

Northbrook Lyons Falls, LLC

June 20th, 2016

Ms. Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**SUBJECT: Northbrook Lyons Falls, LLC's Application for
Eligibility of Lyons Falls Project as a New Renewable Energy
Resource**

Dear Ms. Massaro,

Northbrook Lyons Falls, LLC ("Northbrook") hereby respectfully requests that the State of Rhode Island Public Utilities Commission issue a declaratory judgment on the eligibility of Northbrook's Lyons Falls Mill Facility ("LFMF") as a New Renewable Energy Resource pursuant to the Renewable Energy Act §39-26-1 *et. seq.* of the General Laws of Rhode Island.

The Project is a Run-of-River facility that has a nameplate capacity of 5.5 MW and that does not cause any appreciable change in the river flow. Since 1998, major investments have been made to the facility and in the coming year, additional investments are planned that will significantly increase the efficiency of the LFMF. Please find attached Northbrook's application seeking a declaratory judgment for eligibility as a "repowered" renewable energy resource in the State of Rhode Island.

The Project is located in the New York control area, adjacent to NEPOOL. It has been certified as a Tier 1 energy source in the state of Maryland. Power produced will be sold to market participants in NEPOOL, through bilateral contracts.

As a supplement to Northbrook's application we are attaching, for public record, a redacted version of the Project's expected capital investments and book value. Northbrook has submitted a Motion for Protective Treatment under separate cover along with a copy of the confidential attachment to the Commission pending a determination on the Northbrook's Motion.

Northbrook would like to make clear that Mr. Stephane Cohen and Mr. Lewis C. Loon are authorized to answer requests for information on behalf of Northbrook and that they have accurate knowledge in regards to the above mentioned project.

Additional confidential material to be provided is subject to protective treatment.

Thank you for your consideration of Northbrook's request. If you have any questions or need additional information, please contact:

Stephane Cohen
c/o Kruger Energy Inc.
3285 Bedford road
Montreal, Quebec H3S 1G5
E-mail: stephane.cohen@kruger.com
Tel: (514) 343-3100 x12109



Pierre Janelle
Vice President, Operations

RIPUC Use Only

Date Application Received: ____/____/____
Date Review Completed: ____/____/____
Date Commission Action: ____/____/____
Date Commission Approved: ____/____/____

GIS Certification #:

37936

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM**The Standard Application Form**

**Required of all Applicants for Certification of Eligibility of Renewable Energy Resource
(Version 8 – December 5, 2012)**

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION**Pursuant to the Renewable Energy Act****Section 39-26-1 et. seq. of the General Laws of Rhode Island****NOTICE:**

When completing this Renewable Energy Resources Eligibility Form and any applicable Appendices, please refer to the State of Rhode Island and Providence Plantations Public Utilities Commission Rules and Regulations Governing the Implementation of a Renewable Energy Standard (RES Regulations, Effective Date: January 1, 2006), and the associated RES Certification Filing Methodology Guide. All applicable regulations, procedures and guidelines are available on the Commission's web site: www.ripuc.org/utilityinfo/res.html. Also, all filings must be in conformance with the Commission's Rules of Practice and Procedure, in particular, Rule 1.5, or its successor regulation, entitled "Formal Requirements as to Filings."

- Please complete the Renewable Energy Resources Eligibility Form and Appendices using a typewriter or black ink.

- Please submit one original and three copies of the completed Application Form, applicable Appendices and all supporting documentation to the Commission at the following address:

Rhode Island Public Utilities Commission
Attn: Luly E. Massaro, Commission Clerk
89 Jefferson Blvd
Warwick, RI 02888

In addition to the paper copies, electronic/email submittals are required under Commission regulations. Such electronic submittals should be sent to res@puc.state.ri.us.

- In addition to filing with the Commission, Applicants are required to send, electronically or electronically and in paper format, a copy of the completed Application including all attachments and supporting documentation, to the Division of Public Utilities and Carriers and to all interested parties. A list of interested parties can be obtained from the Commission's website at www.ripuc.org/utilityinfo/res.html.

- Keep a copy of the completed Application for your records.

- The Commission will notify the Authorized Representative if the Application is incomplete.

- Pursuant to Section 6.0 of the RES Regulations, the Commission shall provide a thirty (30) day period for public comment following posting of any administratively complete Application.

- Please note that all information submitted on or attached to the Application is considered to be a public record unless the Commission agrees to deem some portion of the application confidential after consideration under section 1.2(g) of the Commission's Rules of Practice and Procedure.

- In accordance with Section 6.2 of the RES Regulations, the Commission will provide prospective reviews for Applicants seeking a preliminary determination as to whether a facility would be eligible prior to the formal certification process described in Section 6.1 of the RES Regulations. Please note that space is provided on the Form for applicant to designate the type of review being requested.

- Questions related to this Renewable Energy Resources Eligibility Form should be submitted in writing, preferably via email and directed to: Luly E. Massaro, Commission Clerk at res@puc.state.ri.us.

SECTION I: Identification Information

- 1.1 Name of Generation Unit (sufficient for full and unique identification): **Lyons Falls Mill Facility**
- 1.2 Type of Certification being requested (check one):
☐ Standard Certification ☒ Prospective Certification (Declaratory Judgment)
- 1.3 This Application includes: (Check all that apply)¹
- ☐ APPENDIX A: Authorized Representative Certification for Individual Owner or Operator
- ☒ APPENDIX B: Authorized Representative Certification for Non-Corporate Entities Other Than Individuals
- ☒ APPENDIX C: Existing Renewable Energy Resources
- ☐ APPENDIX D: Special Provisions for Aggregators of Customer-sited or Off-grid Generation Facilities
- ☒ APPENDIX E: Special Provisions for a Generation Unit Located in a Control Area Adjacent to NEPOOL
- ☐ APPENDIX F: Fuel Source Plan for Eligible Biomass Fuels
- 1.4 Primary Contact Person name and title: **Stephane Cohen, Project Engineer**
- 1.5 Primary Contact Person address and contact information:
Address: **3285 Chemin Bedford, Montreal, Quebec, H3S 1G5**
Phone: **(514) 343-3100 x12109** Fax: **(514) 343-3124**
Email: **Stephane.Cohen@kruger.com**
- 1.6 Backup Contact Person name and title: **Lewis C. Loon, Manager, Operations and Maintenance - USA**
- 1.7 Backup Contact Person address and contact information:
Address: **37 Alfred A. Plourde Parkway, Suite 2, Lewiston, ME 04240**
Phone: **(207) 786-8834** Fax: **(207) 786-8812**
Email: **Lewis.Loon@kruger.com**
- 1.8 Name and Title of Authorized Representative (*i.e.*, the individual responsible for certifying the accuracy of all information contained in this form and associated appendices, and whose signature will appear on the application): **Pierre Janelle - Vice President, Operations.**
- Appendix A or B (as appropriate) completed and attached? ☒ Yes ☐ No ☐ N/A

¹ Please note that all Applicants are required to complete the Renewable Energy Resources Eligibility Standard Application Form and all of the Appendices that apply to the Generation Unit or Owner or Operator that is the subject of this Form. Please omit Appendices that do not apply.

- 1.9 Authorized Representative address and contact information:
Address: 3285 chemin Bedford, Montréal, Québec, H3S 1G5
Phone: 514-343-3100 x12042 Fax: 514-343-3124
Email: Pierre.Janelle@kruger.com
- 1.10 Owner name and title: Northbrook Lyons Falls, LLC
- 1.11 Owner address and contact information:
Address: 37 Alfred A. Plourde Parkway, Suite 2, Lewiston, ME 04240
Phone: (207) 786-8834 Fax: (207) 786-8812
Email: Lewis.Loan@kruger.com
- 1.12 Owner business organization type (check one):
☐ Individual
☐ Partnership
☐ Corporation
☒ Other: Limited Liability Company
- 1.13 Operator name and title: Northbrook Lyons Falls, LLC
- 1.14 Operator address and contact information:
Address: 37 Alfred A. Plourde Parkway, Suite 2, Lewiston, ME 04240
Phone: (207) 786-8834 Fax: (207) 786-8812
Email: Lewis.Loan@kruger.com
- 1.15 Operator business organization type (check one):
☐ Individual
☐ Partnership
☐ Corporation
☒ Other: Limited Liability Company

SECTION II: Generation Unit Information, Fuels, Energy Resources and Technologies

- 2.1 ISO-NE Generation Unit Asset Identification Number or NEPOOL GIS Identification Number (either or both as applicable): **The energy produced by the Lyons Falls Development will be sold to a market participant in NEPOOL. The Lyons Falls Development asset identification number is NY23570 and the GIS identification number is 37936.**
- 2.2 Generation Unit Nameplate Capacity: **5.5** MW
- 2.3 Maximum Demonstrated Capacity: **5.5** MW
- 2.4 Please indicate which of the following Eligible Renewable Energy Resources are used by the Generation Unit: (Check ALL that apply) – *per RES Regulations Section 5.0*
- ☐ Direct solar radiation
 - ☐ The wind
 - ☐ Movement of or the latent heat of the ocean
 - ☐ The heat of the earth
 - ☒ Small hydro facilities
 - ☐ Biomass facilities using Eligible Biomass Fuels and maintaining compliance with all aspects of current air permits; Eligible Biomass Fuels may be co-fired with fossil fuels, provided that only the renewable energy fraction of production from multi-fuel facilities shall be considered eligible.
 - ☐ Biomass facilities using unlisted biomass fuel
 - ☐ Biomass facilities, multi-fueled or using fossil fuel co-firing
 - ☐ Fuel cells using a renewable resource referenced in this section
- 2.5 If the box checked in Section 2.4 above is “Small hydro facilities”, please certify that the facility’s aggregate capacity does not exceed 30 MW. – *per RES Regulations Section 3.32*
- ☒ ← check this box to certify that the above statement is true
- ☐ N/A or other (please explain) _____
- 2.6 If the box checked in Section 2.4 above is “Small hydro facilities”, please certify that the facility does not involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less. – *per RES Regulations Section 3.32*
- ☒ ← check this box to certify that the above statement is true
- ☐ N/A or other (please explain) _____
- 2.7 If you checked one of the Biomass facilities boxes in Section 2.4 above, please respond to the following:
- A. Please specify the fuel or fuels used or to be used in the Unit: _____

B. Please complete and attach Appendix F, Eligible Biomass Fuel Source Plan.
Appendix F completed and attached? ☐ Yes ☐ No ☐ N/A

2.8 Has the Generation Unit been certified as a Renewable Energy Resource for eligibility in another state's renewable portfolio standard?

☒ Yes ☐ No If yes, please attach a copy of that state's certifying order.

Copy of State's certifying order attached? See attachment 1 ☒ Yes ☐ No ☐ N/A

SECTION III: Commercial Operation Date

Please provide documentation to support all claims and responses to the following questions:

3.1 Date Generation Unit first entered Commercial Operation: **Unit #1 12/1923; Unit #6 4/1963; Unit #7 5/1966; Unit #8 3/1974 and Unit #9 4/1971** at the site.

If the commercial operation date is after December 31, 1997, please provide independent verification, such as the utility log or metering data, showing that the meter first spun after December 31, 1997. This is needed in order to verify that the facility qualifies as a New Renewable Energy Resource.

Documentation attached? ☐ Yes ☐ No ☒ N/A

3.2 Is there an Existing Renewable Energy Resource located at the site of Generation Unit?

☒ Yes
☐ No

3.3 If the date entered in response to question 3.1 is earlier than December 31, 1997 or if you checked "Yes" in response to question 3.2 above, please complete Appendix C.

Appendix C completed and attached? ☒ Yes ☐ No ☐ N/A

3.4 Was all or any part of the Generation Unit used on or before December 31, 1997 to generate electricity at any other site?

☐ Yes
☒ No

3.5 If you checked "Yes" to question 3.4 above, please specify the power production equipment used and the address where such power production equipment produced electricity (attach more detail if the space provided is not sufficient):

SECTION IV: Metering

- 4.1 Please indicate how the Generation Unit's electrical energy output is verified (check all that apply):

☒ ISO-NE Market Settlement System

Self-reported to the NEPOOL GIS Administrator

☐ Other (please specify below and see Appendix D: Eligibility for Aggregations):

Appendix D completed and attached?

☐ Yes ☐ No ☒ N/A

SECTION V: Location

- 5.1 Please check one of the following that apply to the Generation Unit:

☒ Grid Connected Generation

☐ Off-Grid Generation (not connected to a utility transmission or distribution system)

☐ Customer Sited Generation (interconnected on the end-use customer side of the retail electricity meter in such a manner that it displaces all or part of the metered consumption of the end-use customer)

- 5.2 Generation Unit address: 410 Center Street, Lyons Falls, NY 13368

- 5.3 Please provide the Generation Unit's geographic location information:

A. Universal Transverse Mercator Coordinates: _____

B. Longitude/Latitude: 43° 37' 4/75° 21' 26

- 5.4 The Generation Unit located: (please check the appropriate box)

☐ In the NEPOOL control area

☒ In a control area adjacent to the NEPOOL control area

☐ In a control area other than NEPOOL which is not adjacent to the NEPOOL control area ← *If you checked this box, then the generator does not qualify for the RI RES – therefore, please do not complete/submit this form.*

- 5.5 If you checked "In a control area adjacent to the NEPOOL control area" in Section 5.4 above, please complete Appendix E.

Appendix E completed and attached?

☒ Yes ☐ No ☐ N/A

SECTION VI: Certification

- 6.1 Please attach documentation, using one of the applicable forms below, demonstrating the authority of the Authorized Representative indicated in Section 1.8 to certify and submit this Application.

Corporations

If the Owner or Operator is a corporation, the Authorized Representative shall provide **either**:

- (a) Evidence of a board of directors vote granting authority to the Authorized Representative to execute the Renewable Energy Resources Eligibility Form, **or**
- (b) A certification from the Corporate Clerk or Secretary of the Corporation that the Authorized Representative is authorized to execute the Renewable Energy Resources Eligibility Form or is otherwise authorized to legally bind the corporation in like matters.

Evidence of Board Vote provided? ☐ Yes ☐ No ☒ N/A

Corporate Certification provided? ☐ Yes ☐ No ☐ N/A

Individuals

If the Owner or Operator is an individual, that individual shall complete and attach APPENDIX A, or a similar form of certification from the Owner or Operator, duly notarized, that certifies that the Authorized Representative has authority to execute the Renewable Energy Resources Eligibility Form.

Appendix A completed and attached? ☐ Yes ☐ No ☒ N/A

Non-Corporate Entities

(Proprietorships, Partnerships, Cooperatives, etc.) If the Owner or Operator is not an individual or a corporation, it shall complete and attach APPENDIX B or execute a resolution indicating that the Authorized Representative named in Section 1.8 has authority to execute the Renewable Energy Resources Eligibility Form or to otherwise legally bind the non-corporate entity in like matters.

Appendix B completed and attached? ☒ Yes ☐ No ☐ N/A

6.2 Authorized Representative Certification and Signature:

I hereby certify, under pains and penalties of perjury, that I have personally examined and am familiar with the information submitted herein and based upon my inquiry of those individuals immediately responsible for obtaining the information; I believe that the information is true, accurate and complete. I am aware that there are significant penalties, both civil and criminal, for submitting false information, including possible fines and punishment. My signature below certifies all information submitted on this Renewable Energy Resources Eligibility Form. The Renewable Energy Resources Eligibility Form includes the Standard Application Form and all required Appendices and attachments. I acknowledge that the Generation Unit is obligated to and will notify the Commission promptly in the event of a change in a generator's eligibility status (including, without limitation, the status of the air permits) and that when and if, in the Commission's opinion, after due consideration, there is a material change in the characteristics of a Generation Unit or its fuel stream that could alter its eligibility, such Generation Unit must be re-certified in accordance with Section 9.0 of the RES Regulations. I further acknowledge that the Generation Unit is obligated to and will file such quarterly or other reports as required by the Regulations and the Commission in its certification order. I understand that the Generation Unit will be immediately de-certified if it fails to file such reports.

Signature of Authorized Representative:

SIGNATURE:



Pierre Janelle, Vice President, Operations

DATE

06-20-2016

APPENDIX B
(Required When Owner or Operator is a Non-Corporate Entity
Other Than An Individual)

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

Pursuant to the Renewable Energy Act
Section 39-26-1 et. seq. of the General Laws of Rhode Island

RESOLUTION OF AUTHORIZATION

Resolved: that Pierre Janelle, named in Section 1.8 of the Renewable Energy Resources Eligibility Form as Authorized Representative, is authorized to execute the Application on the behalf of Northbrook Lyons Falls, LLC, the Owner or Operator of the Generation Unit named in section 1.1 of the Application.

SIGNATURE:

Janet Shulist
Janet Shulist
Secretary

DATE:

06-20-2016

State: _____

County: _____

(TO BE COMPLETED BY NOTARY) I, Marie-Josée Richard as a notary public, certify that I witnessed the signature of the above named Janet Shulist, and that said person stated that he/she is authorized to execute this resolution, and the individual verified his/her identity to me, on this date: 06-20-2016.

SIGNATURE:

Marie-Josée Richard #162121

DATE:

06-20-2016

My commission expires on: 11/26/2018

NOTARY SEAL:



APPENDIX C
(Revised 6/11/10)
(Required of all Applicants with Generation Units at the Site of Existing
Renewable Energy Resources)

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

Pursuant to the Renewable Energy Act
Section 39-26-1 et. seq. of the General Laws of Rhode Island

If the Generation Unit: (1) first entered into commercial operation before December 31, 1997; or (2) is located at the exact site of an Existing Renewable Energy Resource, please complete the following and attach documentation, as necessary to support all responses:

C.1 Is the Generating Unit seeking certification, either in whole or in part, as a New Renewable Energy Resource? ☒ Yes ☐ No

C.2 If you answered "Yes" to question C.1, please complete the remainder of Appendix C. If you answered "No" and are seeking certification entirely as an Existing Renewable Energy Resource, you do NOT need to complete the remainder of Appendix C.

C.3 If an Existing Renewable Energy Resource is/was located at the site, has such Existing Renewable Energy Resource been retired and replaced with the new Generation Unit at the same site? ☐ Yes ☒ No

The existing units will be retired and replaced in 2017

C.4 Is the Generation Unit a Repowered Generation Unit (as defined in Section 3.29 of the RES Regulations) which uses Eligible Renewable Energy Resources and which first entered commercial operation after December 31, 1997 at the site of an existing Generation Unit? ☒ Yes ☐ No

C.5 If you checked "Yes" to question C.4 above, please provide documentation to support that the entire output of the Repowered Generation Unit first entered commercial operation after December 31, 1997. **See Attachment 3**

C.6 Is the Generation Unit a multi-fuel facility in which an Eligible Biomass Fuel is first co-fired with fossil fuels after December 31, 1997? ☐ Yes ☒ No

- C.7 If you checked “Yes” to question C.6 above, please provide documentation to support that the renewable energy fraction of the energy output first occurred after December 31, 1997.
- C.8 Is the Generation Unit an Existing Renewable Energy Resource other than an Intermittent Resource (as defined in Sections 3.10 and 3.15 of the RES Regulations)? ☐ Yes ☒ No
- C.9 If you checked “Yes” to question C.8 above, please attach evidence of completed capital investments after December 31, 1997 attributable to efficiency improvements or additions of capacity that are sufficient to, were intended to, and can be demonstrated to increase annual electricity output in excess of ten percent (10%). As specified in Section 3.23.v of the RES Regulations, the determination of incremental production shall not be based on any operational changes at such facility **not directly** associated with the efficiency improvements or additions of capacity.

Please provide the single proposed percentage of production to be deemed incremental, attributable to the efficiency improvements or additions of capacity placed in service after December 31, 1997. Please make this calculation by comparing actual electrical output over the three calendar years 1995-1997 (the “Historical Generation Baseline”) with the actual output following the improvements. The incremental production above the Historical Generation Baseline will be considered “New” generation for the purposes of RES. Please give the percentage of the facility’s total output that qualifies as such to be considered “New” generation.

- C.10 Is the Generating Unit an Existing Renewable Energy Resource that is an Intermittent Resource? ☒ Yes ☐ No
- C.11 If you checked “Yes” to question C.10 above, please attach evidence of completed capital investments after December 31, 1997 attributable to efficiency improvements or additions of capacity that are sufficient to, were intended to, and have demonstrated on a normalized basis to increase annual electricity output in excess of ten percent (10%). The determination of incremental production shall not be based on any operational changes at such facility **not directly** associated with the efficiency improvements or additions of capacity. In no event shall any production that would have existed during the Historical Generation Baseline period in the absence of the efficiency improvements or additions to capacity be considered incremental production. Please refer to Section 3.23.vi of the RES Regulations for further guidance. **See Attachment 3 for Capital Investments and Attachment 4 for Incremental Production**
- C.12 If you checked “Yes” to C.10, provide the single proposed percentage of production to be deemed incremental, attributable to the efficiency improvements or additions of capacity placed in service after December 31, 1997. The incremental production above the Historical Generation Baseline will be considered “New” generation for the purposes of RES. Please make this calculation by comparing actual monthly electrical output over the three calendar years 1995-1997 (the “Historical Generation Baseline”) with the actual output following the improvements on a normalized basis. Please provide back-up

information sufficient for the Commission to make a determination of this incremental production percentage.

For example, for small hydro facilities, please use historical river flow data to create a monthly normalized comparison (e.g. average MWh produced per cubic foot/second of river flow for each month) between actual output values post-improvements with the Historical Generation Baseline. For solar and wind facilities, please use historical solar irradiation, wind flow, or other applicable data to normalize the facility's current production against the Historical Generation Baseline. **See Attachment 4**

C.13 If you checked "no" to both C.3 and C.4 above, please complete the following:

- a. Was the Existing Renewable Energy Resource located at the exact site at any time during calendar years 1995 through 1997? ☐ Yes ☐ No
- b. If you checked "yes" in Subsection (a) above, please provide the Generation Unit Asset Identification Number and the average annual electrical production (MWhs) for the three calendar years 1995 through 1997 or for the first 36 months after the Commercial Operation Date if that date is after December 31, 1994, for each such Generation Unit.
- c. Please attach a copy of the derivation of the average provided in (b) above, along with documentation support (such as ISO reports) for the information provided in Subsection (b) above. Data must be consistent with quantities used for ISO Market Settlement System.

APPENDIX E
(Revised 6/11/10)

(Required of all Applicants Located in a Control Area Adjacent to NEPOOL)

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

Pursuant to the Renewable Energy Act
Section 39-26-1 et. seq. of the General Laws of Rhode Island

Please complete the following and attach documentation, as necessary to support all responses:

E.1 Please indicate in which Control Area adjacent to NEPOOL the Generation Unit is located:

- ☒ New York
☐ Hydro Quebec
☐ Maritimes (including Northern Maine Independent System Administrator)

E.2 Applicant must provide to the Commission by July 1st of each year assurances that the Generation Unit's New Renewable Energy Resources used for compliance with the Rhode Island's Renewable Energy Act during the previous Compliance Year have not otherwise been, nor will be, sold, retired, claimed or represented as part of electrical energy output or sales, or used to satisfy obligations in jurisdictions other than Rhode Island. Such assurances may consist of a report from a neighboring Generation Attribute accounting system or an affidavit from the Generation Unit.

- ☒ ← please check this box to acknowledge this requirement
☐ N/A or other (please explain) _____

E.3 Applicant must acknowledge and provide evidence to support that, in accordance with Section 5.1.(ii) of the RES Regulations, the Generation Attributes associated with the Generation Unit shall be applied to the Rhode Island Renewable Energy Standard only to the extent of the energy produced by the Generation Unit that is or will be actually delivered into NEPOOL for consumption by New England customers. Verification of the delivery of such energy from the Generation Unit into NEPOOL will be performed in accordance with subparagraphs (a), (b) and (c) of RES Regulations Section 5.1.(ii)

☒ ← please check this box to acknowledge this requirement.

- (a) Under subparagraph 5.1.(ii)(a), Applicant must verify that the energy produced by the Generation Unit is actually delivered into NEPOOL via "a unit-specific bilateral contract for the sale and delivery of such energy into NEPOOL".

X ← please check this box to acknowledge the requirement for Applicant to provide ongoing evidence of one or more unit-specific bilateral contract(s) for all energy delivery into NEPOOL for which Applicant seeks RI RES certification, prior to creation of certificates in each quarter, and:

- i. Please describe the type of evidence to be provided to the GIS Administrator to demonstrate the existence of such unit-specific bilateral contract(s) for the sale and delivery of such energy into NEPOOL, including duration, quantity and counter-party in NEPOOL: **KEI (USA) Power Management Inc., on behalf of Northbrook Lyons Falls, LLC will send to the GIS administrator, every quarter, a report specifying:**
- **The quantity of energy sold and delivered in NEPOOL from the Lyons Falls Development for that quarter**
 - **The counter-party in NEPOOL**
 - **And a confirmation that this energy was delivered under a unit-specific bilateral contract**

☐ N/A or other (please explain): _____

Northbrook Lyons Falls, LLC

ATTACHMENT 1

State of Maryland Decision on Qualification of Lyons Falls as a Tier 1 Energy Source

COMMISSIONERS

W. KEVIN HUGHES
CHAIRMAN

HAROLD D. WILLIAMS
LAWRENCE BRENNER
KELLY SPEAKES-BACKMAN
ANNE E. HOSKINS

STATE OF MARYLAND



PUBLIC SERVICE COMMISSION

#3, 6/11/14 AM; ML# 152724, IR-3280

June 11, 2014

Guy J. Paquette
Vice President, Corporate and Legal Affairs
Northbrook Lyons Falls, LLC
37 Alfred A. Plourde Parkway, Suite 2
Lewiston, ME 04240

Dear Mr. Paquette:

The Commission has reviewed the Application for Certification as a Tier 1 Renewable Energy Facility for the Maryland Renewable Energy Portfolio Standard Program for the Lyons Falls Hydroelectric, Gouldtown and Kosterville Project Facilities filed on February 18, 2014 by Northbrook Lyons Falls, LLC.

After considering this matter at the June 11, 2014 Administrative Meeting, the Commission granted the application and issued renewable energy facility Certification Number MD-90222-WAT-01 for the Lyons Falls Hydroelectric, Gouldtown and Kosterville Project facilities. The Company must establish a REC Account with PJM GATS within 30 days of certification.

Additionally, the Company is reminded that under COMAR 20.61.02.03C, it is obligated to notify the Commission within 30 days of any change to the information contained in its application.

By Direction of the Commission,

A handwritten signature in blue ink, appearing to read "David J. Collins".

David J. Collins
Executive Secretary

DJC/st

c: GATS Administrator, PJM Environmental Information Service, Inc.
Brent Bolea, Esquire, Maryland Energy Administration
Karen Irons, Maryland Department of the Environment
Morris Schreim, Chief Engineer

WILLIAM DONALD SCHAEFER TOWER • 6 ST. PAUL STREET • BALTIMORE, MARYLAND 21202-6806

410-767-8000

Toll Free: 1-800-492-0474

FAX: 410-333-6495

MDRS: 1-800-735-2258 (TTY/Voice)

Website: www.psc.state.md.us/psc/

ATTACHMENT 2

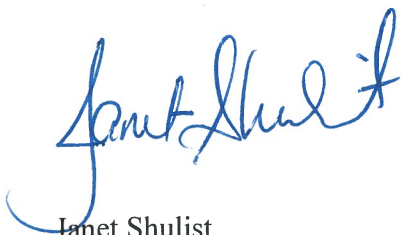
Certification of Authority to Sign the Renewable Eligibility Form

SECRETARY'S CERTIFICATE

I, the undersigned, Janet Shulist, hereby certify that:

1. I am the Secretary of Northbrook Lyons Falls, LLC (the "Company"), a limited liability company formed under the laws of Delaware and I have personal knowledge of the facts certified under my signature and I am duly authorized to certify same.
2. The Company is authorized to file a Renewable Energy Resources Eligibility Form with the State of Rhode Island Public Utilities Commission.
3. Pierre Janelle is in his capacity as an authorized representative of the Company authorized to execute and deliver for and on its behalf the Renewable Energy Resources Eligibility Form and is authorized to legally bind the company in like matters.

IN WITNESS WHEREOF, I have hereunto signed the present certificate this 20th day of June, 2016.



Janet Shulist
Secretary

ATTACHMENT 3

Project Description and Capital Investments as Required by C.5 and C.11

PROJECT DESCRIPTION

The Lyons Falls Mill Facility (LFMF) has been in operation since the early 1900s and has undergone several changes throughout its long history. The current facility has a nameplate capacity of 5.5 MW. The plant is composed of five generating units which are comprised of one (1) vertical Francis turbine-generator unit and four (4) horizontal Francis turbine-generator units.

Over the past several years, substantial investments have been made at the facility in order to sustain operations and continue to operate the LFMF in a safe and secure manner. These investments were comprised of, but not limited to, replacing a draft tube on unit no. 7, replacing all three headgates at the facility, replacing the intake trash racks, and replacing the thrust bearing on unit no. 6.

Additionally, Northbrook Lyons Falls LLC (NBLF) has invested a considerable amount of money in rehabilitating the site where the facility is located. An abandoned paper mill located near the LFMF has caused structural and safety issues surrounding the LFMF while limiting access to the facility. NBLF has teamed with the local development corporation to rehabilitate the area where the generating facility and an old paper mill are located.

In 2017, a turbine upgrade project is planned to further increase the performance of the LFMF. The project will consist of replacing all 5 turbine runners with brand new runners. All support/guide bearings and thrust bearings (except for unit no. 6 which was replaced in 2013) will also be replaced along with the turbine shafts.

The list below summarizes the major work that will be done in the next year to replace the facilities prime movers.

Turbine Unit No. 1

The following equipment will be removed and replaced:

- New Francis style turbine runner
- New turbine shaft
- New turbine guide bearing
- An intermediate thrust bearing will be added to eliminate the excessive displacement of the shaft close to the lower guide bearing.
- Penstock repairs

Turbine-generator unit no. 1 is composed of a James Leffel vertical Francis turbine. The figure below illustrates the equipment that will be replaced on unit no. 1. The portions of the turbine highlighted in yellow depict the portions of the unit that will be completely replaced. The section highlighted in blue depicts the area that will receive a newly designed thrust bearing that will

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remediate the issue of the shaft having an excessive amount of displacement and correct the guide bearing life that is currently well below industry standards.

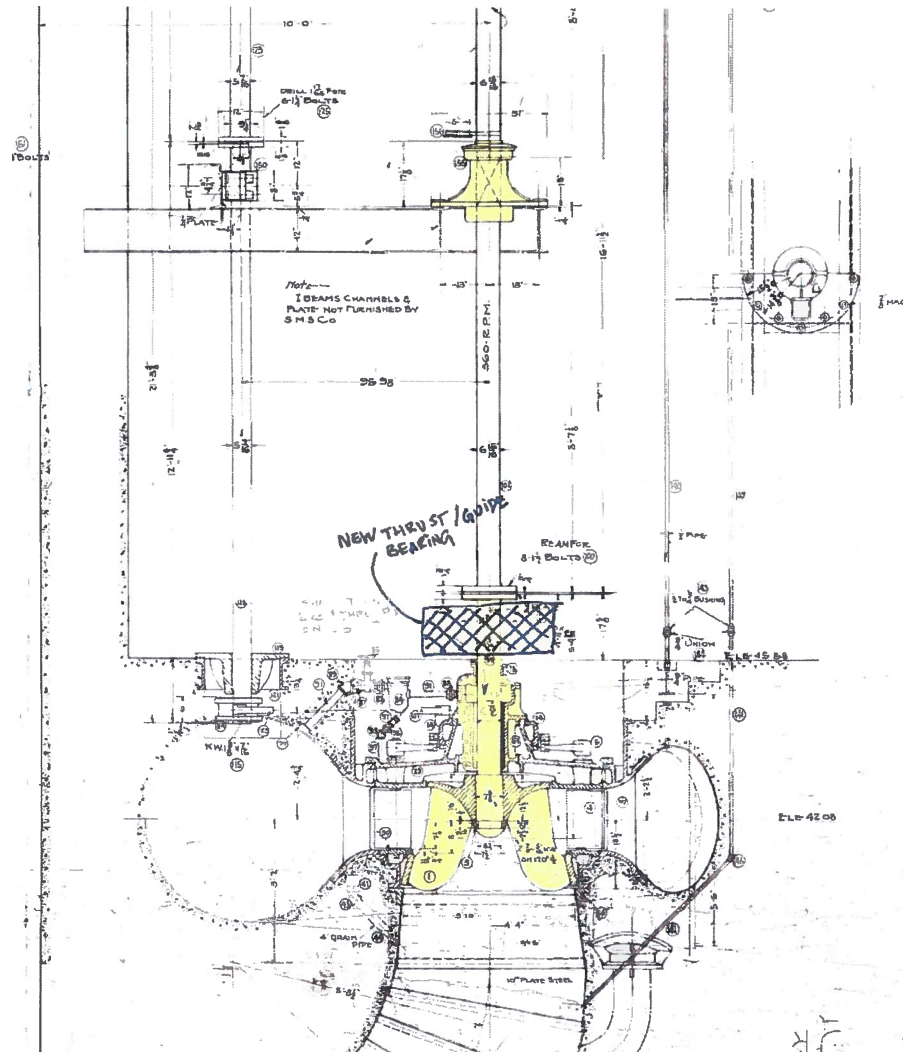


Figure 1: Unit 1 - Vertical Francis Turbine

Turbine Units No. 6, 7, 8 and 9

The following equipment will be removed and replaced for each turbine:

- New Francis style turbine runner

.....

- Turbine-generator units no. 6 to 9 are composed of horizontal Francis turbines. The portions of the turbine highlighted in blue in figure 2 below depict the portions of the unit that will be completely replaced. The drawing below belongs specifically to turbine unit no. 6 and no. 7. Turbine unit no. 8 and no. 9 are very similar in nature and the same modifications will be done to them as well.



As described above, in 2013, the thrust bearing on unit no. 6 completely failed and needed to be replaced in order to continue operating. It was found that the materials used in the previous bearing were not according to industry standards. A new Timken bearing was used and a new bearing retainer was redesigned using upgraded materials.

Head Pond Level Control System

As part of the project, a new and improved head pond level control system will be installed to improve efficiency of operations and maximise production.

For all five units, the installation period is expected to take approximately 2 months to complete. These modifications will allow the facility to increase its operational efficiency by rendering the turbines more reliable and significantly reducing downtime due to outages that are currently the result of excessive vibrations. Engineering will also be done as well to improve the current design of the guide and thrust bearings.

INVESTMENT AND BOOK VALUE OF THE FACILITY

The capital investment required for the planned project are presented in the following table. They total an amount of {REDACTED}

{REDACTED}

In order to determine the percentage of investments as compared to the book value of the facility, the 2015 book value of the LFMF was compared to the estimated cost of the upcoming project, all of which are summarized in the table below.

{REDACTED}

The above table shows that the planned investments amount to {REDACTED} and will represent 128% of the value of generating equipment at the site (including the dam) which is valued at {REDACTED}.

ATTACHMENT 4

Determination of Incremental Production as Required by C.11 and C.12

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INTRODUCTION

The increase in efficiency resulting from the installation of the new turbines is calculated using the approach described in the sections below.

APPROACH

Data is available for the historical production with the existing facility in the form of daily totals for the period 2007 to 2015. The approach used to calculate the increase in efficiency is derived from the approach proposed in the Rhode Island Renewable Energy methodology guide.

STEPS TAKEN

The LFMF is composed of five units, four of which are located in the same building (units no. 6, 7, 8 and 9) and are connected to the same penstock. They are horizontal axis units. The other unit is located in a separate building (unit no. 1) and is connected to a separate penstock. It is a vertical axis unit.

1. In order to determine the daily available flows at the LFMF, the daily flow data from USGS gage # 04252500 on the Black river were used and prorated to the LFMF dam as per the following formula:

$$Fd = Fg \times \left(\frac{Ad}{Ag} \right) \quad (1)$$

Where,

Fd = Average daily flow at the dam in cfs

Fg = Average daily flow at the gage (USGS) in cfs

Ad = Dam area of 870 square miles

Ag = Gage area of 304 square miles

The results for estimated flows at the dam, averaged over each month, are presented in Table 1. Any available flow above 1117 cfs was capped at that number which represents the maximum combined flow for the five units. A mandatory minimum river flow of 70 cfs has already been deducted prior to applying the cap on the flows presented in Table 1. For the first three months of 2015, no flow data were available due to an icing issue at the USGS gage.

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| Average Monthly Flow (cfs) capped at 1117 cfs | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2007 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 772 | 700 | 386 | 488 | 1,117 | 1,117 | 1,117 |
| 2008 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 821 | 1,117 | 1,117 | 1,117 |
| 2009 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 946 | 1,117 | 1,117 | 1,117 |
| 2010 | 1,117 | 851 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 882 | 1,117 | 1,117 | 1,117 |
| 2011 | 927 | 895 | 1,117 | 1,117 | 1,117 | 1,117 | 712 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 |
| 2012 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 392 | 438 | 570 | 1,117 | 849 | 1,117 |
| 2013 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 645 | 774 | 1,117 | 1,117 | 1,117 |
| 2014 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,117 | 1,032 | 1,117 | 1,117 | 1,117 |
| 2015 | ICE | ICE | ICE | 1,117 | 1,117 | 1,117 | 1,117 | 486 | 674 | 1,117 | 1,117 | 1,117 |

Table 1 : Available flows for 2007 to 2015

The monthly flows will be used in step 5 of the procedure to calculate the ratios Production / Flow (MWh / cfs).

- Using the actual daily production at the LFMF, and the estimated daily flows at the dam as calculated in step 1 above, the daily efficiency of the LFMF turbines was calculated using the following formula:

$$Turbine_{Eff} = \frac{P_{Actual}}{\frac{Q \times H_{net} \times Gen_{Eff} \times Xfo_{Eff} \times (1 - Downtime\%) \times T}{11.8}} \quad (2)$$

Where,

P_{Actual} = Daily quantity of energy obtained from historical daily data
 Q = Average turbine flow for a given day in cfs
 H_{net} = Net Head (gross head – avg head losses) in ft (see note below)
 Gen_{Eff} = Generator efficiency set to 95%
 Xfo_{Eff} = Transformer losses set to 1.5% or 98.5% efficiency
 $Downtime$ = Set to 5%
 T = 24 h

Note: For the gross daily head, a head pond and tail water curve was used to determine the water elevations based on inflow at the dam. These curves were evaluated by a third party engineering firm who has previously conducted a study for the LFMF. The head losses were estimated to be 2.5 feet for all units.

- After having calculated the turbine efficiency for each day of the past eight years (2007 to 2015), some data presented values that were considered to be out of range

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(outliers). They were removed from the analysis. The following cases were considered outliers:

- if the turbine efficiency for a given day was below 50% or over 100%,
- when the actual production was equal to 0,
- when the station operators had recorded that some maintenance work was being conducted, or some issue was out of their control,
- if the data from the USGS gage was unavailable for a given day.

After removing the outliers, the total actual production for each month was calculated (Table 2).

| Historical - Monthly Production (MWh) | | | | | | | | | | | | |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2007 | 3,105 | 2,285 | 2,982 | 3,157 | 3,341 | 1,799 | 1,044 | 581 | 397 | 1,444 | 3,196 | 2,509 |
| 2008 | 3,232 | 3,094 | 3,117 | 2,820 | 3,252 | 1,803 | 1,720 | 1,260 | 1,661 | 1,870 | 3,200 | 3,098 |
| 2009 | 2,023 | 1,861 | 2,433 | 2,504 | 2,529 | 2,579 | 2,724 | 2,625 | 1,331 | 2,817 | 2,819 | 2,776 |
| 2010 | 2,178 | 317 | 1,860 | 2,328 | 2,324 | 1,774 | 1,111 | 729 | 1,233 | 2,950 | 2,939 | 3,183 |
| 2011 | 2,231 | 1,525 | 2,851 | 2,116 | 1,979 | 2,609 | 1,896 | 1,445 | 2,202 | 2,637 | 2,828 | 3,141 |
| 2012 | 3,194 | 2,673 | 2,596 | 2,830 | 2,561 | 1,266 | 642 | 442 | 986 | 2,199 | 1,733 | 3,004 |
| 2013 | 2,029 | 0 | 206 | 1,033 | 2,664 | 2,520 | 1,750 | 657 | 1,563 | 2,710 | 2,736 | 2,960 |
| 2014 | 1,531 | 1,025 | 1,759 | 1,835 | 3,090 | 2,737 | 2,199 | 1,524 | 1,135 | 129 | 2,705 | 3,370 |
| 2015 | ICE | ICE | ICE | 2,035 | 2,901 | 1,722 | 2,144 | 530 | 858 | 2,525 | 3,296 | 3,218 |

Table 2 : Historical production 2007 to 2015

- The following step evaluates the performance of the facility after repowering. The same formula as in step 2 is used but the turbine efficiency parameter in the formula was replaced with actual turbine curves for the horizontal and vertical axis turbines. The curves were obtained from James Leffel, a turbine manufacturer that supplied units 6 and 7 in the late 1970's. The curves were implemented in formula (3) below to determine the production of each turbine after improvements. The downtime percentage was estimated to be 5% after the improvements which represents a common percentage in the industry.

$$P_{New} = \frac{Q \times H_{net} \times Gen_{Eff} \times Xfo_{Eff} \times Turbine_{Eff} \times (1 - Downtime\%) \times T}{11.8} \quad (3)$$

Where,

$$P_{New} = \text{Daily quantity of energy produced after repowering}$$

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| | |
|-----------------|---|
| Q | = Average turbine flow for a given day in cfs |
| H_{net} | = Net Head (gross head – avg head losses) in ft |
| Gen_{Eff} | = Generator efficiency set at 95% |
| Xfo_{Eff} | = Transformer losses set at 1.5% or 98.5% efficiency |
| $Turbine_{Eff}$ | = Turbine Efficiency curve based on inflow to the turbine |
| $Downtime$ | = Set to 5% |
| T | = 24 h |

For each day, the total production of the LFMF was obtained by summing up the production calculated for each turbine for that day. Monthly totals were then calculated (see Table 3). The days when outliers had been identified in step 3 were not included in these calculations.

| New Units - Monthly Production (MWh) | | | | | | | | | | | | |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2007 | 3,266 | 3,177 | 3,404 | 3,226 | 3,239 | 1,773 | 1,062 | 626 | 353 | 1,594 | 3,214 | 2,523 |
| 2008 | 3,338 | 3,220 | 3,415 | 3,188 | 3,443 | 2,239 | 2,453 | 1,694 | 1,914 | 2,706 | 3,314 | 3,390 |
| 2009 | 2,639 | 2,679 | 3,249 | 3,163 | 3,217 | 3,225 | 2,977 | 2,982 | 1,602 | 3,317 | 3,164 | 3,150 |
| 2010 | 2,806 | 447 | 2,659 | 3,017 | 2,899 | 2,484 | 1,479 | 898 | 1,438 | 3,288 | 3,018 | 3,376 |
| 2011 | 2,607 | 1,987 | 3,263 | 2,884 | 2,630 | 3,156 | 2,002 | 1,653 | 2,929 | 3,275 | 3,138 | 3,446 |
| 2012 | 3,458 | 3,276 | 3,408 | 3,287 | 3,409 | 1,647 | 681 | 445 | 989 | 2,793 | 1,868 | 3,375 |
| 2013 | 2,684 | 0 | 338 | 1,407 | 3,408 | 3,282 | 2,443 | 839 | 1,794 | 2,880 | 2,846 | 3,108 |
| 2014 | 1,877 | 1,347 | 2,573 | 2,348 | 3,291 | 3,132 | 2,602 | 2,050 | 1,558 | 171 | 2,929 | 3,341 |
| 2015 | ICE | ICE | ICE | 2,249 | 3,159 | 2,516 | 2,388 | 594 | 945 | 2,693 | 3,392 | 3,446 |

Table 3 : Anticipated Production after improvements for 2007 to 2015

- For each month of the period of analysis, a ratio MWh / cfs was calculated for the existing LFMF and for the facility after repowering using the results from Tables 1, 2 and 3. The resulting ratios are presented in Tables 4 and 5.

The monthly average in each case is presented in Table 6 together with the annual average.

| Historical - Production/Flow (Monthly MWh/cfs) | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2007 | 2.78 | 2.05 | 2.67 | 2.83 | 2.99 | 2.33 | 1.49 | 1.50 | 0.81 | 1.29 | 2.86 | 2.25 |
| 2008 | 2.89 | 2.77 | 2.79 | 2.52 | 2.91 | 1.61 | 1.54 | 1.13 | 2.02 | 1.67 | 2.86 | 2.77 |
| 2009 | 1.81 | 1.67 | 2.18 | 2.24 | 2.26 | 2.31 | 2.44 | 2.35 | 1.41 | 2.52 | 2.52 | 2.49 |
| 2010 | 1.95 | 0.37 | 1.66 | 2.08 | 2.08 | 1.59 | 0.99 | 0.65 | 1.40 | 2.64 | 2.63 | 2.85 |
| 2011 | 2.41 | 1.70 | 2.55 | 1.89 | 1.77 | 2.34 | 2.66 | 1.29 | 1.97 | 2.36 | 2.53 | 2.81 |
| 2012 | 2.86 | 2.39 | 2.32 | 2.53 | 2.29 | 1.13 | 1.64 | 1.01 | 1.73 | 1.97 | 2.04 | 2.69 |
| 2013 | 1.82 | 0.00 | 0.18 | 0.93 | 2.38 | 2.26 | 1.57 | 1.02 | 2.02 | 2.43 | 2.45 | 2.65 |
| 2014 | 1.37 | 0.92 | 1.57 | 1.64 | 2.77 | 2.45 | 1.97 | 1.36 | 1.10 | 0.12 | 2.42 | 3.02 |
| 2015 | ICE | ICE | ICE | 1.82 | 2.60 | 1.54 | 1.92 | 1.09 | 1.27 | 2.26 | 2.95 | 2.88 |

Table 4: Production / flow ratio for existing facility for 2007 to 2015.

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| New Units - Production/Flow (Monthly MWh/cfs) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2007 | 2.92 | 2.84 | 3.05 | 2.89 | 2.90 | 2.30 | 1.52 | 1.62 | 0.72 | 1.43 | 2.88 | 2.26 |
| 2008 | 2.99 | 2.88 | 3.06 | 2.85 | 3.08 | 2.00 | 2.20 | 1.52 | 2.33 | 2.42 | 2.97 | 3.04 |
| 2009 | 2.36 | 2.40 | 2.91 | 2.83 | 2.88 | 2.89 | 2.67 | 2.67 | 1.69 | 2.97 | 2.83 | 2.82 |
| 2010 | 2.51 | 0.53 | 2.38 | 2.70 | 2.59 | 2.22 | 1.32 | 0.80 | 1.63 | 2.94 | 2.70 | 3.02 |
| 2011 | 2.81 | 2.22 | 2.92 | 2.58 | 2.35 | 2.83 | 2.81 | 1.48 | 2.62 | 2.93 | 2.81 | 3.09 |
| 2012 | 3.10 | 2.93 | 3.05 | 2.94 | 3.05 | 1.47 | 1.74 | 1.02 | 1.74 | 2.50 | 2.20 | 3.02 |
| 2013 | 2.40 | 0.00 | 0.30 | 1.26 | 3.05 | 2.94 | 2.19 | 1.30 | 2.32 | 2.58 | 2.55 | 2.78 |
| 2014 | 1.68 | 1.21 | 2.30 | 2.10 | 2.95 | 2.80 | 2.33 | 1.83 | 1.51 | 0.15 | 2.62 | 2.99 |
| 2015 | ICE | ICE | ICE | 2.01 | 2.83 | 2.25 | 2.14 | 1.22 | 1.40 | 2.41 | 3.04 | 3.09 |

Table 5 : Anticipated production / flow ratio for repowered facility for 2007 to 2015

| Average Monthly Production/Flow (MWh/cfs) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|---------|
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
| New Units | 2.60 | 1.88 | 2.50 | 2.46 | 2.85 | 2.41 | 2.10 | 1.50 | 1.77 | 2.26 | 2.73 | 2.90 | 2.33 |
| Historical | 2.24 | 1.48 | 1.99 | 2.06 | 2.45 | 1.95 | 1.80 | 1.27 | 1.53 | 1.92 | 2.59 | 2.71 | 2.00 |

Table 6 : Average monthly production/flow for existing and repowered facility

COMPARISON OF RESULTS

Based on the annual averages as calculated in Table 6, the anticipated increase in efficiency resulting from the repowering of the facility is equal to 16.6%.

| COMPARISON OF RESULTS | % Difference |
|-------------------------------------|--------------|
| Theoretical New Units vs Historical | 16.6% |