in consultation with parties to the RRPSO.</p> <p><b>Finding:</b> YES; Go to G.3</p>
<b>G.3</b>	<p><i>Does the Facility allow access to the reservoir and downstream reaches without fees or charges?</i></p> <p><b>Reviewer Analysis:</b> Access is provided without charge within the limited Project boundaries.</p> <p><b>Finding:</b> YES; PASS and go to Dam Removal Criterion.</p>

**7.8 Dam Removal**

<b>LIHI Goal:</b> The Dam Removal Criterion is designed to ensure that the Facility is not certified if a Resource Agency has recommended that a dam associated with the Facility should be removed.	
<b>H.1</b>	<p><i>Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?</i></p> <p><b>Reviewer Analysis:</b> There is no evidence that any agencies have requested that the Project dam be removed.</p> <p><b>Conclusion:</b> NO, pass H.1 and pass on all LIHI criteria.</p>

## APPENDIX A

### ***FERC CORRESPONDENCE***

FERC documents listed in reverse chronological order. Click on the hyperlink in the table to view the referenced FERC documents in FERC's library. You need to be connected to the web. The initial click will return the file's properties (author, recipient, etc.). Clicking on the [File List] tab will return a document list. Clicking on a document name will open the document for viewing.