Mini-Watt Hydroelectric LLC c/o O'Connell Energy Group 57 Suffolk Street, Suite 200 Holyoke, Massachusetts 01040 (413) 534-4660 (main number) (413) 537-9029 (cell); (413) 536-4911 (fax) <u>sfisk@oconnells.com</u>

June 4, 2013

Via E-Mail & U.S. Mail

Rhode Island Public Utilities Commission Attn: Renewable Energy Resources Eligibility 89 Jefferson Boulevard Warwick, Rhode Island 02888

Re: Application for Certification of 69% of Mini-Watt Hydroelectric, LLC's Orange 2 hydro-electric generator (the "Project" or the "Facility") as a Rhode Island New Renewable Resource and 31% of the same Facility as a Rhode Island Existing Renewable Resource (the "Applications")

Dear Sir:

Attached please find the application of Mini-Watt Hydroelectric LLC ("Mini-Watt") for certification by the Rhode Island Public Utilities Commission (the "Commission") of 69% of its Orange 2 hydro-electric generator (the "Project" or the "Facility") as a Rhode Island New Renewable Resource and of 31% of the same Facility as a Rhode Island Existing Renewable Resource.

I. The name, address and contacts of the Applicant –

Primary Contact:

William P. Short III Consultant P.O. Box 237173 New York, New York 10023-7173 (917) 206-0001 (office) (917) 206-0001 (fax) (201) 970-3707 (cell) w.shortiii@verizon.net

Secondary Contact:

Stephen J. Fisk General Manager c/o O'Connell Energy Group 57 Suffolk Street, Suite 200 Holyoke, Massachusetts 01040 (413) 534-4660 (main number) (413) 536-4911 (fax) (413) 537-9029 (cell) <u>sfisk@oconnells.com</u> II. Location of the Generation Facility –

New Home Dam, Millers River, Franklin County:

North Powerhouse – 18 Chase Court REAR, Orange, Massachusetts South Powerhouse – 16 West River Street REAR, Orange, Massachusetts

Latitude/Longitude – 42⁰ 35' 21.21"N / 72⁰ 18' 38.08"W

III. Description of the Generation Facility –

Mini-Watt is a special purpose entity formed for the sole purpose to own the Facility, a 455 KW hydro-electric generator located in Orange, Massachusetts. The Facility's energy, capacity and ancillary services are presently sold to Templeton Municipal Light and Water Plant ("Templeton"). The Facility is interconnected to National GRID d/b/a Massachusetts Electric Company ("Massachusetts Electric") distribution lines located along Chase Court and West River Street. The dam was reconstructed in 1940 after the catastrophic flood of 1938 severely damaged the prior dam.

The North Powerhouse generating unit ("T1," a 1940 Leffel Z turbine with 175 KW generator) was installed at the time of the dam reconstruction. The South Powerhouse contains 2 generating units ("T2", a 1944 Leffel A turbine with 120 KW generator and "T3," a HSI double-regulated Kaplan turbine with 160 KW generator). T2 was relocated from a mill building along the Chicopee River located in Wilbraham, Massachusetts to its current location in the South Powerhouse in 1995. T3 was purchased new and installed in 2010, replacing a 1944 turbine-generator that had the same capacity as T2 (120 KW). T3 was placed in-service on or before November 30, 2010.

The Facility does not involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less.

IV. New and Existing Renewable Energy Resource -

A New Renewable Energy Resource means at the site of an Existing Renewable Energy Resource, the entire output of a Generation Unit which uses Eligible Renewable Energy Resources and first entered commercial operation after December 31, 1997, provided that the Existing Renewable Energy Resource has been retired and replaced with such new Generation Unit.

An Existing Renewable Energy Resources means a generation unit using an Eligible Renewable Energy Resource and first entering commercial operation before December 31, 1997.

Mini-Watt retired the old T3 turbine-generator set in 2010 by replacing completely the previous unit (a propeller turbine), including structural modifications, to accommodate a new double-regulated Kaplan turbine-generator set. This new turbine-generator set has greater

capacity and higher efficiency than the previous turbine. All major components of T3 were replaced except for the Orange 2 station transformer. Although major equipment changes were made to T2, there were no equivalent changes made to its turbine or the structures upon which the turbine sits. Accordingly, Mini-Watt requests only New treatment for T3 and only Existing treatment for T2.

Based upon the generation of the Facility for 2011 through April 2013, Mini-Watt requests that 69% of Orange 2 be certified as Rhode Island New and 31% of Orange 2 be certified as Rhode Island Existing. Upon request and confidential treatment, Mini-Watt will provide the Commission with a copy of its analysis.

V. Qualification for Comparable Renewable Portfolio Standard Requirement -

Mini-Watt has already self-certified the entire Facility as a Maine Class II renewable resource. The Maine Public Utility Commission ("MPUC") has certified the production from T3 as a Maine Class I renewable resource. Mini-Watt intends to qualify the production from T3 as a Connecticut Class I source and New Hampshire Class I resource in the future.

VI. Other Information –

The Facility's electrical output is read by Massachusetts Municipal Wholesale Electric Company ("MMWEC"). The output of T1 is reported under MSS generator #854 as Orange #1 while the combined output of T2 and T3 is reported under MSS generator #855 as Orange #2. This information is conveyed to ISO New England, Inc. ("ISO-NE"), which in turn conveys it directly to APX, Inc., the operator of the NEPOOL Generation Information System ("GIS").

Quarterly, Mini-Watt files a generation report with the MPUC in which it reports its generation production from T1 (MSS Generator #854) as Orange #1, T2 (as part of MSS Generator # 855) and T3 (also as part of MSS Generator #855). The percentage of the production from Orange 2 attributed to T3 is calculated and, once accepted by MPUC, that report and its percentage are sent to APX, Inc. APX, Inc. then adjusts the percentage of Orange 2 that qualifies for Maine Class I treatment. Upon request, copies of such correspondence will be made available to the Commission.

The Applicant has authorized APX to disclose to the Commission the Facility's monthly generation production.

Upon review of our application, if you have any questions or concerns, please do not hesitate to contact either of the aforementioned persons.

Sincerely,

Stephen J.

enclosures

cc: William P. Short III (e-mail only) Steve Berry (e-mail only) Service List

List of Enclosures or Website Links

Rhode Island RES Application Form

Order Granting Exemption from Licensing of a Small Hydroelectric Project of Five Megawatts or Less (Issued December 28, 1984)

Order Amending Exemption (Issued May 5, 2009)

Order Approving Streamflow Compliance Monitoring Plan (Issued August 2, 2010)

Other States' RPS Certification -

Maine¹

Pre-Construction, Construction and Post Construction Reports and Photographs of the Facility

¹ The MPUC does not issue orders confirming that generation facilities have been certified as Maine Class II renewable resources.

 RIPUC Use Only

 Date Application Received:
 ____/____

 Date Review Completed:
 ____/____

 Date Commission Action:
 ____/_____

 Date Commission Approved:
 _____/_____

GIS Certification #:

<u>MSS #855</u>

RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

The Standard Application Form Required of all Applicants for Certification of Eligibility of Renewable Energy Resource (Version 7 – June 11, 2010)

STATE OF RHODEISLAND 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

89 Jefferson Blvd

Warwick, RI02888 Attn: Renewable Energy Resources Eligibility

In addition to the paper copies, electronic/email submittals are required under Commission regulations. Such electronic submittals should be sent to: Luly E. Massaro, Commission Clerk at lmassaro@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 https://www.lmassaro@puc.state.ri.us

SECTION I: Identification Information

1.1 Name of Generation Unit (sufficient for full and unique identification):

Orange #2 (Mini-Watt Hydroelectric)

- 1.2 Type of Certification being requested (check one):
 X 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:

William P. Short III, Consultant

- 1.5
 Primary Contact Person address and contact information: Address:

 P.O. Box 237173 New York, New York 10023-7173

 Phone:
 (917) 206-0001 Email:

 w.shortiii@verizon.net

Fax: (917) 206-0001

1.6 Backup Contact Person name and title:

Stephen J. Fisk, General Manager

 1.7 Backup Contact Person address and contact information: Address: Mini-Watt Hydroelectric, LLC <u>c/o O'Connell Energy Group</u> <u>57 Suffolk Street, Suite 200</u> <u>Holyoke, Massachusetts 01040</u>

 Phone: (413) 534-4660 Email: sfisk@oconnells.com

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.

1.8 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):

William P. Short III, Consultant

Appendix A or B (as appropriate) completed and attached? \Box Yes \Box No \underline{X} N/A

1.9 Authorized Representative address and contact information: Address:

 P.O. Box 237173

 New York, New York 10023-7173

 Phone:
 (917) 206-0001

 Email:
 w.shortiii@verizon.net

Fax: (917) 206-0001

1.10 Owner name and title:

Stephen J. Fisk, General Manager

 1.11
 Owner address and contact information:

 Address:
 Mini-Watt Hydroelectric, LLC

 c/o O'Connell Energy Group

 57 Suffolk Street, Suite 200

 Holyoke, Massachusetts 01040

 Phone:
 (413) 534-4660

 Email:
 sfisk@oconnells.com

Fax: (413) 536-4911

- 1.12 Owner business organization type (check one):
 - Individual
 - Partnership
 - □ Corporation
 - X Other: Massachusetts Limited Liability Company
- 1.13 Operator name and title: <u>Stephen J. Fisk, General Manager</u> Operator address and contact information:
 - Address:O'Connell Energy Group
57 Suffolk Street, Suite 200
Holyoke, Massachusetts 01040Phone:(413) 534-4660
Sisk@oconnells.com
- 1.14 Operator business organization type (check one):
 - Individual
 - □ Partnership
 - □ Corporation
 - X Other: Massachusetts 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): <u>MSS #855</u>
- 2.2 Generation Unit Nameplate Capacity: 0.455 MW
- 2.3 Maximum Demonstrated Capacity: 0.455 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
 - $\Box \quad \text{The wind} \quad$
 - □ Movement of or the latent heat of the ocean
 - **The heat of the earth**
 - X 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
 - $\underline{\mathbf{X}} \leftarrow$ 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*
 - $\underline{\mathbf{X}} \leftarrow$ 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 I No I N/A

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

 $\underline{\mathbf{X}}$ Yes \Box No If yes, please attach a copy of that state's certifying order.

Copy of State's certifying order attached? \underline{X} Yes \underline{X} No \Box 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: $\frac{11}{30}$ / $\frac{2010}{2010}$ 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?

 $\underline{\mathbf{X}}$ Yes \Box No \Box N/A

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

 \mathbf{X} Yes \Box No \Box 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?
 - **U** Yes
 - X 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):
 - X 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?

 \Box Yes \Box No \underline{X} N/A

SECTION V: Location

- 5.1 Please check one of the following that apply to the Generation Unit:
 - **X** 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: Orange #2 (the "Project") is located on the Millers River at 18 Chase Court REAR, Orange, Massachusetts.
- 5.3 Please provide the Generation Unit's geographic location information:
 - A. Universal Transverse Mercator Coordinates:
 - B. Latitude/Longitude <u>42⁰ 35' 21.21''N / 72⁰ 18' 38.08''W</u>
- 5.4 The Generation Unit located: (please check the appropriate box)
 - **X** 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? \Box Yes \Box No \underline{X} 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?	U Yes	🛛 No	<u>X</u> N/A
Corporate Certification provided?	U Yes	🛛 No	X 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.

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.

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:

Man P. Short III

DATE:

Consultant (Title)

GIS Certification #: <u>MSS #855</u>

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

STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISION

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 <u>William P. Short III</u>, 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 <u>Mini-Watt Hydroelectric, LLC</u>, the Owner or Operator of the Generation Unit named in section 1.1 of the Application.

SIGNATURE imus h. Xullinun

DATE:

State: Massachusetts County: Hampden

(TO BE COMPLETED BY NOTARY) I, Elaine M. O'Grady as a notary public, certify that I witnessed the signature of the above named James N.Su 111000 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: June 7, 2013

SIGNA My commission expires on:



DATE:

NOTARY SEAL:

GIS Certification #: MSS #855

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 COMMISION

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? X 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?
 X Yes □ No
- 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?
- 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.
- 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 X 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)? \Box Yes X 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?
- 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.
- 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.

- 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?
 - 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.
 - 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.

UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION

EXEMPTION

29 FERC 161, 356

Before Commissioners: Raymond J. O'Connor, Chairman; Georgiana Sheldon, A. G. Sousa, Oliver G. Richard III and Charles G. Stalon.

Mini-Watt Electric Company) Project No. 6096-001

ORDER GRANTING EXEMPTION FROM LICENSING OF A SMALL HYDROELECTRIC PROJECT OF 5 MEGAWATTS OR LESS

(Issued December 28, 1984)

The Applicant 1/ filed an application for exemption from all or part of Part 1 of the Federal Power Act (Act) pursuant to 18 C.F.R. Part 4 Subpart K (1980) implementing in part Section 408 of the Energy Security Act (ESA) of 1980 for a project as described in the attached public notice. 2/

Notice of the application was published in accordance with Section 408 of the ESA and the Commission's regulations and comments were requested from interested Federal and State agencies including the U.S. Fish and Wildlife Service and the State Fish and Wildlife Agency. All comments, protests and motions to intervene that were filed have been considered. No agency has any objection relevant to issuance of this exemption.

Standard Article 2, included in this exemption, requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. The terms and conditions referred to in Article 2 are contained in any letters of comment by these agencies which have been forwarded to the Applicant in conjunction with this exemption. 3/

- 1/ Mini-Watt Electric Company, Project No. 6096-001, filed on February 29, 1984.
- 2/ Pub. Law 96-294, 94 Stat. 611. Section 408 of the ESA amends inter alia, Sections 405 and 408 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. \$\$ 2705 and 2708).
- 3/ An exemption from licensing granted by this Commission does not serve as any basis for restricting hunting and fishing access to the waterway involved except to the extent required for public safety purposes.

Project No. 6096-001

Should the Applicant contest any terms or conditions that were proposed by Pederal or State agencies in their letters of comment as being outside the scope of Article 2, the Commission shall determine whether the disputed terms or conditions are outside the scope of Article 2.

-7-

Based on the terms and conditions required by Federal and State fish and wildlife agencies, the environmental information in the application for exemption, other public comments, and staff's independent analysis, issuance of this order is not a major Federal action significantly affecting the quality of the human environment.

The Commission orders:

(A) The New Home Dam Project No. 6096 as described and designated in Mini-Watt Electric Company's application filed on February 29, 1984, is exempted from all of the requirements of Part I of the Federal Power Act, including licensing, subject to the standard articles in \$ 4.106, of the Commission's regulations attached hereto as Form E-2, 18 C.F.R. \$ 4.106 45 Fed. Reg. 76115 (November 18, 1980), and the following Special Article:

Article 6. Any exempted small hydroelectric power project that utilizes a dam which is more than 33 feet in height above streambed, as defined in 18 CFR 12.31(c) of this chapter, impounds more than 2,000 acre-feet of water, or has a significant high hazard potential, as defined in 33 CFR Part 222, is subject to the following provisions of 18 CFR Part 12;

- (i) Section 12.4(b)(1)(i) and (ii), (2)(i), (iii)(A) and
 (B), (iv), and (v);
- (ii) Section 12.4(c);
- (iii) Section 12.5;
- (iv) Subpart C; and
- (v) Subpart D.

For the purposes of applying these provisions of 18 CFR Part 12, the exempted project is deemed to be a licensed project development and the owner of the exempted project is deemed to be a licensee.

(B) This order is final unless an application for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the Federal Power Act. The filing of an

application for rehearing does not operate as a stay of the effective date of this order, except as specifically ordered by the Commission. Failure to file an application for rehearing shall constitute acceptance of this order.

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By the Commission.

(SEAL)

Kemits F. Plunk

Kenneth F. Plumb, Secretary.

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Contact Persons" Eruce J: Dexter, Mini-Matt Elsciric Comp P.O. Box 237, 19 Chase Court, Orange, Massachusetts 0136

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Furpose of Projects Project Massachusette Electric Compar s all existing **Upplicant**

This notice also consists of paragraphs: Ai, A9, B, C, DJ



Attachment

\$ 4.108 <u>Standard terms and conditions of exemption from litenting</u>. Say exemption from Litensing granted under this subject for a small hydroelectric power project is subject to the following , standard terms and conditions:

f.

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(a) <u>Article 1</u>. The Commission reserves the right to conduct investigations under sections 4(g), 306, 307, and 311 of the Federal Power Act with respect to any acts, complaints, field, conditions, practices, or other matters related to the construction, operation, or maintenance of the exampt project. If any term or condition of the examption is visited, the Commission may revoke the examption, issue a suitable order under section 4(g) of the Federal Power Let, or take appropriate action for enforcement, forfaiture, or penaltice under Fark III of the Federal Power Act.

(b) <u>Articly 2</u>. The construction, operation, and minimum of the exampt project must comply with any terms and conditions that any rederal or state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources or otherwise to carry out the purposes of the Fish and Wildlife Coordination Act, as specified in Exhibit 2 of the appliention for examption from linessing or in the consents submitted in response to the police of the examples application.

(a) <u>Article 3</u>. The Commission may accept a license application by any qualified lisense applicant and revoke this exception if estual construction or development of any proposed generating facilities has not begun within 18 months, or been completed within four, years, from the date on which this exception was granted. If as exemption is revoked, the Commission will not accept a subsegroup application for exemption within two years of the revocation. (4) <u>Article 4</u>. This examption to subject to the mavigation servitude of the United States if the project is located on mavigable waters of the United States.

Attachma

(a) <u>Article 2</u>. This exemption does not confer any right to use an every any Pederal Lands that may be necessary for the development or operation of the project. Any right to use or or every any Pederal lands for those purposes must be obtained from the administering Pederal land agamaics. The Commission may accept a license application by any qualified license applicant and reveate this examption, if any necessary right to use or occupy Pederal lands for those purposes has not been obtained within one year from the date on which this examption was granted. Purpose of Exemption: An exemption, if issued, gives the Exemptes priority of control, development, and operation of the project under the terms of exemption from licensing, and protects the Exemptes from parmit or license applicants that would seek to take or develop the project.

- 9. Notice of intent -- A notice of intent must specify the exact nime, business address, and telephone number of the prospective applicant, include an unequivocal statement of intent to submit, if such an application may be filed, either (1) a preliminary permit application of (2) a license, saal hydroelectric exemption, or conduit exemption application, and be served on the applicant(s) named in this public notice.

Piling and Service of Responsive Documents - Any filings sust bear in all capital latters the title "Connents", "Morick of INTENT TO FILE CONFERING AFFICATION", "CONFERING AFFICATION", "PACTERT, or "MORION TO INTERVINE", as application to which the filing is in response. Any of the above named documents must be filed by providing the original and those copies required by the Commission's requisitions to IXennet F. Plumb Secretary, rederal Reardy Regulatory Commission, #35 North Capitol Street, N.S., Weshington, D.C. 20436. An additional copy must be sent too Fred S. Springer, Director, Division of Project Managément Branch, Office of Nydropower Licensing, redares Insery Regulatory Commission, Room 208.B. at the above address. A copy of any motice of Intent, competing application, of the Applicant specified in the particular application.

Exemption for Small Hydroelectric Fower Project Under SH4 Capacity -- Any qualified license or conduit exemption applicant desiring to file a competing application nust submit to the Commission, on or before the spacified comment date for the particular application, either a competing license or conduit exemption application that proposes to develop at less 7.5 megawatts in that project, or a notice of intent to file such an epplication. Any qualified small hydroelectric exemption epplicated desiring to file a competing application must submit to the Commission, on or before the spacified compent desiring to file a competion application or a notice of intent of file such an application, submission of a timely notice of intent ellows an interested person to file the competing license, conduit exemption, or small hydroelectric exemption application a later than 100 days after the specified comment date for the particular application. Applications for preliminary permit will not be accepted in response to this notice.

. <u>Convents, Protests, or Notions to Intervens</u> - Anyone may submit convents, a protest, or a motion to intervene in accordance with the requirements of the Ruise of Practice and Procedure, 18 C.F.K. \$\$135.210, .211, .214. In determining the appropriate action to take, the Commission will consider all protests or other commants filed, but only those who file a mation to intervene in accordance with the Commission's Ruise may become a party to the proceeding. Any comments, protests, or motions to intervene sust be received on or before the specified comment date for the particular application.

> 3a. Agancy Comments - The U.S. Fish and Mildlife Service, the Mational Marine Fisherles Service, and the State Fish and Game agency(iss) are requested, for the purposes set forth in Section 406 of the Energy Security Act of 1980, to file within 60 days from the date of issuance of this motipe appropriate terms and conditions to protedt any fish and wildlife resources or to otherwise carry you the provisions of the Fish and Mildlife Coortnation Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of axispiton must be clearly identified in the signing latter: If an agency does not file terms and conditions within this time period, that agency will be presumed to have none: Other Federal, State, and local egencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other formal requests for comments will be made. Comments should be confined to substantive issues relevant to the granting of an examption. If an agency does not file commants within 60 days from the date of issuence of this notios. It will be presumed to have no comments. One copy of an agency's comments wall also be sent to the Applicant's representatives.

> > Kenneth F. Plumb Secretary

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127 FERC ¶ 62,107 UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION

Mini-Watt Hydroelectric LLC

Project No. 6096-012

ORDER AMENDING EXEMPTION

(Issued May 05, 2009)

On March 31, 2009, Mini-Watt Hydroelectric (exemptee) filed an application to amend its exemption for the New Home Dam Project, FERC No. 6096. The project is located on the Millers River in Franklin County, Massachusetts.

BACKGROUND

On December 28, 1984, the New Home Dam Project was exempted from licensing.¹ The project was authorized with four generating units with a total installed capacity of 677 kW. The project, with construction completed in 1995, consists of two powerhouses, one on the North Bank of the river and one on the South Bank. The North Bank Development contains a single turbine/generator unit rated at 175 kW, and the South Bank Development contains two units rated at 120 kW each, for a total installed capacity of 415 kW.

PROPOSED AMENDMENT

The exemptee proposes to amend the project's installed capacity from 415 kW to 495 kW by replacing one existing propeller turbine/generator unit rated at 120 kW with a new double regulated Kaplan turbine/generator unit rated at 200 kW at the South Bank Development. The proposed construction will begin in September 2009 with completion in August 2010. The operation of the project will remain at run-of-river mode, with a minimum bypass flow of 10 cubic feet per second.

¹ 29 FERC ¶61,356 (1984).

AGENCY CONSULTATION

The exemptee consulted with the U.S. Fish and Wildlife Service (FWS) and the Massachusetts Division of Fisheries and Wildlife (MDFW). The FWS provided the exemptee with two environmental concerns related to the proposal: (1) water quality in the bypassed reach, and (2) the intake velocity. After the exemptee provided further information and the FWS verified the data, the concerns were resolved to the FWS's satisfaction. In addition, the FWS recommended that the exemptee update the existing streamflow compliance monitoring plan, which we are requiring in ordering paragraph (D). The MDFW stated that it concurred with the FWS assessment and has no objection to the proposal.

DISCUSSION

A. Design Changes

The exemptee's proposal to replace one existing propeller turbine/generator with a new double regulated Kaplan turbine unit would result in an increase in hydraulic and generating capacities. The hydraulic capacity of the project would increase from 166 cfs to 200 cfs. The project's generating capacity would increase from 415 kW to 495 kW.

B. Exhibits A and G Drawings

The Exhibit A describes the as-built project features, as authorized, and the proposed replacement of the unit. The exemptee also includes two Exhibit G drawings related to the turbine replacement: (1) G-1, Existing Plan and Cross Section View of the turbine replacement; and (2) G-2, Proposed Plan and Cross Section View of the turbine replacement. The Exhibit A and Exhibit G drawings conform to the Commission's rules and regulations and are approved in ordering paragraph (E) of this order. In ordering paragraph (F), we are requiring the exemptee to file the approved exhibit drawings in aperture card and electronic file formats. The filed G-1 and G-2 drawings are redesignated as G-6 and G-7, respectively, to preserve the original G-1 and G-2 drawings filed on December 28, 1984.

C. Environmental Review

All work will take place in the South Bank Development powerhouse, and the construction area will be closed off by installing stop logs in the tailrace and closing the headgates. The operation will remain run-of-river mode throughout all

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activities and after the construction. The FWS's analyses of the proposal indicated that it is unlikely that impairment to water quality would occur and the intake velocity will meet its velocity design criterion. In addition, the exemptee indicated that: (1) the monitoring system would be modified to make the new turbine, with a wider operating range, be the first on and last off; and (2) the North Bank Development unit would be tied to the system. As such, the project would improve its ability to maintain and verify compliance with operational requirements of the exemption.

CONCLUSION

The increase in project capacity from 415 kW to 495 kW is within the project's authorized capacity of 677 kW. The new turbine is estimated to produce an additional 350,000 kWh annually. In addition, the modifications to the monitoring system would improve the project's compliance with operational requirements.

The Commission's staff finds that the increase in the project's installed capacity would not result in any additional adverse environmental effects other than those identified during processing of the exemption. Therefore, this order will amend the exemption to replace one existing propeller turbine/generator unit rated at 120 kW with a new double regulated Kaplan turbine/generator unit rated at 200 kW at the South Bank Development.

The Director orders:

(A) The exemption for the New Home Dam Project, FERC No. 6096, is amended as provided by this order, effective the date this order is issued.

(B) The total authorized installed capacity of the New Home Dam Project, FERC No. 6096, is 495 kW.

(C) Appendix A, subparagraph j, of the Order Granting Exemption from Licensing is revised, in part, to read as follows:

j. Description of Project:The North Bank Development would consist of: (2) an existing powerhouse containing one generating unit with an installed capacity of 175 kW;

The South Bank Development would consist of: (3) a powerhouse with two generating units with a total installed capacity of 320 kW; The estimated annual generation of the project would be 1,700,000 kWh.

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Within one year from the date this order is issued, the exemptee shall (D)file for Commission approval, a revised stream flow compliance monitoring plan, incorporated with the modification and improvement. The system must monitor and document compliance with the minimum flow release requirement under Article 2 of the exemption and the terms and conditions provided by the U.S. Fish and Wildlife Service. The plan shall include location of monitoring equipment, and shall provide for gage system calibration, the method of flow data collection and for providing flow data to the U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, and the Massachusetts Department of Environmental Protection within 30 days of the agency's request for the data. The Flow Monitoring Plan shall be prepared in consultation with the U.S. Fish and Wildlife Service, the Massachusetts Division of Fisheries and Wildlife, and the Massachusetts Department of Environmental Protection. The exemptee shall include with the Plan documentation of consultation, copies of comments and recommendations on the completed Plan after it has been prepared and provided to the consulted agencies, and specific descriptions of how the agencies' comments are accommodated by the Plan. The exemptee shall allow a minimum of 30 days for the agencies to comment and make recommendations prior to filing the Plan with the Commission for approval. If the exemptee does not adopt a recommendation, the filing shall include a discussion of the exemptee's reasons, based on project specific information. The Commission reserves the right to require changes to the Plan.

(E) The Exhibit A and the following Exhibit G drawings filed on March 31, 2009, are approved and made part of the exemption.

Exhibit No.	FERC Drawing No.	Drawing Title	Superseded FERC Drawing No.
G-6	6096-8	Existing Plan and	
		Cross Section View of	
		Turbine Replacement	
G-7	6096-9	Proposed Plan and	
		Cross Section View of	
		Turbine Replacement	

Exhibit G drawings shall be filed in the Commission's electronic format as specified in ordering paragraph (F). Superseded exhibits are eliminated from the exemption.

(F) Within 45 days of the date of issuance of this order, the exemptee shall file the approved exhibit drawings in aperture card and electronic file

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formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (i.e., P-6096-8 and P-6096-9) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., G-6 and G-7), Drawing Title, and date of this order shall be typed on the upper left corner of each aperture card. See Figure 1.



Figure 1. Sample Aperture Card Format

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office.

b) The exemptee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. The approved exhibit drawings must be segregated from other project exhibits and identified as (CEII) material under 18 CFR § 388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Drawing Number, FERC Exhibit, Drawing Title, date of this order, and file extension [i.e., P-6096-8, G-6, Existing Plan and Cross Section View of Turbine Replacement, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

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IMAGERY - black & white raster file FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4 RESOLUTION – 300 dpi DRAWING SIZE FORMAT – 24" X 36" (min), 28" X 40" (max) FILE SIZE – less than 1 MB

(G) This order constitutes final agency action. Requests for rehearing may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

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

132 FERC ¶ 62,084 UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION

Mini-Watt Hydroelectric LLC

Project No. 6096-012

ORDER APPROVING STREAMFLOW COMPLIANCE MONITORING PLAN

(Issued August 02, 2010)

1. On April 30, 2010, Mini-Watt Hydroelectric LLC, exemptee for the New Home Dam Project, filed its Streamflow Compliance Monitoring Plan, pursuant to the Order Amending Exemption (2009 order).¹ The project is located on the Millers River in Franklin County, Massachusetts.

BACKGROUND

2. The project consists of the New Home Dam, comprised of two Bascule gates (approximately 7 feet by 40 feet) with center and end piers, and two powerhouses, one on the north side and one on the south side. The north powerhouse is located at the end of an open flume structure, approximately 90 feet downstream of the dam and houses one turbine, T1 (operates at 225 cubic feet per second (cfs)). The south powerhouse is located at the end side of a discharge channel, approximately 110 feet downstream of the dam, and houses two turbines, T2 (operates at 176 cfs) and T3 (operates at flows ranging from 14 to 190 cfs).

3. Article 2 of the project's exemption requires that the project be operated in compliance with any terms and conditions that federal or state fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources.² The U.S. Fish and Wildlife Service (FWS), in a letter dated November 14, 1984, stipulated that the project provide an instantaneous minimum flow of 152 cfs below the project (that is, historical median August flow), and 10 cfs in the bypassed reach, or inflow, whichever is less.

² Order Granting Exemption for Licensing of a Small Hydroelectric Project of 5 Megawatts or Less, 29 FERC ¶61,356 (1984).

¹ 127 FERC ¶62,107 (Issued May 5, 2009).

4. The exemptee's compliance history shows that there have been several allegations of noncompliance with Article 2.³ The Commission was often unable to determine if the project was operated in compliance with Article 2 based on the data provided by the exemptee, and further indicated that it was unlikely that project operators had the information needed to ensure minimum flow release requirements were being met. In a February 12, 2002, letter, the Commission requested the exemptee to file a streamflow compliance and monitoring plan that included: (1) a description of how the project would be operated to insure that inflows are released as quickly as possible following times when downstream flows fall below 152 cfs; (2) a description of how flows below the project would be monitored and recorded to ensure and demonstrate compliance with exemption Article 2; and (3) comments or correspondence from the U.S. Geological Survey (USGS) and FWS regarding the plan. The exemptee filed a plan on April 5, 2002, in which it proposed to adjust the operating procedure on a trial basis over six months. The plan entailed using the Army Corps of Engineers gage (Corps gage, in Athol, Massachusetts) as an indicator of river flow to operate the project and manage the upper pond level (0.5 to 1.5 inches above the dam crest when river flows are at or below 152 cfs, and 0.5 above to 0.5 inches below the dam crest when river flows are above 152 cfs). The Corps gage is located in a flat water section of the river (an apparent backwater of the New Home Dam Project) and the impoundment behind the dam could result in an inaccurate discharge reading at the gage, particularly at low flows. In its June 25, 2002, letter, the Commission found it unacceptable to use the Corps gage to determine when to modify operations. Additionally, the Commission determined that the exemptee should be able to determine compliance based on estimates of project discharge based on project generation, and concluded that additional gaging below the project may be needed if compliance problems arose at the project.

5. The Commission's 2009 order included the FWS' request for the exemptee to provide an updated streamflow compliance monitoring plan. Specifically, the plan should include the location of the monitoring equipment and provide for gage system calibration, the method of flow data collection, and the process for providing data to the FWS, Massachusetts Division of Fish and Wildlife (MDFW), and the Massachusetts Department of Environmental Protection (MDEP) within 30 days of an agency request for that data.

³ See unpublished letters issued by the Commission dated December 10, 2001; February 12 and June 25, 2002; August 27, 2007; and December 22, 2009.

EXEMPTEE'S PLANS

6. The exemptee's plan states that all three turbines can be operated in automated level control, with any unit being selected as the lead turbine. Under normal operating conditions, the standard operating procedure states that T3 will be the flow regulating turbine (i.e., first on, last off). Measurements from sensors located in the head pond, tailrace, and each turbine gate will be used to calculate stream flows through the turbines and the total facility flow. Operation of T3 will be based on a head pond level of approximately 0.5 inches above the crest of the dam, with turbine gate settings automatically adjusted to maintain this head pond elevation. All operations are subject to conditions beyond the control of the facility operators (including but not limited to power outages, equipment failures, signal variations due to temperature, and fouling of sensors by river debris).

7. During a decrease in pond elevation (decreasing river flow conditions), T3 turbine gates will modulate to a closed position. The gates will continue to close (based on a computer algorithm for time and pond level) in an attempt to maintain the head pond elevation at 0.5 inches above the crest of the dam. In a situation where T3 is at minimum gate position and the head pond level decreases to below 0.5 inches above the dam, T3 and the remaining turbines will be turned off and all inflow will pass over the dam. If pond levels continue to decrease, human operator actions will be implemented, including closing of manually operated head gates to minimize leakage through the turbines to preserve the head pond.

8. During an increase in pond elevations (increasing river flow condition), turbine gates will modulate open, to limit upstream flooding. The gates will continue to open (based on a computer algorithm for time and pond level) in an attempt to maintain head pond elevation at 0.5 inches above the bascule gate. If pond levels continue to rise after T3 has reached full gate, T1 will be started and ramped up to optimum gate; simultaneously, T3 will be reduced to a minimum gate setting and will continue to automatically adjust to maintain head pond levels (i.e., its gates will continue to open if the sensed pond level continues to increase). If the sensed pond level continues to rise, then T2 will be started and ramped up to optimum gate; simultaneously, T3 will be reduced to a minimum gate setting and will continue to adjust to maintain head pond levels as described above. If the head pond continues to rise when all turbines are on and at full capacity, then the south Bascule gate will automatically adjust downward upon reaching the top of the center pier located between the two bascule gates at the dam. After this level is reached, then human operator input is required for manual operation of north Bascule gate to respond to high river flow situations. During high flow events, the sequences of operations are coordinated with the Army Corps Flood Control Operators at Tully Lake and Birch Hill Dams, located upstream of the New Home

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Dam. When high river flow conditions subside back to the decreasing flow condition, the sequence of operation is reversed.

9. Streamflow compliance will be accomplished by maintaining head pond elevation as described above in the standard operating procedure. At river flows up to 600 cfs, the pond level is controlled by operating the 3 turbines; flows are calculated for each turbine based on turbine equipment curves and recorded head and gate positions. For each turbine, the turbine flow calculation is performed by a computer to calculate the water flow based on the equipment performance curves, using data collected from level monitoring devices for the head pond and tail water elevation, and for the turbine gate position. Above a 600 cfs pond level, the crest gates are operated to prevent upstream flooding.

10. Upon request by the agencies, the exemptee will compile the data into a report format and provide the report within 30 days of the request. The report will include the following information collected from sensors: date and time stamps, head pond and tailwater elevation, net head (difference between head pond and tailwater elevations), turbine wicket gate position, and bascule gate elevation. The report will additionally include data on flows from leakage through the dam (10 cfs), downstream passage at the south and north sides of the powerhouse (up to 25 cfs if operator tag is selected on), flow over the dam, flow through each turbine, and total flows through the facility. The data used in the turbine flow calculation will be recorded in 60 minute intervals and stored in a file on a monthly basis. The collected data will be maintained on site in electronic format, and backed up to an offsite location on a monthly basis. Data will be retained for a period of three years.

11. A staff gage will be installed adjacent to the head pond level transducer in the summer of 2010, thus providing a numerical indicator of pond elevation and an opportunity to calibrate the level transducer. Daily inspections will be made at the site, and alarms (for high and low water level conditions during generating conditions) will automatically dial to the operator after normal operating hours. Daily inspections will specifically include observation of water levels and any needed adjustments made in the programmable logic controller (PLC) input from transducers and set points (if adjustments cannot be made or the transducer's input provides incorrect information, the transducer will be replaced with a spare kept in the spare parts inventory).

AGENCY CONSULTATION

12. The FWS provided comments on the exemptee's plan on March 11, 2010. The comments suggested several language changes in the exemptee's description

of minimum flows through the facility. Additionally, the FWS recommended the plan contain a discussion of how data will be maintained and a description of how flow monitoring equipment will be maintained and calibrated. Following these revisions, the exemptee provided the final plan to the FWS, MDEP, and MDFW on March 22, 2010. The FWS, MDEP, and MDFW each accepted the plan, on March 31, April 12, and April 28, 2010, respectively.

DISCUSSION AND CONCLUSION

13. The exemptee's plan should ensure compliance with the streamflow requirements of the project exemption and addresses the concerns previously raised by the Commission's noncompliance investigations (specifically, that the exemptee lacked the information needed to ensure minimum flow release requirements were met, and was unable to provide a data set demonstrating compliance). The licensee's agency-approved streamflow compliance monitoring plan for the New Home Dam Project meets the requirements of the 2009 order, and should be approved.

The Director Orders:

(A) Pursuant to the Order Amending Exemption, Mini-Watt Hydroelectric's streamflow compliance monitoring plan, filed on April 30, 2010, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

Steve Hocking Chief, Biological Resources Branch Division of Hydropower Administration and Compliance

20100802-3011 FERC PDF (Unofficial) 08/02/2010
Document Content(s)
P-6096-012.DOC

STATE OF MAINE PUBLIC UTILITIES COMMISSION

Docket No. 2012-00081

September 25, 2012

MINI-WATT HYDROELECTRIC LLC Request for Certification for RPS Eligibility ORDER GRANTING IN PART AND DENYING IN PART NEW RENEWABLE RESOURCE CERTIFICATION

WELCH, Chairman; LITTELL and VANNOY, Commissioners

I. SUMMARY

We approve in part and deny in part Mini-Watt Hydroelectric's (Mini-Watt) petition for certification of the Mini-Watt hydroelectric facility (Facility) as a Class I new renewable resource pursuant to Chapter 311, § 3(B)(3)(d) of the Commission's rules. The part denied is without prejudice with respect to future submissions of additional information in support of certification under the refurbishment prong or a petition for certification under another vintage prong.

II. BACKGROUND

A. <u>New Renewable Resource Portfolio Requirement</u>

During its 2007 session, the Legislature enacted an Act To Stimulate Demand for Renewable Energy (Act). P.L. 2007, ch. 403 (codified at 35-A M.R.S.A. § 3210(3-A)). The Act added a mandate that specified percentages of electricity that supply Maine's consumers come from "new" renewable resources.¹ Generally, new renewable resources are renewable facilities that have an in-service date, resumed operation or were refurbished after September 1, 2005. The percentage requirement starts at one percent in 2008 and increases in annual one percent increments to ten percent in 2017, unless the Commission suspends the requirement pursuant to the provisions of the Act.

As required by the Act, the Commission modified its portfolio requirement rule (Chapter 311) to implement the "new" renewable resource requirement. *Public Utilities Commission Amendments to Portfolio Requirement Rule (Chapter 311),* Docket No. 2001-391, Order Adopting Rule and Statement of Factual and Policy Basis (Oct. 22,

¹ Maine's electric restructuring law, which became effective in March 2000, contained a portfolio requirement that mandated that at least 30% of the electricity to supply retail customers in the State come from eligible resources, which are either renewable or efficient resources. 35-A M.R.S.A. § 3210(3). The Act did not modify this 30% requirement.

2007) (Order Adopting Rule). The implementing rules designated the "new" renewable resource requirement as "Class I"² and incorporated the resource type, capacity limit, and the vintage requirements as specified in the Act. The rules thus state that a new renewable resource used to satisfy the Class I portfolio requirement must be of the following types:

- fuel cells;
- tidal power;
- solar arrays and installations;
- wind power installations;
- geothermal installations;
- hydroelectric generators that meet all state and federal fish passage requirements; or
- biomass generators, including generators fueled by landfill gas.

In addition, except for wind power installations, the generating resource must not have a nameplate capacity that exceeds 100 MW. Finally, the resource must satisfy one of four vintage requirements. These are:

1) renewable capacity with an in-service date after September 1,

2005;

2) renewable capacity that has been added to an existing facility after September 1, 2005;

3) renewable capacity that has not operated for two years or was not recognized as a capacity resource by the ISO-NE or the NMISA prior to September 1, 2005, and, after September 1, 2005, has resumed operation or has been recognized by the ISO-NE or NMISA as a capacity resource; or

4) renewable capacity that has been refurbished after September 1, 2005 and is operating beyond its useful life or employing an alternate technology that significantly increases the efficiency of the generation process.

The implementing rules (Chapter 311, § 3(B)(4)) establish a certification process that requires generators to pre-certify facilities as a new renewable resource under the requirements of the rule and provides for a Commission determination of resource eligibility on a case-by-case basis.³ The rule contains the information that must

² The "new" renewable resource requirement was designated as Class I because the requirement is similar to portfolio requirements in other New England states that are referred to as "Class I." Maine's pre-existing "eligible" resource portfolio requirement is designated as Class II.

³ In the Order Adopting Rule at 6, the Commission noted that a request for certification can be made at any time so that a ruling can be obtained before a capital investment is made in a generation facility.

be included in a petition for certification and specifies that the Commission shall provide an opportunity for public comment if a petitioner seeks certification under vintage categories 2, 3 and 4. Finally, the rule specifies that the Commission may revoke a certification if there is a material change in circumstance that renders the generation facility ineligible as a new renewable resource.

B. <u>Petition for Certification</u>

On February 16, 2012, Mini-Watt filed a petition to certify its 455 kW Facility located in Orange, Massachusetts as a Class I New Renewable Resource under the refurbishment provision of the Commission's renewable portfolio rules. Ch. 311, § 3(B)(3)(d). The petition states the dam was reconstructed in 1940 after a flood severely damaged the previous dam and that the 175 kW North Powerhouse generating unit ("T1") was installed at that time. The South Powerhouse contains two more generating units, a 120 kW unit installed in 1944 ("T2"), and a new 160 kW unit installed in 2010 ("T3") that replaced a 1944 vintage 120 kW turbine. The petition states the Mini-Watt Facility meets all State and Federal fish passage requirements.

Regarding refurbishment, the petition states the typical life expectancy of a dam is 100 years and 25 years for the equipment. Since September 1, 2005, the Mini-Watt Facility has had \$800,000 worth of project investments, including complete replacement of T3, increased generator and circuit breaker capacity, modernization of the supervisory control and data acquisition (SCADA) system, improvement in the hydraulic actuators and controls, and a new circuit breaker, solid state exciter, and protective relay for T1.

On March 19, 2012, Mini-Watt completed their petition by filing under protective order a detailed list of the project investments. Commission Staff issued a set of follow-up questions on the petition on March 21, 2012, to which Mini-Watt provided answers on March 29, 2012.

As required by our rules, the Commission Staff provided interested persons with an opportunity to comment on the Mini-Watt petition. No comments were filed.

On August 6, 2012, the Commission Staff issued a recommended decision to approve Class I new renewable resource certification for the output of T3, but to deny certification for the output of T1 and T2. Mini-Watt filed reply comments defending their request to certify the output of T1 and T2 as a Class I new renewable resource on August 16, 2012.

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III. DECISION

A. <u>Compliance with State and Federal Fish Passage Requirements</u>

As an initial matter, for a hydroelectric facility to qualify as a new renewable resource, it must meet all applicable state and federal fish passage requirements and cannot exceed 100 MW. Ch. 311, § 3(B). It appears from the record that the Facility does have some fish passage facilities in place. According to Mini-Watt, on the North side of the Facility where T1 is located, downstream fish passage was installed in 2002 and the U.S. Geological Service (USGS) installed an eel trap in 2011. Additionally, Mini-Watt stated that on the South side of the Facility where T2 and T3 are located, downstream fish passage was installed in 2004 and the USGS installed upstream eel passage in 2008. Based upon the record, it appears that the downstream fish passage facilities are operated seasonally, mainly in the spring for out-migrating Atlantic salmon smolts.

In support of Mini-Watt's statements that the Facility complies with all state and Federal fish passage requirements, Mini-Watt submitted the initial December 28, 1984 FERC order granting the Facility an exemption from the licensing requirements contained in Article Part I of the Federal Power Act (29 FERC ¶ 61,356) (1984 FERC Order), the May 5, 2009 FERC Order amending the Facility's exemption to include the changes in the Facility's installed capacity resulting from the T3 replacement (2009 FERC Order), and the August 2, 2010 FERC Order approving the Facility's Streamflow Compliance Plan. Mini-Watt also submitted March 2009 letters from the U.S. Fish and Wildlife Service (FWS) and the Massachusetts Division of Inland Fisheries and Wildlife (MDFW) commenting on the proposed license amendment.

Article 2 of the Facility's 1984 FERC Order requires that the Facility comply with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. It appears from the record that the FWS has imposed stream flow requirements related to the protection of fish and wildlife resources. 132 FERC ¶ 62,084. Mini-Watt provided an updated Streamflow Compliance Monitoring Plan (Updated Streamflow Plan) as part of its license amendment process at FERC, and the Updated Streamflow Plan was accepted by FWS, the MDFW, and the Massachusetts Department of Environmental Protection (MDEP), and was ultimately approved by FERC. 132 FERC ¶ 62,084.

The March 2009 letters from the FWS and MDFW commenting on the proposed license amendment recognized the existing downstream fish passage present at the Facility and did not object to Mini-Watt's license amendment request. Further, the agencies did not indicate that the Facility was out of compliance with state of Federal fish passage requirements. According to Mini-Watt, MDEP did not comment on any fish passage issues associated with Mini-Watt's license amendment request, despite an opportunity to do so.

Based upon the documentation filed in this case, as well as the absence of any indication from recent reviews of the Facility's license amendment by relevant state and Federal agencies that the Facility is out of compliance with state and federal fish passage requirements, we conclude that the 455 kW Facility presently meets all applicable state and federal fish passage requirements.

B. <u>Vintage Requirement</u>

As mentioned above, Mini-Watt is seeking certification under the "refurbishment" vintage category. This vintage category is set forth in both Chapter 311 of the Commission's rules and the RPS statute set forth in Title 35-A, section 3210.

Under Chapter 311, the refurbishment vintage category requires that the new renewable generation facility:

has been refurbished after September 1, 2005 and is operating beyond its previous useful life or is employing an alternate technology that significantly increases the efficiency of the generation process.

Ch. 311, § 3(B)(3)(d). The refurbishment vintage category in the RPS statute has essentially the same wording. 35-A M.R.S.A. § 3210(2)(B-4)(4). To clarify the meaning of refurbishment, the Legislature subsequently enacted an amendment to the refurbishment prong of the vintage requirement to provide a definition of refurbishment. Pursuant to the statutory amendment, "to refurbish" means "to make an investment in equipment or facilities, other than for routine maintenance and repair, to renovate, reequip or restore the renewable capacity resource." 35-A M.R.S.A. § 3210(2)(B-4).

As stated by the Maine Law Court in its recent decision, *Covanta Maine, LLC v. Public Utilities Commission*, the purpose of the refurbishment provision is to encourage the preservation of older existing renewable generation facilities by creating an incentive for owners to make the investments necessary to preserve and extend the useful lives of these older facilities. *Covanta Maine, LLC v. Public Utilities Commission,* 2012 ME 74, ¶ 18 (2012) (Covanta Decision).

Pursuant to the Maine Law Court's analysis in the Covanta Decision, in the course of making its determination regarding whether there has been a refurbishment, the Commission must consider the nature and character of the expenditures to determine whether they were made for the purpose of repair or maintenance or for investment in equipment or facilities. *Covanta*, 2012 ME 74, ¶¶ 17, 19.

Mini-Watt has represented in their petition and supporting documentation that they are seeking qualification under the first prong the refurbishment vintage category: that the resource "has been refurbished after September 1, 2005 and is operating beyond its previous useful life." Mini-Watt has not sought certification under the alternative technology portion of the refurbishment prong.

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1. <u>Refurbishment</u>

In its Petition, Mini-Watt states that it has completed over \$800,000 in refurbishment projects since September 1, 2005 which, as stated above, include the replacement of T3, increased generator and circuit breaker capacity, the modernization of the Supervisory Control and Data Acquisition (SCADA) system for the entire facility, improvements to hydraulic actuators and controls for interface into new control system for T1 and T2, replacement of the T1 circuit breaker for control system compatibility, installation of a new solid state exciter for T1, and installation of a new protective relay for T1. Petition at 3.

In its March 16, 2012 confidential supplement to the Petition, Mini-Watt submitted a detailed, confidential list of the costs and expenditures related to the Facility that were made after September 2005. The overall project title and some of the items included on the list were identified as related to T3. However, no items were identified as related to T1 or T2. In response to the Staff's information request for a breakdown of the capital investments categorized by the turbine to which they applied, Mini-Watt submitted a revised "List of Tax Based Accounting for Capitalized Investments" that showed an allocation of costs to the T1 and T2 turbines based on an equal sharing of certain categories of costs among the three turbines. Mini-Watt indicated that, based on a review of its records, it could not provide more detail with regard to categorizing the costs by turbine. March 29, 2012 Attachment to Response No. 2.⁴

From a physical and engineering perspective, the complete replacement of T3 constitutes a refurbishment to that part of the Facility, but the evidence presented regarding the investments that were made to T1 and T2 after September 1, 2005 is not sufficient to establish that T1 and T2 were renovated, reequipped or restored. The investments that Mini-Watt has attributed to T1 and T2 are the modernization of the SCADA system for the entire facility, improvements to hydraulic actuators and controls for interface into new control system for T1 and T2, replacement of the T1 circuit breaker for control system compatibility, installation of a new solid state exciter for T1, and installation of a new protective relay for T1. As described earlier, Mini-Watt's responses to Staff's questions suggest that the central premise of the project was to refurbish T3, and that the T1 and T2 investments were made to so that those two turbines would be compatible with the systems installed as part of the T3 refurbishment or that it made sense to upgrade the same components for T1 and T2 at the time that those upgrades were made for T3. When asked to provide additional detail on the investments in T1 and T2, Mini-Watt indicated it could not verify the T1 and T2 investments separately from the T3 investments. Since our finding that T3 has been refurbished is based primarily on the wholesale replacement of T3, we do not decide whether modernization of the SCADA system, improvements to hydraulic actuators and controls, replacement of a circuit

⁴ Mini-Watt also submitted information in support of its Petition for Certification related to the value of the facility, but the Commission has not relied upon any comparisons of investment per facility value analyses in coming to this decision in light of the rejection of this type of analysis in the Covanta Decision.

breaker and installation of a solid state exciter and protective relay, standing alone without association with a turbine replacement, is a sufficient basis for a finding of refurbishment. There is insufficient evidence in this record to make such a finding.

In Mini-Watt's reply comments to Commission Staff's recommended decision, Mini-Watt states that T1 and T2 have been refurbished, but that much of the investment occurred before September 1, 2005. However, the certification requirement clearly states that a new renewable resource means a facility that has been "refurbished after September 1, 2005 …" and therefore we do not consider investments that occurred before that date. Chapter 311, § 3(B)(3)(d).

We find that there is a sufficient legal basis in both the renewable portfolio statute and rule for certifying a portion of a renewable generation facility as a new renewable resource while excluding other parts of the facility. The Commission's Order adopting Chapter 311 contains language that contemplates that the entire facility may not be certified as a refurbishment. Specifically, the Chapter 311 Order states that:

"We note that the Legislature specifically included vintage categories that allow the incremental energy of a facility constructed prior to September 2005 to qualify if that energy comes from capacity added *or refurbished* after September 1, 2005." Chapter 311 Order at page 7 (emphasis added).

Maine Public Utilities Commission Amendments to Portfolio Requirement Rule (Chapter 311), Docket No. 2007-391, Order Adopting Rule and Statement of Actual and Policy Basis at 7 (Oct. 22, 2008) (emphasis added).

This language conveys that only the portion of the generation facility or renewable resource that is refurbished after the September 1, 2005 date is eligible for certification as the new renewable resource, rather than the entire renewable generation facility.

2. <u>Operation Beyond the Facility's Previous Useful Life</u>

To be certified as a new renewable resource the resource must be "operating beyond its previous useful life." Mini-Watt states in their petition that while the dam may have an expected useful life of 100 years, the equipment has a useful life of 25 years. Although we do not necessarily accept Mini-Watt's representations regarding the expected useful life of the Facility or the equipment, we find it reasonably likely that the T3 turbine is operating beyond its previous useful life given that the new T3 turbine replaced a turbine that was put in service nearly 70 years ago. While T1 and T2 are also of a similar vintage and therefore presumably also operating beyond their previous useful lives, as discussed above, it is not clear they have not been refurbished.

C. <u>Conclusion</u>

For these reasons, we approve certification of only the output from the 160 kW T3 Mini-Watt hydroelectric facility as a Class I new renewable resource eligible to satisfy Maine's new renewable resource portfolio requirement pursuant to Chapter 311, § 3(B)(3)(d) of the Commission rules. The metering of the output by the 160 kW T3 must be in compliance with GIS NEPOOL Rules, which may include the need for a 3rd party meter reader.

While we deny certification of the output of T1 and T2 as a Class I new renewable resource based upon the evidence before us, our decision is without prejudice and shall not preclude Mini-Watt from submitting a petition for certification of T1 and T2 under another vintage prong, nor does this decision preclude Mini-Watt from submitting a petition for certification under the refurbishment vintage prong provided that Mini-Watt includes in its petition additional information that was not submitted previously that supports a finding of refurbishment of T1 and T2. This additional information, for instance, may take the form of more explicit details of the exact expenditures spent on T1 and T2 and how those investments renovated, reequipped or restored the renewable capacity resource.

Accordingly, we

ORDER

- 1. That the output of the 160 kW T3 be certified as a Maine Class I new renewable resource;
- 2. That the output of T3 be metered in compliance with GIS NEPOOL Rules, which may include the need for a 3rd party meter reader;
- That the output of the 175 kW T1 and 120 kW T2 be denied certification as a Maine Class I new renewable resource without prejudice to future petition under another certification prong or the supply of additional information that clarifies the investments into T1 and T2 in support of Mini-Watt's position that those turbines have been refurbished.

Dated at Hallowell, Maine, this 25th day of September, 2012.

BY ORDER OF THE COMMISSION

<u>/s/ Karen Geraghty</u> Karen Geraghty Administrative Director

COMMISSIONERS VOTING FOR: Welch

Littell Vannoy

NOTICE OF RIGHTS TO REVIEW OR APPEAL

5 M.R.S.A. § 9061 requires the Public Utilities Commission to give each party to an adjudicatory proceeding written notice of the party's rights to review or appeal of its decision made at the conclusion of the adjudicatory proceeding. The methods of review or appeal of PUC decisions at the conclusion of an adjudicatory proceeding are as follows:

Reconsideration of the Commission's Order may be requested under 1. Section 1004 of the Commission's Rules of Practice and Procedure (65-407 C.M.R.110) within 20 days of the date of the Order by filing a petition with the Commission stating the grounds upon which reconsideration is sought.

2. Appeal of a final decision of the Commission may be taken to the Law Court by filing, within 21 days of the date of the Order, a Notice of Appeal with the Administrative Director of the Commission, pursuant to 35-A M.R.S.A. § 1320(1)-(4) and the Maine Rules of Appellate Procedure.

3. Additional court review of constitutional issues or issues involving the justness or reasonableness of rates may be had by the filing of an appeal with the Law Court, pursuant to 35-A M.R.S.A. § 1320(5).

Note: The attachment of this Notice to a document does not indicate the Commission's view that the particular document may be subject to review or appeal. Similarly, the failure of the Commission to attach a copy of this Notice to a document does not indicate the Commission's view that the document is not subject to review or appeal.

STATE OF MAINE PUBLIC UTILITIES COMMISSION

Docket No. 2012-00081

October 15, 2012

MINI-WATT HYDROELECTRIC LLC Certification Compliance for RPS Eligibility PROCEDURAL ORDER

On September 25, 2012, the Commission certified the output of Mini-Watt Hydroelectric's ("Mini-Watt") 160 kW turbine generator 3 ("T3") located in Orange, Massachusetts as a Maine Class I renewable resource. The Commission declined to certify Mini-Watt's T1 and T2 turbine generators as Class I renewable resources.

While T3 has a utility grade meter, for purposes of metering the generation output from the Mini-Watt facility to report to ISO New England, Inc. ("ISO-NE"), the output of turbine generator 1 ("T1") is reported under MSS generator #854 as Orange #1, while the combined output of turbine generator 2 ("T2") and T3 is reported under MSS generator #855 as Orange #2. This information is conveyed to ISO-NE, which in turn conveys it directly to NYSE Blue (formerly APX, Inc.), the operator of the NEPOOL Generator Information System ("GIS"). As T3 is not separately metered as an MSS generator, NYSE Blue requires Commission approval of the meter data output from T3 in order to register renewable energy credits ("RECs") in the NEPOOL GIS.

Accordingly, the Commission orders Mini-Watt to implement the following compliance approval process for the Class I certified output of T3:

- Mini-Watt shall file quarterly reports with the Commission that include the monthly generation data from T3 and the percentage calculation that should be applied to the total MSS generator #855 (Orange #2) metered quarterly generation output for the purposes of determining the quantity of T3 Maine Class I certified output generated for the quarter. The generation data and calculation of the percentage will be confidential subject to the Protective Order on this matter to be issued in this case.
- With exception for the second quarter of 2012, each quarterly report shall be filed at least 30 days prior to the date on which approval of the quarterly REC generation is due.

The generation data and calculated percentage will be considered approved by the Commission, unless, within 25 days after the quarterly report is filed, the Commission Staff issues a procedural order indicating that the Commission seeks to further investigate or challenge the information contained in the filing. This quarterly reporting will continue until such time that 1) T3 becomes a separately metered resource on the ISO-NE system, 2) T2 becomes certified as a Maine Class I renewable resource, or 3) there is another material change to the Mini-Watt facility or to the NEPOOL GIS reporting process that renders this quarterly reporting unnecessary.

BY ORDER OF THE PRESIDING OFFICER

Grantee: Mini-Watt Hydroelectric LLC Project Name: Mini-Watt Hydroelectric Improvements Milestone 1 – Section 2 Photos of site conditions before project start



Turbine T3 in background



Turbine T3, governor and wicket gate operator

MINI-WATT HYDROELECTRIC IMPROVEMENTS PROJECT

Small Hydropower Initiative

Hydropower Project Assistance

Date: May 2010

PROGRESS PHOTOS

Prepared For:

Wholesale Generation Project Assistance Solicitation (Solicitation No. 2008-SHI-02) Massachusetts Technology Collaborative Innovation Center 73 North Drive Westborough, MA 01581-3340

Submitted By:

Mini-Watt Hydroelectric LLC 480 Hampden Street, P.O. Box 867 Holyoke, MA 01041-0867



Draft Tube 1 (concrete embed) Delivery to Shop



Draft Tube 2 (extension) Delivery to Shop



Roof Removal



Generator Removal



Turbine Removal



Generator Foundation Removal



Generator Foundation Removed



Slab Removal



Finished Opening after Slab Removal



New Turbine Delivery to Shop



Draft Tube 1 (concrete embed) Installed



New Turbine Installation at Site



New Turbine Set in place



Turbine Installation



Draft Tube 2 (extension) Installation by Divers



Generator Installation



Photo of Complete Installation



Photo of Complete Installation

MINI-WATT HYDROELECTRIC IMPROVEMENTS PROJECT

Small Hydropower Initiative

Hydropower Project Assistance

Date: Tuesday, November 30, 2010

Commissioning Report

Prepared For:

Wholesale Generation Project Assistance Solicitation (Solicitation No. 2008-SHI-02) Massachusetts Technology Collaborative Innovation Center 73 North Drive Westborough, MA 01581-3340

Submitted By:

Mini-Watt Hydroelectric LLC 480 Hampden Street, P.O. Box 867 Holyoke, MA 01041-0867

Mini-Watt Hydroelectric Commissioning Report

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Section 2	Inspe	Inspection Process and Findings				
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Section 5 Warranty Letter

Commissioning Members

Stephen Fisk O'Connell Energy Group Steve Berry O'Connell Energy group Mark Mancino O'Connell Energy Group Ken Britt MRB Controls Alfred Patzig Hydro Turbine Systems Inc

Section 1

Introduction

Commissioning is the process of ensuring that all systems are designed, installed, functionally tested and capable of being maintained and operated according to the approved design and owners operational needs. This report has been formatted to address these requirements for the Mini-Watt Hydroelectric Improvements Project that included the replacement of the 120 kW propeller/generator set with new 160 kW Kaplan unit and installing new controls to accommodate the new Kaplan unit operation and integration into multi-turbine operation.

The commissioning report includes the following sections: Section 2 Inspection Process and Findings, Section 3 System and Component Testing Process and Findings and Section 4 Initial System Performance Findings all in accordance with the requirements of the Funding Agency for this project.

This report documents the inspections and procedures used to demonstrate that the system has been properly installed and commissioned.

General Project Description

The project is located at the New Home Dam in the center of Orange, MA. The facility consists of two powerhouses, gatehouse and dam with three turbine generator sets with total installed capacity of 455 kW. The facility is interconnected with the National Grid Utility and all energy produced is provided to Massachusetts Utilities. The entire project including ownership, energy production and consumption is within the ISO-NE control area.

Project Site and Setting:

- The New Home Dam is the first dam on the Millers River located upstream from the confluence of the Millers and Connecticut Rivers.
- The most immediate upstream dam is located at Starrett Tool Manufacturing facility. There are no downstream dams.
- The upstream USGS Gage is the Millers River at South Royalston, MA. The downstream USGS Gage is the Millers River at Erving, MA.
- The facility's principle features include an 8.5 foot high, 87 foot long dam with a reservoir surface area of 106 acres and storage capacity of 530 acre-feet. The facility has two (2) powerhouses on opposite banks of the river indentified as north and south. The North Powerhouse receives the reservoir water via a 10 foot wide, 108 foot long intake flume. One (1) Leffel Z turbine with 175 kW synchronous generator is housed in the North Powerhouse. Water is discharged back to the river via 16 to 30 foot wide, 120 foot long tailrace. The South Powerhouse receives the reservoir water via a 40 foot wide, 100 foot long intake flume. One (1) Leffel A turbines with 120 kW synchronous generator and one (1) (new)

Mini-Watt Hydroelectric Commissioning Report

Ossberger/HSI double regulated Kaplan turbine with 160 kW induction generator are housed in the South Powerhouse. Water is discharged back to the river via a 40 foot wide, 200 foot long tailrace. Total installed capacity is 455 kW for both North and South Powerhouses. The general facility layout is as shown below:



<u>Section 2</u> <u>Inspection Process and Findings</u>

Pre-Construction Phase Inspections:

Prior to manufacturing systems and components shop drawings were submitted, reviewed, documented and dimensions verified in the field to confirm that systems and components would fit in the existing facility. After shop drawings were reviewed and approved they were distributed to the contractor for use in renovations at the facility. Copies of approved shop drawings and plans were maintained and updated throughout the construction project and were placed in the Operation and Maintenance Manual. Two copies of the Operation and Maintenance Manual are maintained – one on site and one in the home office of O'Connell Energy Group in Holyoke, MA.

The turbine/generator components were inspected and tested prior to shipment at the manufacturer facilities. Copies of those reports are included in the Operation and Maintenance Manual.

During construction shop drawings and plans were kept on site and field conditions were confirmed before, during and after field work. Construction Phase Inspections included weekly on-site project meetings that were conducted throughout the construction/installation phase of the project. Additional as-needed on-site inspections were also conducted for review of field conditions.

Disassembly & Removal was completed by Daniel O'Connell's Sons, design/build contractor for the structural modifications – no issues reported.

Dimensional layout was completed by Daniel O'Connell's Sons, design/build contractor for the structural modifications, and O'Connell Energy Group – no issues reported.

Reinforcing Steel Inspection was completed by Daniel O'Connell's Sons, design/build contractor for the structural modifications, and O'Connell Energy Group – no issues reported.

Prior to pouring concrete with any embedded items O'Connell Energy Group inspected installation – no issues reported.

Concrete Cylinders were taken for each concrete pour and tested for strength – no issues reported.

Manufacturer Representative Inspection occurred on March 4, 2010 during the equipment installation – no issues reported with the installation.

Mini-Watt Hydroelectric Commissioning Report

Manufacturer representative was present for the Pre-Start up and Start up Phases of the commissioning process. Manufacturer Check Lists were completed and signed off. These Check Lists are included in Section 3 and 4 of this report.

Section 3

Component Testing Process and Findings

Pre-Start up Phase Inspection Checklists was provided by Hydro Turbine Systems Inc (HTS). HTS witnessed the pre-start up work performed by O'Connell Energy Group. Check off list is included below.

Pre-Start Up Inspection Check List

Inspection prior to first start-up: following should be verified:

Inspection	Description	Date	1
Item	Description	Completed	
	Radial and axial run-out of journal and thrust bearing (upper bearings below	6/10/10	5/3
1	vertically oriented hydraulic cylinder) as illustrated on drawing 2362-60 and	AX ,005	MM
	described on page 4 of 13 of the "2362O&M HSI KAPLAN".	140.012	1
	First shock avial run-out by placing people of measuring instrument vertically from	6/10/10	51
	ton - tolerance 001" (=0.03mm) Adjustment screws (threaded rods) underneath	ASUSTER	MA
2	of the set ring (rotating) located below the hearing bousing (not rotating), which	AV.0015	
	should be adjusted, in case the axial run-out tolerance field is exceeded	01	
		6/10/10	ł
	Second check radial run-out by placing needle horizontally from the side –	6/10/10	9 B
3	tolerance .001" (=0.03mm). Adjustment screws, positioned radial around the set	Apsusie	MM
	ring, should be adjusted in case the radial run-out tolerance field is exceeded.	RAD	
A	Po sheak avial run out in case adjustments had to be made AF	GIGLIO	50
4	Check vortical position of hydraulic cylinder using a liquid level. In case an	C/10/10	
5 8	adjustment is necessary slightly loosen the hex nuts on ton of the support heam	61.010	190
	adjustifient is necessary, signify loosen the next facts on top of the support pears,	OK	M
	Check clearance between runner tins and throat ring are uniform. Adjustment to	6/10/10	1.
<u>د</u>	be done by the "Stellstangenholzen" (Set holt) that protrudes out of the turbine	0114110	SB
U	chaft UPETREAM 1012 - DOWN YTREAM 1028		10
7	Re-check vertical position of hydraulic cylinder.	6/10/10	
		6/10/10	01
	Check if all wicket gates are closing uniformity. If necessary, loosen all screws at the	01.01.0	20
8	levers, place a beit (as used to secure the load on trucks) an around the wicket	olt	1
	gates and tighten. Thereafter, tighten all screws at a forque of 195 Min (=144 Huss).	011	
0	Make sure all transportation shims and the safety rods have been removed	6/10/10	58
9	wake sure, an transportation simils and the safety rous have seen emoved.	OM	101
	Check concrete work. Any edges, caused by misaligned framing boards, that	6/10/10	90
10	protrude inside the scroll case as well as the whole intake chamber, should be	010	In
	ground flat and even.	on	
11	Verify concrete is sealed (air and water tight) between embedded turbine ring and		
	floor.	14/4	c .
12	Check all hydraulic lines between HPU and the hydraulic cylinders are connected to	6/10/10	713
	the proper ports and connections are tight.	ori	GA
13	Fill HPU with hydraulic oil per specification.	6/10/10	101
14	Install belt and verify belt tension as per suppliers instructions. 961 66% 011	6/10/10	701
15	Check grease system for correct connections of hydraulic lines.	0/10/10	79
/Itness	HA- A. A. I. I.		
wner rep	from 11/18ung 6/10/10.		
upplier rep	- 414		
ech rep	IMAND INTANALIS 6/ (0/10		

Mini-Watt Hydroelectric, Orange, MA, USA Pre-Start-up Inspection 6/14/2010 Present: Alfred Patzig, Hydropower Turbine Systems, Inc. (HTS-Inc) Stephen Fisk, O'Connell Energy Group Steve Berry, O'Connell Energy Group Mark Mancino, O'Connell Energy Group Ken Britt, MRB Controls

- 1. Compared replacement emergency closing arm with original emergency closing arm. New arm is slightly larger in outside dimensions. All mating parts cleaned and arm was replaced and bolts tightened to specified torque. Gates were operated and weights were lifted with no slippage. Emergency closing time was measured at about 5 seconds.
- 2. Runner blade tip clearances were discussed. Adjusting bolts were pointed out for adjustment. OEG measured tip clearances before belt tensioning and noted uniform clearance. After belt tensioning far side from generator was .0012 and near side was .0028. Adjustments were made with blades closed to be uniform .0020.
- 3. Wicket gate hydraulic actuator did not stoke to full 10.24 inches. Angular position sensor was adjusted for 0% (fully closed) and 100% stroke (hydraulic actuator length 10.24").
- 4. Runner hydraulic actuator checked for 0 and 100% position (length 3.11")
- 5. Belt tensioning was inspected by viewing and measuring marks on belt. Belt was retensioned on 10/5/10 prior to operational testing.
- 6. Head gates opened and water box filled small leak detected and construction joint between wall and floor on parking lot side of building this joint sealed itself in time. Currently no leaks through the concrete. No leaks detected around turbine.
- 7. Water box drained down and inspected for debris no debris was present so water box was refilled and turbine was operated via controls and the blade/gate schedule. Gates opened to 5, 10, 15 and 30%. Turbine began rotation at 30%. Turbine was operated to normal operating speed 242 RPM. Bearing temperatures were recorded lower generator bearing 98 degrees and upper generator bearing 75 degrees. Generator bearing squealed for a short period but sound stopped. Vibration analysis of the turbine and generator was conducted on November 19, 2010 and will be submitted to be included in Section 4A at a later date.

Section 4

Initial System Performance Findings

Start-up Phase & Commissioning Checklist was provided by Hydro Turbine Systems Inc (HTS). The completed checklist is included herein.

Although not required by the manufacturer O'Connell Energy Group uses vibration monitoring as a tool in preventative maintenance at all the facilities that it operates. A baseline vibration monitoring has been put into place and the baseline monitoring is included in Section 4A.

Generator was tested at the factory and that report is included in Section 4B.

The facility is operated by a Programmable Logic Controller (PLC) for system control and data acquisition. The data acquisition information was used during the startup and commissioning of the improvements and portions of the record are included in Section 4C to demonstrate that actual performance is comparable to the expected performance of the improvements. The improvements at the site increase electrical production through two (2) key components:

- 1. The new double regulated Kaplan hydroelectric turbine identified as T3 has a greater range of operation with increased efficiency throughout the operating range over the replaced propeller type turbine. The Kaplan will allow increased production at low flows due to its design and at high flows due to and increase in turbine/generator capacity.
- 2. PLC improvements for sequencing of the three turbine configuration.

Component 1 Kaplan Turbine Performance

During the month of November the PLC data was compiled and the data for the new T3 turbine was isolated and sorted. Data was evaluated throughout the entire flow regime based upon gate settings - low gate settings (low flow) to high gate settings (high flow). The flow through the turbine was calculated using the fundamental power formula for hydroelectric turbines based upon the actual net head and power output as monitored and metered by the PLC and utility grade revenue meter. The actual performance of the original installed equipment was recorded before removal and that data was placed in a look up table for comparison to the data recorded for the new turbine. Sample pages of the generation report is included below showing the energy production of the new turbine, the energy production. Over 8,000 data points were recorded and used in this file for the month of November. This report format was previously agreed to as the basis for the reporting of the increased generation to the Production Tracking System (PTS). The project was registered with the PTS on May 21, 2010. The first production value will be submitted for the period ending 11/30/10.

Component 2 PLC Improvements

The second improvement component is the upgrade to the PLC to include all three turbines at the site. Prior to the improvements Turbine T1 located in the North Powerhouse was operated in a semi automatic mode requiring manual start with level control and automatic shutdown. With the new configuration T1, the second most efficient turbine at the facility, will be automatically started when river flows increase above the maximum flow that can be used by the new T3 turbine. T2 the least efficient of the turbines will be the last to be turned on and the first to be turned off. The attached data sheet in Section 4C provides the end of the month data when all three units were on line. The data is summed for the period of the record and totaled at the bottom of the page that shows an approximate net increase in generation of 37,000 kWh for the month of November.

Operations Summary

The first month of data compiled and analyzed indicates that the new turbine and upgrade controls are performing as expected.

Commissioning Check List

Commissioning Item	, Description .	Date Completed
1	Verify control system is programmed and working.	10/15/10
2	Check generator connections and rotation.	10/15/10
3	Check cable connections to utility grid.	10/15/0
4	Check switchgear, breaker and generator protection. $V \cdot \rho $ (1	10/15/0
5	Energize system. V-oK	10/15/10
6	Operate both wicket gate and runner blade hydraulic cylinders full stroke. Verify OPEN/CLOSE commands coincide with correct position. See Blade/Gate relationship below. $V \circ G$	10/15/10
7	Assure, no air in hydraulic lines. ノロバ	10/15/10
8	Opening and closing speed of cylinders set to approx. 25 sec forfull stroke, Emergency closing set at 5 secs. $\mathcal{U} o \mathcal{I} $	10/15/10
9	At emergency closing conditions, the runner blades should not be closing but left in same position or even fully opened to reduce run-away speed. $V \delta(\zeta)$	10/15/10
10	Cylinder feed-back signal – adjust the potentiometers to 020 (or 420 mA) at 0 and 100% cylinder stroke.	
11	Check speed sensor position and location.	
12	Verify grease system is working and has been tested as described above. ν off	11/22/10
13	If assured, that the whole system is in working condition, the gate can be opened to water the intake chamber and check for any leaks. $V \circ C$	10/15/10
14	Operate wicket gates and turbine runner blades at variouspositions and run unit at low speed for some time to inspectbearings and belt drive. $\mathcal{V} \circ \mathcal{K}$	TSCARING MOISCY SCARING MOISCY 10/15/10
15	Adjust emergency shut-down at 110% nominal speed.	10/15/10
16	Check gravity closing system (weights) is functioning. U 617	10/15/10
17	If satisfied that all equipment is working properly, generator can be connected to grid and opening set to desired flow. $U \delta K$	10/15/10
18	Verify normal closing and emergency closing for all intended shut-down signals.	11/23/10 SEC 11/23/10 OPENATION
By:	mark mound	1-2137

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11/23/10

Operating Check List

Commissioning Item	Description	Date Completed	
Operation:	Normal Start-up:		1
1	Set Runner blade opening to approx. 30%.	11/22/10]
2	Start Wicket gate opening slowly until nominal generator speed is reached. $V \sigma f$	11/22/10	
3	At 100% speed, connect generator to utility grid.	11/22/10	
4	Load turbine to desired flow by further opening of wicket gates.	11/22/10	
Operation:	Normal Shut-down:	-	GATES CLOSE .
1	Close Wicket gates and Runner blades together. $V_{\delta I}$	11/22/10 .	UNITSHUTS NAMEN THEN
2	Generator stays connected until Reverse power relay (device 32 existing by owner) is activated.	11/22/10	BLADES CLOSE
3	Generator disconnects from grid and turbine closes fully. Vor	11/22/10	
Operation:	Emergency shut-down:	·····	•
1	The wicket gates should be closed within a few seconds at emergency condition. \mathcal{V} & \mathcal{U}	(5-50000A 11/22/10	s)
2	Runner blades open fully or stay in current position. V & K	11/22/10	
3	In the unlikely case of a board stuck in between the wicket gates, one of the gates will remain partially open due to the torque limiting clutch, which is installed between wicket gate shaft and guide ring lever to prevent damage, causing an over speed condition.	NOT TE	\$T&#</td></tr><tr><td>4</td><td>The resulting over speed is reduced at partially or fully closed runner.</td><td>NOT TES</td><td>TEP</td></tr></tbody></table>

Emergency shut-down conditions: Overspeed 11/22/10 V of tuility Fault 11/22/10 V of the broken belt 11/22/10 V of the b

Ì Normal shutdowns over temperature RTD's (1/23/10 VOIT loss of lubrication system alarm 11/23/10 VOK ALARMS BUT NO SHILT POWN HPU low oil 11/23/10 V 017 HPU high oil temp 11/23/10 Volt 11/23/10 VOH - SEMERGENCY SHUT DOWN NOT tracking of belt Mars Mornaino-11/23/10

By:

<u>Section 4A</u> <u>Vibration Analysis Baseline & Test Report</u>

Mini-Watt Hydroelectric Commissioning Report

<u>Section 4B</u> <u>Generator – Manufacturer's Test Report</u>

Mini-Watt Hydroelectric Commissioning Report

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<u>Section 4C</u> Operating System Recorded Data

Mini-Watt Hydroelectric Commissioning Report

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<u>Section 5</u> <u>Warranty Letter</u>

Mini-Watt Hydroelectric Commissioning Report

HYDROELECTRIC SYSTEM LIMITED WARRANTY

System Owner:Mini-Watt Hydroelectric LLCSystem Location:Mini-Watt Hydroelectric LLC South Station, 16 West River Street REAR, Orange, MassachusettsWarranty Period:Five (5) years beginning on commencement of commercial operation or August 1, 2010, whichever is
earlier.

For the Warranty Period indicated above, O'Connell Energy Group ("OEG"), a division of O'Connell Development Group Inc., a Massachusetts corporation, warrants to the System Owner noted above (the "Owner") that OEG will, subject to the Terms, Conditions and Limitations set forth below, repair any defect in material, equipment or workmanship in the Hydroelectric System defined below (the "System").

TERMS, CONDITIONS AND LIMITATIONS

1. The System consists of the following:

Manufactured Equipment for Hydroelectric Turbine Identified as "T3":

- One (1) 160kW HIS TD4-112
- One (1) Hydraulic Power Unit

One (1) Electrical system including all necessary wiring, fuse disconnects with adequate fault duty and the standard electrical/utility interface for connection of the system in parallel with utility systems.

- 2. In the event a defect should occur in the System:
 - a. The Owner must give written notice to OEG within thirty (30) days of any occurrence of a defect. By so notifying OEG, the Owner authorizes OEG or its designee to investigate the defect;
 - b. If upon investigation OEG reasonably determines that the defect is not excluded under the Terms, Conditions and Limitations set forth in this Limited Warranty, the Owner's sole and exclusive remedy and OEG's liability will be limited to the repair of the defect, which in OEG's sole discretion, may include the replacement of any defective part of the System;
 - c. Should the investigation reveal that the defect is excluded under the Terms, Conditions and Limitations, the Owner shall, upon OEG's demand, be responsible for payment of OEG's reasonable inspection costs; and
 - d. Any dispute, controversy or claim between the Owner and OEG concerning this Limited Warranty shall be submitted to binding arbitration. Any party desiring to institute an arbitration proceeding hereunder must, within thirty (30) days prior to instituting an arbitration proceeding, file with the other party a Demand for Arbitration, which Demand must include the identity of the issues being submitted to arbitration. During this thirty (30) day time period, the parties must meet for the purposes of choosing an arbitrator to hear the dispute. If in the event the parties are unable to agree upon the appointment of an arbitrator, a retired justice of the Hampden County Superior Court shall be selected by the Hampden County Mediation/Arbitration Service to hear this dispute. The arbitration proceeding shall be governed by the rules set forth by the arbitrator, and a decision of the arbitrator shall be final and binding upon all parties. Within thirty (30) days after the entry of an arbitration award by the arbitrator, the provailing party shall be paid the entire amount of the award by the non-prevailing party. The parties to the arbitration proceeding shall pay, in equal amounts, the fees and costs of the arbitrator, unless the arbitrator determines others in its decision.
- OEG shall have no obligation under this Limited Warranty unless and until OEG has been paid in full for all
 materials, supplies and services with regard to purchase and installation of the System.
- 4. OBG shall have no obligation under this Limited Warranty, or any other liability, now or in the future, if a defect in the System is caused by or results from, in whole or in part, any of the following:
 - a. Accident, abuse, improper operation or negligence by the Owner or its employees, agents, contractors or invitees or by trespassers;
 - b. War, riots, civil commotion, flood, fire, storm, earthquake, volcanic eruption, any act of God;

- c. Owner's failure to provide scheduled maintenance for the System in accordance with guides or instructions delivered to the Owner prior to or at the time of commencement of commercial operation;
- d. Owner's failure to keep the System reasonably protected from the weather or elements;
- e. Any unauthorized alteration, addition to, or substitution or replacement of, any part of the equipment comprising the System; or
- f. The Owner's failure to give proper notice as set forth in paragraph 2(a) above.
- This Limited Warranty shall be transferable subject to OEG's inspection of the System, OEG's written approval, which shall not be unreasonably withheld, conditioned or delayed, and the payment by Owner of an inspection and transfer fee of \$750.00.
- 6. During the Warranty Period, OEG shall have access to, and may inspect at reasonable times and upon reasonable notice to Owner, the System and Owner's records relating to the System's operation, load profiles and maintenance service. OEG may use all such information for further design, engineering and technical development of other hydroelectric projects
- OEG's failure to enforce any of the terms or conditions stated herein shall not be construed as a waiver of such provision or of any other terms and conditions of this Limited Warranty.
- All notices to OEG required hereunder shall be sent either certified mail, postage prepaid, return receipt required, or by overnight delivery, addressed as follows:

O'Connell Energy Group 57 Suffolk Street Holyoke, MA 01040 Attention: Stephen Fisk, Project Manager

9. This Limited Warranty shall be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts without regard to conflict of laws.

OEG DOES NOT WARRANTY PRODUCTS NOT INCORPORATED BR OEG INTO THE SYSTEM AND OEG SPECIFICALLY DISCLAIMS LIABILITY UNDER ANY THEORY OF LAW ARISING OUT OF THE INSTALLATION OR PERFORMANCE OF, OR DAMAGES SUSTAINED BY, PRODUCTS NOT INCORPORATED BY OEG WITH REGARD TO IN THE INSTALLATION OF THE SYSTEM. THIS LIMITED WARRANTY SUPERSEDES AND IS IN LIEU OF ALL OTHER WARRANTIES OR GUARANTEES WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS LIMITED WARRANTY SHALL BE THE OWNER'S SOLE AND EXCLUSIVE REMEDY AGAINST OEG, AND OEG SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR DAMAGE TO THE BUILDING HOUSING THE SYSTEM. THIS LIMITED WARRANTY CANNOT BE AMENDED, ALTERED OR MODIFIED IN ANY WAY EXCEPT IN WRITING SIGNED BY THE PARTIES HERETO.

ONNELL ENERGY GROUP hen Fisk General Manager

AGREED AND ACCEPTED

MINI-WATT HYDROELECTRIC LLC By: O'Connell Development Group Inc., Its Member and Manager

By: <u>James N. XW/UM Treasurer</u> James N. Sullivan, Treasurer Date: 7.12.10