Wisconsin Electric
A WISCONSIN ENERGY COMPANY

Wisconsin Electric
231 W. Michigan
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Phone 414 221-2345

April 11, 2000

ORIGINAL

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject:

Way Dam	FERC No. 1759-036	Michigan
Hemlock Falls	FERC No. 2074-007	Michigan
Lower Paint	FERC No. 2072-008	Michigan
Peavy Falls	FERC No. 11830-000	Michigan
Michigamme Falls	FERC No. 2073-008	Michigan
Twin Falls	FERC No. 11831-000	Wisconsin and Michigan
Kingsford	FERC No. 2131-020	Wisconsin and Michigan
Big Quinnesec Falls	FERC No. 1980-009	Wisconsin and Michigan

Dear Mr. Boergers:

In correspondence dated September 29, 1999, Wisconsin Electric filed applications and an Applicant Prepared Environmental Assessment for new licenses for the above cited projects.

In addition to the above mentioned environmental assessment and applications, Wisconsin Electric filed for FERC review, one original and five additional copies of the proposed post license compliance plans for the Upper Menominee River Basin hydroelectric projects. These plans were finalized in consultation with the agencies and included the following:

- Terrestrial-Based Natural Resource Management Plan (includes land management, threatened and endangered species protection, nuisance plant control and wildlife management plans)
- Preliminary Recreation Plan- Draft
- Woody Debris Management Plan
- Reservoir Drawdown Plans
- Operational Compliance Plans

The purpose of this letter is to file an additional proposed post license compliance plan (addendum) for the subject projects. The enclosed Water Quality Monitoring Plan was developed in consultation with the states of Michigan and Wisconsin water quality management staffs, and is consistent with the Wilderness Shores Settlement Agreement as well as the 401 water quality certification issued by the state of Michigan. The enclosures consist of one original and five additional copies of the final plan as well as letters of agreement concerning the plan from the two states.

00041301 23-3

Please call David Michaud at (414) 221-2187 if you have any questions concerning the water quality plan or this filing.

Sincerely,

Rita L. Hayen, P.E.
Project Manager, Hydro Licensing

Encl.

cc: Ms. Patti Leppert Slack, FERC
Mr. Charles Verhoeven, WDNR
Mr. John Suppnick, MDNR
APEA Team

Final Plan

FINAL WATER QUALITY MONITORING PLAN

For Projects referred to
in the Wilderness Shores Settlement Agreeement
"WSSA"

Way Dam and Michigamme Reservoir	FERC Project No.	1759
Hemlock Falls Plant	"	2074
Lower Paint Plant, Dam and Diversion Canal	"	2072
Peavy Falls Plant and Peavy Pond	"	11830
Michigamme Falls Plant	"	2073
Twin Falls Plant	"	11831
Kingsford Plant	"	2131
Big Quinnesec Falls Plant	"	1980

Wisconsin Electric Power Company
April 10, 2000

I. Continuous Water Quality Monitoring

A. Temperature

As stated in the Wilderness Shores Settlement Agreement, the company shall not discharge water from the subject projects that exceeds the following monthly maximum temperatures (in degrees F,) when flows are greater than or equal to the 95 percent exceedance values:

J	F	M	A	M	J	J	A	S	O	N	D
38	38	41	56	70	80	83	81	74	64	49	39

To determine compliance, continuous monitoring for temperature shall occur at nine locations:
Upstream of the Michigamme Reservoir on the Michigamme River; downstream of Hemlock Falls Dam; downstream of Paint Diversion Dam in the diversion canal; downstream of Peavy Falls Dam; downstream of Michigamme Falls Dam but above the confluence of the Michigamme and Brule Rivers; downstream of this confluence; downstream of the Twin Falls Dam; downstream of the Kingsford Dam; and downstream of the Big Quinnesec Dam.

Continuous recording instruments will be used with actual measurements being programmed to occur on the hour (24 measurements per day, per location).

B. Dissolved Oxygen (DO)

As stated in the WSSA, the Company shall not cause the dissolved oxygen (DO) concentration measured in the Michigamme, Paint, and Menominee Rivers immediately downstream of the subject projects to be less than 5.0 mg/l. To determine compliance with this standard, continuous monitoring for DO and percent oxygen saturation shall occur at six locations:
Within the Way Dam powerhouse; downstream of but within the tailraces of the Peavy Falls, Michigamme Falls, Twin Falls, Kingsford and Big Quinnesec powerhouses. Monitoring conducted in the Michigamme River between the Way and Hemlock dams during July, 1997 demonstrated that little variation in DO either with depth or downstream distance occurs in the deep run river segment between these two dams, thus it is unnecessary to monitor downstream of either as long as the DO levels in the water being released by Way Dam is known. Maintenance of the standard for DO below Way dam will guarantee maintenance of the DO standard below Hemlock Dam.

With the exception of the instrument installed within the Way Dam powerhouse, all remaining instruments to be used will be portable, pre-programmed continuous recording instruments (eg, such as the Hydro Lab Recorder) that will take DO measurements on the hour (24 measurements per day, per location).

The Schneider Model WQ100 instrument, that has been plumbed into the turbine bearing cooling line within the Way Dam powerhouse, will likewise be programmed to measure DO each hour. This instrument draws water from the cooling line, which in turn, draws water from the intake forebay. The intake forebay supplies water to the turbine which is then discharged to the plant's tailrace. The intake forebay is situated at a depth that is often below the summer thermocline. The water at these depths, following periods of low inflow to the reservoir and warm ambient air temperatures, often exhibits DO levels below the DO standard. Monitoring performed by Wisconsin Electric in 1995-96 established the relationship between low DO levels in the reservoir below the thermocline and subsequent low DO levels in the tailrace.

C. Quality Assurance

The instrument's probes will be cleaned and calibrated at least once every two weeks, water quality and bio-fouling conditions permitting. If extensive fouling precludes servicing the meters on this schedule, meters will be changed out on a more frequent basis. Before deployment, the DO probe's measurements will be air calibrated per the manufacturer's specifications while temperature will be checked against a laboratory thermometer certified by NIST. Upon retrieval, all hourly measurements will be scanned for possible violations of the water quality standards as the data are being downloaded from the instruments to the laptop computer. At the end of the downloading process, the instruments' calibration is rechecked per the manufacturer's specifications. The company will seek to achieve an ending calibration error of no more than ± 1.0 mg/l 70% of the time.

D. Monitoring Schedule

Monitoring shall be initiated, water conditions permitting, as close to June 1 as possible and shall continue through September 30. The continuous monitoring portion of this program shall be conducted during the first two years following license issuance. If no violations of the water quality standards for temperature or DO are encountered during the first two years, the agencies shall be consulted to determine an alternative monitoring protocol for the remaining years of the license.

However, if violations of the water quality standards are encountered during the initial two year portion of the program, the agencies shall be consulted to devise a strategy for identifying the cause of the violations and to identify the actions needed to correct the problem. Continuous monitoring at any project may be initiated earlier than June 1 or extended into October if vertical profile measurements indicate the presence of below standard DO levels within the water column in the vicinity of intake structure openings for any of the projects.

II. Impoundment Monitoring

A. Locations / Schedule

Surface to bottom vertical profiles of temperature and DO shall be made in the one deepest location closest to each project's intake, every two weeks from June 1 through August 31 and once monthly for the months of February, April, May, September and October. Measurements shall be made at 1.0 meter increments until water temperature is found to change more than 1.0 degrees Centigrade (C) per meter, then sampling shall be done at 0.5 meter increments. Secchi disk water transparency measurements shall be made concurrent with the vertical profile measurements, although ice cover and daylight conditions may effect true water column clarity during ice cover surveys. When secchi disk measurements are taken, time of day, weather conditions (including cloud cover), and wave conditions will be recorded on the field data sheets.

B. Equipment / Quality Assurance

A Hydrolab surveyor or equivalent water quality analyzer will be used for the measurements. Instrument calibration shall be consistent with procedures used for the continuous monitoring equipment (see Section I.C).

III. Chemical Monitoring

Water, sediment, and fish shall be monitored as prescribed in Appendix A to this document.

IV. Reporting

The company will compile and summarize all temperature and DO data in annual written reports provided to the Chief of the Surface Quality Division of the MDEQ and WDNR Northeast Region Water Leader. Reports shall be made immediately anytime water quality violations are found. At all

other times, water quality data will be provided to the Chief of the Surface Water Quality Division of the MDEQ, and the WDNR Northeast Region Water Leader within five (5) working days of the request. For profile sampling, the results of all measurements shall be submitted including any replicate measurements. For each continuous monitoring locations, the following will be provided:

- Determinations of the daily minimum, daily maximum and daily average DO and temperature each day monitored. All raw data will be provided. An accounting shall be made for the entire monitoring period. All data gaps shall be fully explained;

- An upstream/downstream comparison of the DO and temperature including the frequency and magnitude of any values that exceed or violate the standard at each station;

- An evaluation of the relationship between any observed temperature or DO violations and other environmental factors that were monitored such as the time of day, stream flow, and operating characteristics of upstream projects;

- All quality assurance data.

Chemical Monitoring Plan

1. Monitoring Locations / Equipment

The quarterly water quality samples will be collected from eight locations[1]. Ten percent of quarterly (December, May, July, October) samples will be replicated.

Sediment samples will be obtained from 8-locations representing depositional areas in each impounment. Two spatially composited fine-grained sediment samples will be collected at each location for analysis using the Great Lakes and Environmental Assessment Section (GLEAS) Procedure #64 (copy attached to this plan).

With respect to the fish contaminant portion of this monitoring plan, it is important that the contaminant data collected support the objectives of both states' fish consumption advisory programs. The MDEQ recommends that for the purpose of supporting the consumption advisories, the upper Menominee River watershed be divided into two reaches; the Michigamme River and the Menominee River. Individual fish data collected from the Michigamme Reservoir, Michigamme Falls Impoundment, Peavy Pond, and the Paint River Pond can therefore be pooled. Similarly, individual fish data from the Twin Falls, Kingsford, and Big Quinnesec Impoundments can be pooled.

The fish will be collected during early spring from the subject waters using trap nets or electrofishing equipment. Since the capture of walleye may be labor intensive, an alternate means may be used. The company would solicit creeled specimens from fishermen. In return, the company will donate $100 to the donor's preferred charity (301 (c) recognized) in the donor's name. Fish will be placed on ice until frozen. The fish fillets shall be sent to a contract laboratory for the required analyses. The MDEQ will be consulted prior to the initiation of the required analyses as to whether the MDEQ wishes portions of collected fish tissues for comparitive analyses

The fish collected from the Michigamme River waters (Table A-1) shall be analyzed for mercury only, while the fish collected from the Menominee River waters (Table A-2) shall be analyzed for mercury and the organic contaminants listed in Section 3 and Table A-3

[1] Upstream and downstream Michigamme Reservoir; downstream of Peavy, Michigamme Falls, Lower Paint, Twin Falls, Kingsford, Biq Quinnesec dams.

2. Monitoring Schedule

The first - once every five year - quarterly water quality samples will be collected coincident with the first year of continuous water quality monitoring to take advantage of committed staff resources.

The first sediment samples will be collected during the 20th year of the new license period.

The first fish contaminant sampling will be staggered three years after the first two years of the continuous water quality monitoring program to reduce demands on staff and will be repeated every ten years of the license period.

3. Analyses to be Performed

Each water sample shall be analyzed using approved US EPA methods for the following parameters:

Alkalinity, chlorophyll-a [2], color, dissolved sulfates, pH, hardness, Secchi depth, specific conductivity, total ammonia, total dissolved solids, total nitrates, total nitrites, total nitrogen, total organic carbon, total phosphorus, total suspended solids.

Each sediment sample shall be analyzed using US EPA methods for the following parameters:

Oil and grease, percent volatile solids, total arsenic, total barium, total cadmium, total chromium, total copper, total lead, total manganese, total mercury, total nickel, total nitrogen, total organic carbon, total phosphorus, total selenium, total silver, total zinc, acid volatile sulfides [3], and total PCB.

Fish fillets shall be analyzed using US EPA methods for mercury and the organic contaminants: *Dieldrin; DDE; DDD; DDT; PCBs (Arochlors 1242, 1248, 1254, 1260); toxaphene; Heptachor epoxide; and the chlordane congeners listed in Table A- 3.*

[2] While the company will make reasonable efforts to analyze this parameter, we are aware that few area contract laboratories perform this analysis.
[3] EPA methods exist for acid soluble and acid insoluble sulfides. Non-EPA methods must be used for acid volative sulfides.

Table A- 1 Species and Size Ranges of Fish from the Michigamme River Impoundments to be analyzed for mercury.

Species	Quantity	Fish Length Range (inches)	Type of Filet
Walleye	5	15" - 18.9 "	Skin on Filet
Walleye	5	19" +	Skin on Filet
Burbot	10	19" +	Skin off Filet
Northern Pike	10	22"+	Skin off Filet
White Sucker	10	12" +	Skin on Filet

Table A-2. Species and size ranges of fish from the Menominee River Impoundments to be analyzed for Mercury and Organic Contaminants

Species	Quantity	Fish Length Range (inches)	Type of Filet
Walleye	5	15-18.9"	Skin on Filet
Walleye	5	19 +	Skin on Filet
Red Horse Sucker	10	12 +	Skin on Filet
White Sucker	10	12 +	Skin on Filet
Carp	10 (if possible)	any length *	Skin off Filet

*-Since carp are hard to collect in this reach, any carp collected should be retained.

Table A-3. Mercury and organic contaminants to be assayed in fish collected from the (WSSA) Specified flowages, and related levels of quantification to be achieved by analytical laboratory.

Contaminant	Analytical Level of Quantification
Dieldrin	5 ug/kg
4,4'-DDE	3 ug/kg
4,4'-DDD	5 ug/kg
4,4'-DDT	5 ug/kg
Mercury	10 ug/kg
PCBs (arochlors 1242, 1248, 1254, 1250)	25 ug/kg
Heptachor epoxide	3 ug/kg
Oxychlordane	3 ug/kg
gamma-Chlordane	3 ug/kg
alpha-Chlordane	3 ug/kg
trans-Nonachlor	3 ug/kg
cis-Nonachlor	3 ug/kg

Letters Of Agreement From State Agencies

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

SURFACE WATER QUALITY DIVISION
KNAPPS CENTRE
PO BOX 30273
LANSING MI 48909-7773

March 28, 2000

Mr. Dave Michaud
Wisconsin Electric Power Company
231 West Michigan
P.O. Box 2046
Milwaukee, Wisconsin 53201-2046

Dear Mr. Michaud:

We have received your March 8, 2000 letter transmitting the final Water Quality Monitoring Plan for the projects covered in the Wilderness Shores Settlement Agreement and your March 16, 2000 letter transmitting a revised Table A-3. We recommend that this plan be approved by the Federal Energy Regulatory Commission.

We appreciate the opportunity to review the plan. If you have any questions, please contact me.

Sincerely,

John Suppnick
Great Lakes and Environmental Assessment Section
Surface Water Quality Division
517-335-4192

js:yg
cc: Mr. Kurt Newman, Fisheries Division, MDNR
Mr. Gerald Saalfeld/Wisconsin Electric Wilderness Shores FERC File, MDEQ

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
Ronald W. Kazmierczak, Regional Director

P.O. Box 208
101 North Ogden Road
Peshtigo, Wisconsin 54157
Telephone 715-582-5000
FAX 715-582-5005

March 15, 2000

Mr. Dave Michaud
Wisconsin Electric Power Company
231 W. Michigan, P.O. Box 2046
Milwaukee, WI 53201-2046

Subject: Comments on Final Water Quality Monitoring Plan - Upper Menominee River Basin

Dear Dave:

Thank you for the chance to review the water quality monitoring plan for the Upper Menominee River Projects.

Your revised plan has addressed the concerns we had with the early draft of this plan. We look forward to working with you on the implementation of the Wilderness Shores Settlement Agreement.

Sincerely,

Charles Verhoeven
Northeast Regional Water Leader

Cc: Greg Sevener – Peshtigo
Tom Thuemler – Peshtigo
Kurt Newman - Michigan Department of Natural Resources
Jim Fossum – U. S. Fish and Wildlife Service