ORIGINAL

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November 19, 2004

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: Michigamme Falls Hydroelectric Project - FERC No. 2073-008

Article 408; -Year 2004 - Water Quality Monitoring Report

Wisconsin Electric (WE) doing business as We-Energies, is hereby filing one original and eight additional copies of the results of water quality monitoring for the above identified Project performed during 2004 in fulfillment of the monitoring plan approved and incorporated in the article identified above by FERC for this project.

The Commission issued a new license for the above Project on January 12, 2001 and by Order issued March 9, 2001 clarified certain Water Quality Monitoring requirements. The approved monitoring plan assures that the discharges from the above Project meet the state's water quality standards for temperature and dissolved oxygen (DO). The applicable mean temperature standards for the months during which continuous monitoring takes place are shown in the table below:

Month	June	July	August	September
°F	80	83	81	74
°C	26.7	28.3	27.2	23.3

The applicable D.O. standard is 5.0 mg/l at all times.

The Plan as approved by FERC order dated January 12, 2001 was subsequently modified by WE, with approval of consulted state agencies. The modified plan was filed with FERC in correspondence dated May 20, 2003. The modified plan now requires continuous monitoring of temperature and dissolved oxygen for the next three years at only those projects where problems in meeting the water quality standards were encountered during the previous two years (2001-2002) period. Michigamme Falls was one of three projects which experienced problems during this time frame. Continuous monitoring was subsequently performed in 2003.

In addition, the modified plan also requires the collection of vertical profile measurements in the flowage upstream of any project when continuous monitoring is being conducted in the tailrace waters.

The results of our 2004 monitoring for this project are as follows:

I. Continuous water quality monitoring

Appendix A contains summary tables for the continuous monitoring data. Temperature and DO were monitored continuously from mid-June through mid September in the Project's tailrace. No violations of the applicable temperature or DO standards were observed in 2004 as

opposed to 2003, when the Project failed to meet the dissolved oxygen standard for a few hours during selected days in the month of August.

Appendix A also contains the monitoring data recovery statistics for each of the multi-function data sondes used in this monitoring period.

As part of this filing, a diskette containing all the raw data and accompanying explanatory sheets are being submitted to the agencies for their use.

II. Flowage measurements

Appendix B contains the results of the vertical profile measurements for the project which have been taken during 2004. Patterns observed in Michigamme Falls Flowage were generally *similar to previous years' observations. However, intensely stratified conditions were not* observed in the flowage during 2004

Consideration of Corrective Measures

The work conducted in 2004 represent WE's continuing efforts to correct problems caused by plant operations that were encountered during the initial two-year (2001-2002) monitoring period that was specified by the initial Water Quality Monitoring Plan for this Project. The low DO problems encountered at Michigamme Falls during 2001 were expected, due to the nature of operations and the location of the intake relative to historic flowage thermocline depths. During 2001, the problems were mostly confined to periods when the plant was offline and the discharge from the plant was leakage flow. The source of the leakage flow was believed to be poorly oxygenated hypolimnetic water in the flowage. The change in operating conditions required by the new license operating directives in 2002 coupled with the *installation of a new adjustable Kaplan turbine on one of the existing units corrected this* problem, as evidenced by the 2002 monitoring data. However, follow-up work in 2003 showed that low DO conditions "re-appeared" in the tail race. In 2003, DO levels dropped *below 5.0 mg/l (the lowest reading was 4.6 mg/l) during a total of six hours in late-August.* We believe that these low readings were the result of abnormal conditions in the upstream flowage, which, in turn, were created by a prolonged wind-induced upwelling in the flowage. The wind-induced upwelling brought low DO water from the bottom of the flowage to the surface of the flowage in a region immediately upstream of the Project's intake. The transient nature of this event was captured by the vertical profile measurements. By contrast, no similar upwelling apparently occurred during 2001, 2002, or 2004.

We conclude that, based on the monitoring record, the incidence of low DO readings in the Project's tailrace during 2003 were not caused by abnormal / non-permitted plant operations.

As a result of this year's findings, we will be requesting the MDEQ to affirm that no additional continuous monitoring is required at this Project until a new long-term water quality monitoring plan is prepared in 2006.

Enclosed is a proof of service to the agencies listed on the copy list.
Please call me at (414) 221-2413, if you have questions on this matter.

Sincerely,

William Rauscher

William Rauscher
Manager, Hydroelectric Operations

Enclosures

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cc: Mr. Michael Donofrio, WDNR w/diskette
Ms. Jessica Mistak, MDNR w/ diskette
Mr. Larry Thompson, USFWS w/ diskette
Mr. John Suppnick, MDEQ w/ diskette

Certificate of Service

I hereby certify that I have this day served the foregoing document upon all entities specified in the order to issue license to be consulted on matters related to the Commission filing. Service was done pursuant to Rule 2010 of FERC's Rules of Practice and Procedure 18 CFR, Section 385.2010

Dated this day Friday, November 19, 2004

Annie Salmona
We Energies

Annie Salmona
We Energies
333 W. Everett Street
Milwaukee, WI 53203
(414) 221-4151

Appendix A
Michigamme Falls Tailrace - 2004 Summary Data

Dissolved Oxygen Limit 5.0 mg/l

		Degree F	Degree C
Monthly Average Temperature Limits:	June	80	26.7
	July	83	28.3
	August	81	27.2
	Sept	74	23.3

Michigamme Falls Tailrace - 2004 Data Summary

Month	OBS	Temperature (Degrees C)			DO % Saturation			Dissolved Oxygen		
		Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
Jun	348	18.6	20.1	17.5	84.5	96.2	78.6	7.8	8.9	7.2
Jul	744	19.8	21.6	17.8	79.4	90.5	63.7	7.1	8.0	5.6
Aug	744	19.8	22.0	18.3	76.5	89.8	67.6	6.9	8.1	6.0
Sep	521	18.9	21.0	18.2	79.1	100.3	67.5	7.2	8.9	6.2

100 % Data Recovery Monitoring Data from June 16 @ 1200 - Sept 22 @ 1600.
No D.O. values below 5.0 mg/l.

06/16/04

John Hrobar and Russ Rick
Flow at big q 6/15 2900 cfs

Approximate air temp. : 23.8C *Time:1045*
Secci Depth:5.0 ft. water depth ~40' *mostly blue sky*
WNW winds 4-7 mph *10-20 % clouds*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	19.5	8.5	93.0	87	7.4
0.5	18.4	8.5	91.8	87	7.5
1.0	18.2	8.4	90.3	86	7.5
1.5	18.1	8.3	88.8	87	7.5
2.0	18.1	8.2	87.3	87	7.5
2.5	18.1	8.1	86.7	86	7.5
3.0	18.1	8.1	86.1	87	7.5
3.5	18.0	8.0	85.3	87	7.5
4.0	17.8	7.9	84.0	87	7.5
4.5	17.7	7.8	83.2	87	7.5
5.0	17.6	7.8	82.4	86	7.5
5.5	17.6	7.7	81.5	88	7.5
6.0	17.5	7.7	81.3	87	7.5
6.5	17.5	7.7	81.0	87	7.4
7.0	17.4	7.6	80.7	86	7.4
7.5	17.4	7.6	80.1	86	7.4
8.0	17.3	7.5	79.3	87	7.4
8.5	17.2	7.5	78.4	87	7.4
9.0	17.3	7.5	78.5	88	7.4
9.5	17.1	7.4	77.7	85	7.4
10.0	17.1	7.4	77.2	87	7.4
10.5	16.9	7.3	76.3	85	7.4
11.0	16.8	7.2	75.1	85	7.4
11.5	16.8	7.1	74.2	86	7.4
12.0	16.6	6.6	69.7	86	7.3
12.4	16.4	6.0	62.0	86	7.3

07/01/04

John Hrobar and Russ Rick
Flow at big q 6/15 2900 cfs

Approximate air temp:23.8 C *Time: 1600*
Secci Depth:6.5 ft. water depth ~40' *less than 5% clouds*
winds near calm Slightly south 0-4 mph *bright blue sky*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	24.1	8.8	106.5	96	7.5
0.5	24.2	8.8	105.9	97	7.5
1.0	23.3	8.7	104.7	97	7.5
1.5	22.4	8.7	102.7	97	7.5
2.0	20.0	8.4	94.3	97	7.4
2.5	19.7	8.2	91.8	97	7.4
3.0	19.6	8.1	90.5	97	7.4
3.5	19.6	8.1	90.2	97	7.4
4.0	19.4	8.0	88.0	97	7.4
4.5	19.3	7.8	86.5	97	7.3
5.0	19.2	7.8	86.3	96	7.3
5.5	19.1	7.8	85.3	96	7.3
6.0	19.0	7.7	84.8	96	7.3
6.5	18.9	7.7	84.5	96	7.3
7.0	18.7	7.7	84.1	97	7.3
7.5	18.5	7.7	83.2	96	7.3
8.0	18.3	7.4	80.0	96	7.3
8.5	18.0	7.2	78.5	96	7.2
9.0	17.9	7.0	75.5	96	7.5
9.5	17.7	6.9	73.4	96	7.2
10.0	17.6	6.8	72.3	95	7.2
10.5	17.6	6.6	70.6	96	7.1
11.0	17.6	6.5	69.3	95	7.1
11.5	17.2	6.1	64.5	95	7.1
12.0	17.2	6.1	64.4	97	7.1
12.5	17.2	6.0	63.2	97	7.0
12.9	17.1	5.8	61.5	96	7.0

07/15/04

John Hrobar and Meghan Count

Approximate air temp:25.5 C *Time: 1800*
Secci Depth:5.5 ft water depth ~40' *70% clouds*
Northerly winds 7-14 mph

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	23.1	9.0	106.5	102	7.8
0.5	23.1	9.0	106.5	102	7.8
1.0	22.9	8.9	104.1	102	7.7
1.5	22.5	8.7	102.5	102	7.7
2.0	22.4	8.7	102.0	102	7.7
2.5	21.8	8.6	99.8	101	7.8
3.0	21.7	8.5	98.5	102	7.6
3.5	21.6	8.5	97.6	102	7.6
4.0	20.2	7.8	87.5	102	7.5
4.5	20.1	7.6	84.5	103	7.4
5.0	19.9	7.5	83.7	103	7.4
5.5	19.8	7.4	82.1	102	7.3
6.0	19.5	7.2	80.4	103	7.3
6.5	19.1	7.1	77.9	101	7.9
7.0	18.9	6.8	74.5	101	7.2
7.5	18.5	6.6	71.5	102	7.2
8.0	18.4	6.5	70.3	101	7.2
8.5	18.2	6.3	67.4	101	7.2
9.0	18.0	6.1	65.4	101	7.2
9.5	17.9	6.0	63.6	102	7.1
10.0	17.8	5.8	62.6	101	7.1
10.5	17.7	5.9	62.4	101	7.4
11.0	17.7	5.7	60.8	101	7.1
11.5	17.5	5.6	58.8	100	7.0
12.0	17.5	5.5	58.4	100	7.0
12.5	17.4	5.1	54.7	100	7.0
13.0	17.1	4.9	48.4	100	6.9

Highlighted depth: opening of intake forebary (1.5 m to 9.5 m)

Tailrace data for time period closest to vertical profile time

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1200	18.0	8.2	87.6	85

pH was not a parameter collected in the tailrace.

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1500	19.8	7.9	86.9	95
1600	19.7	7.9	87.4	95
1700	19.7	7.9	87.5	95

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1700	20.2	7.5	84.5	102
1800	20.2	7.4	84.0	102
1900	20.1	7.2	81.8	102

07/29/04
John Hrobar and Noel Cutright

Approximate air temp:26.6 C — *Time: 1350*
Secci Depth:7.0 ft. water depth ~40' — *80% clouds*
WSW winds 8-12 mph gusts — *occ drizzle*

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	21.1	7.0	79.3	106	7.2
0.5	21.1	7.0	80.8	106	7.2
1.0	21.0	7.2	83.3	106	7.2
1.5	20.9	7.4	84.6	106	7.2
2.0	20.8	6.8	76.8	106	7.2
2.5	20.7	6.7	76.0	107	7.2
3.0	20.5	6.1	69.5	106	7.1
3.5	20.0	6.4	71.4	106	7.1
4.0	20.0	6.2	70.0	107	7.1
4.5	20.0	6.2	69.7	107	7.1
5.0	19.9	6.2	68.8	106	7.1
5.5	19.9	6.1	68.1	108	7.0
6.0	19.9	6.0	67.1	108	7.0
6.5	19.8	6.0	66.7	107	7.0
7.0	19.7	5.8	64.2	107	7.0
7.5	19.7	5.7	63.4	107	7.1
8.0	19.5	5.3	58.7	108	7.0
8.5	19.6	5.5	60.6	108	7.0
9.0	19.5	5.3	58.7	108	7.0
9.5	19.4	5.2	57.1	107	7.0
10.0	19.4	5.1	56.4	108	6.9
10.5	19.4	4.9	54.7	109	6.9
11.0	19.3	4.8	52.8	107	6.9
11.5	19.1	4.4	49.2	108	6.9
12.0	18.3	2.2	30.1	111	6.9
12.5	17.0	1.1	11.3	117	6.8

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1300	20.4	5.9	66.9	107
1400	20.7	6.2	71.3	107
1500	21.1	6.5	74.7	106

08/12/04
John Hrobar and Annie Salmons

Approximate air temp:15.5 C — *Time: 1715*
Secci Depth:6.0 ft. water depth ~40' — *Sunny day*
ENE Winds 12-18 mph — *very blue sky*
10-20% clouds

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	20.5	7.7	87.0	108	7.3
0.5	20.5	7.6	86.4	108	7.3
1.0	20.5	7.6	85.8	108	7.3
1.5	20.5	7.5	84.9	108	7.3
2.0	20.5	7.5	84.3	108	7.3
2.5	20.5	7.4	84.2	108	7.3
3.0	20.4	7.3	81.2	108	7.3
3.5	20.3	7.1	81.2	108	7.3
4.0	20.3	7.1	79.3	108	7.2
4.5	20.3	7.0	79.1	109	7.2
5.0	20.2	7.0	78.9	108	7.2
5.5	20.2	7.0	78.7	108	7.2
6.0	20.2	7.0	78.7	108	7.2
6.5	20.2	7.0	78.0	108	7.2
7.0	19.9	6.9	76.7	108	7.2
7.5	19.9	6.8	75.5	108	7.2
8.0	19.8	6.7	74.9	108	7.2
8.5	19.8	6.8	75.9	107	7.2
9.0	19.7	6.8	75.0	108	7.2
9.5	19.6	6.7	74.4	108	7.2
10.0	19.6	6.6	72.8	108	7.2
10.5	19.5	6.5	71.9	109	7.2
11.0	19.5	6.5	71.7	108	7.1
11.5	19.5	6.5	73.0	108	7.1
12.0	19.3	6.5	71.6	109	7.1
12.5	19.2	6.0	70.5	109	7.1

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1600	19.9	6.6	76.4	110
1700	19.8	6.8	75.8	110
1800	19.8	6.7	75.1	110

08/26/04
John Hrobar and Bill Braunschweig

Approximate air temp:26.6 C — *Time 1545*
Secci Depth:6 5 ft. water depth 38-40' — *70-80% clouds*
Southerly winds 12-18 mph

Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	18.2	7.9	85.6	112	7.4
0.5	18.2	7.9	85.4	113	7.4
1.0	18.0	7.9	85.6	112	7.4
1.5	17.9	7.9	84.7	112	7.4
2.0	16.9	8.1	85.7	114	7.4
2.5	16.8	8.0	83.3	114	7.4
3.0	16.6	7.8	81.9	114	7.4
3.5	16.7	7.8	81.4	114	7.3
4.0	16.7	7.8	81.5	114	7.3
4.5	16.7	7.8	81.6	114	7.3
5.0	16.7	7.8	80.9	115	7.3
5.5	16.7	7.8	80.7	114	7.3
6.0	16.6	7.7	80.3	115	7.3
6.5	15.7	7.7	80.1	113	7.3
7.0	16.7	7.7	80.0	114	7.3
7.5	16.7	7.6	80.4	115	7.3
8.0	16.7	7.6	79.7	114	7.3
8.5	16.6	7.6	79.0	115	7.3
9.0	16.6	7.5	78.1	111	7.2
9.5	16.6	7.4	76.3	112	7.2
10.0	16.6	7.3	75.4	113	7.2
10.5	16.6	7.3	74.4	111	7.2
11.0	16.7	7.1	70.9	113	7.2
11.5	16.5	6.1	67.9	113	7.2
12.0	16.5	6.3	65.6	113	7.1
12.5	16.2	5.4	61.4	114	7.0

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1500	18.9	7.3	80.5	108
1600	18.8	7.3	79.6	108
1700	18.7	7.3	79.2	108

09/09/04						09/23/04					
John Hrobar and Russ Rick						John Hrobar and Russ Rick up well @dam					
Approximate air temp:21.1 C *Secci Depth:7.5 ft. water depth 38-40'* *SSE winds 1-3 mph*				*Time 1603* *No clouds*		*Approximate air temp:26.6 C* *Secci Depth:9.5 ft. water depth 40'* *Southernly winds 12-18 mph*				*Time 1550* *20% clouds*	
Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)	Depth (m)	Temp. (C)	D.O. (mg/l)	D.O. % Saturation	Cond. (uS/cm)	pH (S.U.)
0.0	22.4	7.7	90.1	109	7.9	0.0	18.8	7.3	79.1	113	7.6
0.5	21.5	7.8	89.5	108	7.8	0.5	18.8	7.3	79.2	113	7.6
1.0	19.8	8.0	88.9	108	7.9	1.0	18.8	7.3	79.6	113	7.6
1.5	19.6	7.9	87.0	107	7.6	1.5	18.8	7.4	78.6	113	7.7
2.0	19.4	7.8	85.6	108	7.7	2.0	18.8	7.2	78.6	113	7.6
2.5	19.4	7.7	84.0	108	7.6	2.5	18.7	7.2	78.0	112	7.6
3.0	19.3	7.6	82.7	108	7.6	3.0	18.6	7.1	78.4	112	7.6
3.5	19.3	7.5	81.8	108	7.6	3.5	18.5	7.0	75.8	112	7.6
4.0	19.2	7.4	81.4	107	7.5	4.0	18.4	6.9	74.6	112	7.6
4.5	19.2	7.4	81.0	107	7.6	4.5	18.4	6.9	75.7	112	7.5
5.0	19.1	7.3	80.1	107	7.5	5.0	18.4	7.0	75.7	111	7.5
5.5	19.1	7.1	77.4	108	7.5	5.5	18.4	7.0	75.9	111	7.5
6.0	19.1	7.0	76.4	107	7.4	6.0	18.3	6.8	73.7	112	7.5
6.5	19.0	7.0	76.4	107	7.4	6.5	18.3	6.6	71.4	112	7.5
7.0	19.0	6.9	76.4	107	7.4	7.0	18.3	6.5	70.0	112	7.5
7.5	18.9	6.8	74.3	107	7.4	7.5	18.3	6.4	69.1	111	7.5
8.0	18.9	6.6	72.4	107	7.4	8.0	18.2	6.4	68.2	112	7.5
8.5	18.7	6.2	66.4	107	7.2	8.5	18.2	6.3	67.4	112	7.4
9.0	18.7	6.0	65.5	107	7.2	9.0	18.2	6.1	65.1	112	7.4
9.5	18.6	5.7	61.6	107	7.2	9.5	18.2	6.0	64.5	112	7.4
10.0	18.6	5.6	59.9	107	7.1	10.0	18.1	5.8	62.3	112	7.4
10.5	18.5	5.4	58.3	107	7.1	10.5	18.1	5.6	59.6	113	7.4
11.0	18.4	5.0	53.5	107	7.1	11.0	18.0	5.5	58.2	113	7.3
11.5	18.2	4.6	49.3	108	7.0	11.5	18.0	5.1	54.6	113	7.3
12.0	18.1	4.4	47.2	108	7.0	12.0	17.6	4.2	43.3	116	7.5
12.5	17.8	4.1	43.0	116	7.0	12.5	17.5	1.7	18.2	138	7.6

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond
1500	19.7	8.0	88.0	110
1600	19.5	7.8	86.1	110
1700	19.3	7.6	83.5	110

Tailrace data for same time period as vertical profile

Time	Temp C	DO (mg/l)	DO (% Sat)	Cond

No data available as sonde was pulled on 9/22.