



May 31, 2014

Mr. Nick Utrup  
Twin Cities Field Office  
U.S. Fish and Wildlife Service  
4101 American Blvd East  
Bloomington, MN 55425

Ms. Cheryl Laatsch  
Statewide FERC Coordinator  
WI Dept. of Natural Resources  
N7725 Hwy 28  
Horicon, WI 53032

**RE: Addendum (May 2014) to the Water Quality Monitoring Plan  
Per License Article 404 for the Oconto Falls (Lower) Hydroelectric Project –  
FERC Project #2689 NEW Hydro, LLC**

Dear Mr. Utrup and Ms. Laatsch:

Enclosed is the Addendum (May 2014) to the Water Quality Monitoring Plan Per License Article 404 for the Oconto Falls (Lower) Hydroelectric Project – FERC Project #2689, NEW Hydro, LLC.

The Addendum identifies the monitoring equipment that will be used, report formats furnished with written submissions to agencies, and the designated contact person for each agency involved. Monitoring will begin on July 1, 2014 and continue through September 30, 2014 for the monitoring year.

Should you have any questions, please do not hesitate to contact Mr. Jereme Klassy at the Eagle Creek Renewable Energy Midwest Operations office at 920-293-4628, ext. 322 or by e-mail at [Jereme.klassy@eaglecreekre.com](mailto:Jereme.klassy@eaglecreekre.com).

Sincerely,  
Eagle Creek Renewable Energy  
Agent for Licensee

for Scott Klabunde  
Senior VP of Operations

Midwest Operations  
116 N. State Street, PO Box 167  
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North East Operations  
613 Plank Road  
Forestburgh, NY 12777 USA  
Tel: (845) 856-3920



Attachment: Addendum (May 2014) to the Water Quality Monitoring Plan  
Per License Article 404  
Oconto Falls (Lower) Hydroelectric Project (P-2689)

Cc: Ms. Kimberly D. Bose, Secretary –FERC  
Mr. John Zygai, P.E. – CRO  
Midwest Operation: File  
14-05-31\_LC\_OFLW\_submittal Agencies WQMP 2014 Addendum

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**ADDENDUM**

(May 2014)

**Water Quality Monitoring Plan  
Per License Article 404**

For

**Oconto Falls (Lower) Hydroelectric Project  
FERC Project #2689  
NEW Hydro, LLC**

Oconto River, Oconto County, State of Wisconsin

Submitted By:  
Eagle Creek Renewable Energy  
Midwest Operations  
116 North State Street, P.O. Box 167  
Neshkoro, WI 54960

## **Introduction**

This Water Quality Monitoring Plan for the Oconto Falls (Lower) Hydroelectric Project, FERC Project # 2689, City of Oconto Falls, Oconto County, Wisconsin has been written in generic terms in order to encompass technological advancements and potential agency personnel changes during the 30-year term of license. Therefore, current equipment manufacturers, equipment model specifications and reference to specific Wisconsin Department of Natural Resources (WDNR), United States Department of the Interior – Fish and Wildlife Service (USFWS) and Federal Energy Regulatory Commission (FERC) agency personnel have purposely been excluded from this plan.

Prior to the execution of a Water Quality Study, the licensee will refine the Water Quality Monitoring Plan in consultation with the WDNR and the USFWS. The plan refinement will specify the sampling equipment to be used during the study period and the specific agency personnel to whom data and report submissions will be sent. It will be submitted in the form of an addendum to the Water Quality Monitoring Plan and will be sent to all designated agency personnel on or before May 31 of the sampling year in order to provide timely notice of the sampling event and reporting requirements.



Water Quality Monitoring Plan  
Per License Article 404

For the  
Oconto Falls (Lower) Hydroelectric Project  
FERC Project no. 2689  
Oconto River, Oconto County, State of Wisconsin

Licensee  
North East Wisconsin (NEW) Hydro, LLC

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**Requirement for Studies:**

The Federal Energy Regulatory Commission (FERC), has stipulated as a requirement of the Oconto Falls (Lower) Hydroelectric Project License Article 404, issued May 11, 1994, that a Water Quality Study shall be performed beginning Five (5) years after license issuance and once every Five (5) years thereafter for the Thirty (30) year term of license. Article 404 also requires that a monitoring plan should be filed with the Commission within Four (4) years of license issuance.

**Purpose of Studies:**

The Licensee state that "the purpose of the monitoring plan is to ensure that stream flows downstream of the project tailrace, maintain the state minimum DO concentration standard of 5.0 milligrams per liter, a maximum water temperature of 89 °F, and a pH between 6.0 and 9.0 units in the Oconto River at the same locations as the DO monitoring".

## **Study Sampling Periods:**

Study sampling will be conducted July 1, 1999 through September 30, 1999 and every 5<sup>th</sup> year interval thereafter for the term of the license. The July through September sampling period represents the typical annual period of minimum dissolved oxygen levels in the Oconto River resulting from a combination of high ambient temperature, low river flow, and aerobic oxygen consumptive processes.

## **Study Design:**

### Sampling Protocol:

Sampling protocol will be consistent with the 1990 pre-licensing Water Quality Study data Collection protocol as outlined in the June 23, 1993 letter from Mr. Al Stranz, Wisconsin Department of Natural Resources (WDNR) to Ms. Lois Cashell, Secretary, FERC – Page 7, Section 8(d).

### Monitoring Parameters (Reservoir):

- 1: Dissolved Oxygen Concentration
- 2: Water Temperature
- 3: Stream Flow
- 4: Time of Day

### Monitoring Parameters (Tailwater):

- 1: Dissolved Oxygen Concentration
- 2: Water Temperature
- 3: pH
- 4: Stream Flow
- 5: Time of Day

### Reservoir Sampling:

One (1) reservoir sampling event per week will be conducted for dissolved oxygen concentration and water temperature in a surface to bottom profile at one (1) meter intervals at one (1) pre-determined location representing the maximum depth in the reservoir.

Sampling will be performed manually from a boat with position determined by two (2) measured lines attached to marked locations on opposing embankments and / or structures to provide location repeatability for each of the weekly samplings. Reservoir surface to bottom depth will be recorded during each sampling period at

Reservoir Sampling continues:

the pre-determined sampling location. Dissolved oxygen concentration and water temperature will be sampled with an approved and properly calibrated electronic sampling device at one (1) meter depth profile intervals including a reading at 100mm above the bottom of the reservoir. Power production log data for the sampling day will be obtained from the Oconto Falls Upper Hydroelectric Project (P-2523) and Oconto Falls Lower Hydroelectric Project (P-2689) in order to calculate river flow volume during the sample day.

Tailwatering Sampling:

Continuous Thirty (30) Minute interval sampling of dissolved oxygen concentration, pH, and water temperature will be taken in the river immediately below the project tailrace.

Sampling will be performed by an approved and properly calibrated self-contained submersible sampling and data-logging device placed in a location representative of the release of water in the tailrace. The monitoring device will be located downstream of the dam, approximately Ten (10) feet from the South embankment of the Oconto Falls Municipal Sewage Treatment Facility discharge pipe. (This location represents the placement location selected by Laura J. Herman, WDNR Water Quality Specialist, for the Hydrolab Data Sonde 1 deployment used in the 1990 pre-licensing Water Quality Study). The sampling/logging device will include a sensor array containing standard dissolved oxygen, pH, and water temperature sampling probes. The logging device will be programmed to record dissolve oxygen concentration, pH, and water temperature measurements at Thirty (30) minute intervals for the continuous period from July 1 through September 30. A maintenance check will be performed on the sampling / logging device once per week. This check will include removal of any accumulated debris and aquaculture, verification of device placement, verification of operation and device calibration. Maintenance procedures are based on the use of presently available equipment. Future maintenance activities could differ due to changes in equipment development. Power production log data for the sampling period will be obtained from the Oconto Falls Upper Hydroelectric Project (P-2523) and Oconto Falls Lower Hydroelectric Project (P-2689) in order to calculate river flow volume during the sampling period. Accumulated sampling data will be downloaded from the sampling / logging device once per month (during the first week of the following month) for intermediate analysis.

## **Equipment Assignment:**

The following equipment has been acquired and is scheduled to be used for the July 1 thru September 30, 2014 water quality study at the Oconto Falls Lower Hydroelectric project – FERC Project #2689.

**Reservoir:** Hach HQ40d series portable meter with a detachable cable and Probe with One (1) Meter markers on the cable. The probe contains both Dissolved Oxygen and Temperature sensors. This equipment will be used to obtain weekly surface to bottom 1-meter profile data in the reservoir. The meter was calibrated in late May 2014 and retains calibration for 1 year per Hach/Hydrolab specifications.

**Tailrace:** Hach/Hydrolab MS5 Mini Sonde with the capability to measure and record Dissolved Oxygen, Temperature, Conductivity, and pH as well as Date, Time, and Battery Voltage. The Hach/Hydrolab Mini Sonde will obtain and store continuous 30 minute interval Tailrace sample data during the study. The Sonde will be checked over, cleaned, batteries changed as needed, and data downloaded every 2 weeks. The unit will be calibrated at least monthly for pH and Conductivity and approximately every 8 weeks for Dissolved Oxygen. The calibration guidelines were obtained from Hach/Hydrolab company representatives. The equipment was inspected and factory calibrated in May 2014.

## **Report Formats:**

In addition to the printed reports, data will be furnished on a CD in Microsoft Excel and Microsoft Word Formats.



**Agency Contact Personnel:**

All Water Quality Study correspondence, reports, and any notifications will be directed to the following agency personnel:

**U.S. Fish and Wildlife Service**

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**Federal Energy Regulatory Commission:**

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