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FEDERAL ENERGY REGULATORY COMMISSION Northern States Power Company

100 North Barstow Street P.O. Box 8 Eau Claire, WI 54702-0008 Telephone (715) 839-2621

September 11, 1997

Lois Cashell, Secretary Federal Energy Regulatory Commission 888 First Street - N.E. Washington, D. C. 20426

Re: Superior Falls Hydroelectric Project - FERC Project No. 2587 - O\ Filing Pursuant To License Article 415

Dear Madam Secretary:

The Order On Rehearing for the Superior Falls Project's license, dated March 31, 1997, directed Northern States Power Company (NSP or Licensee) to consult with the U.S. Fish and Wildlife Service (FWS), the Wisconsin Department of Natural Resources (WDNR) and the Michigan Department of Natural Resources (MDNR) concerning Article 415. Specifically, the agencies were to be provided water quality data collected by NSP during 1990-91 and asked: 1) whether they agree that the data are sufficient to demonstrate that the project meets Wisconsin's and Michigan's standards for dissolved oxygen (DO) in the tailrace area of the project, and 2) whether, in light of the data, the requirement for water quality monitoring in this article, as worded in the license issued on January 19, 1995, can be deleted.

Licensee consulted with the three above mentioned agencies pursuant to Article 415 as evidenced by the attached correspondence (Attachment A). In addition, Licensee consulted with the State of Michigan's Department of Environmental Quality (MDEQ) who has authority for surface water quality in the State of Michigan, and that correspondence is also attached.

The FWS acknowledged receipt of the data but declined to comment because of time and staff constraints. The other three agencies all responded to the data submittal. The WDNR's and MDEQ's opinions were that the data were adequate to determine that the project does not affect water quality in the Montreal River and that further monitoring would be unnecessary. The MDNR, on the other hand, stated that they believe the data provided by Licensee were insufficient to demonstrate no project related impacts and that 3-years of continuous monitoring (as they previously recommended) should be conducted.

970918-0385-3

Lois Cashell, Secretary September 11, 1997 Page 2

Licensee agrees with the WDNR and MDEQ on this matter and urges the FERC to accept their points-of-view rather than the extreme position taken by the MDNR. Given that there are opposing views by two State of Michigan agencies, we believe the FERC should embrace the opinion of the agency with authority for the state's water quality matters and that is the MDEQ.

Licensee closes by emphasizing that there is no rationale or need for future temperature and DO monitoring at the project site. There are some 35-years of historical water quality data for the Montreal River at the Superior Falls site and there has never been any sort of DO or water temperature problems indicated. The project's run-of-river operation combined with the very small size (<17 acres) and shallow depth (~3-ft average depth) of its reservoir dismiss any potential impacts on water quality from project operations.

Should there be any questions about this filing, please contact me at 715/839-2692.

Very truly yours,

Lloyd Everhart, Administrator Hydro Licensing

c: Jeff Scheirer, WDNR
Jim Fossum, FWS
Gary Whelan, MDNR
John Suppnick, MDEQ

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### ATTACHMENT A

Agency Correspondence For Consultation On License Article 415 Of The Superior Falls Project





#### **Northern States Power Company**

100 North Barstow Street P.O. Box 8 Eau Claire, WI 54702-0008 Telephone (800) 895-4999

June 3, 1997

Mr. John Suptnick Michigan Department of Environmental Quality 300 S. Washington Sq. 2nd Floor, Knapp Center Lansing, MI 48933

Mr. Jeff Scheirer WDNR, Park Falls Area Headquarters P.O. Box 220 875 South Fourth Avenue Park Falls, WI 54552

Mr. Jim Fossum U. S. Fish & Wildlife Service 1015 Challenger Court Green Bay, WI 54311-8331

RE: Superior Falls Hydroelectric Project - FERC Project No. 2587
Review of Water Quality Data Pursuant to License Article 415

#### Dear Sirs:

On January 19, 1995, the Federal Energy Regulatory Commission (FERC) issued a new license to Northern States Power Company - Wisconsin (NSP or licensee) for the 1.65-megawatt Superior Falls Hydroelectric Project, located on the Montreal River (boundary water) in Iron County, Wisconsin and Gogebic County, Michigan. Shortly after license issuance, the Michigan Department of Natural Resources (MDNR) and NSP took exception to some of the license article requirements and filed requests for rehearing. The FERC issued its order on rehearing on March 31, 1997, and among other issues, directed NSP to consult with your agency regarding license Article 415. Specifically, we are to provide for your review and comment dissolved oxygen (DO) data that were collected at the project site during 1990-91.

Background Information: The discussion of Article 415 from the FERC's Order On Rehearing has been excerpted and is attached hereto for background

Suptnick, et.al. June 3, 1997 Page 2

information. Further background information is available in NSP's License Application for the Superior Falls Project which was filed with the FERC and the MDNR, the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service in December 1991.

Data Enclosures: Three sets of data are attached for your consideration:

- A. Tabulated dissolved oxygen, percent DO saturation, water temperature, and conductivity data collected from the Superior Falls Flowage and powerhouse tailrace. These data were collected biweekly from August 7 to October 19, 1990 and from February 18 to October 8, 1991, by NSP personnel using a calibrated YSI Model 54 DO and temperature meter.
- B. Graphs of temperature and DO data collected at the Superior Falls site which were presented in NSP's 1991 license application, including:
  - Data collected by the WDNR from their long-term water quality monitoring station on the Superior Falls Flowage, approximately 900-ft upstream from the dam. This site has been monitored each year since 1961 although only data from 1983-90 were used in the license application to demonstrate recent trends. (Note: NSP reviewed the entire 35-year DO data base for the site, available through STORET, and found only one documented incident where DO was less than 7.2 mg/l: a concentration of 6.7 mg/l was recorded on August 10, 1971).
  - Water temperature data collected continuously (20 minute intervals) from November 11, 1990 to October 21, 1991 at monitoring points just upstream from the Superior Falls Flowage (USGS gage) and in the tailrace of the Superior Falls powerhouse. These data were collected by NSP, at the request of the MDNR, using TempMentors by Ryān Instruments.

Data Interpretation: Analysis of the attached data indicates that DO levels in the Montreal River are generally high, seldom declining to less than 8.0 mg/l and 88% saturation. The lowest DO concentration recorded in the tailwater of the Superior Falls Project was 7.2 mg/l on June 18, 1991. These conditions are reflective of the overall good water quality of the Montreal River and the high degree of turbulence that is experienced by water as it moves through the rapids of the Montreal River Canyon, just upstream from the Project site.

The attached data from the 1990-91 continuous water temperature monitoring indicates there is very little temperature difference between sites upstream and downstream from the Superior Falls Flowage. In many cases, tailwater

Suptnick, et.al. June 3, 1997 Page 3

temperatures are the same or lower than in the river upstream from the flowage. The movement of water through a 1700-ft long underground pipeline between the dam and powerhouse may contribute to the sometimes lower temperatures in the tailwater area. The temperature data demonstrate that the 17-acre Superior Falls Flowage and the Project's run-of-river mode of operation have little impact on water temperature, or in turn, DO concentrations in the tailwaters of the Superior Falls hydroplant. Therefore, NSP believes the attached data are adequate to demonstrate that DO in the waters of the Superior Falls Project meet state water quality standards.

Agency Request: NSP requests that you review the attached data, pursuant to the FERC rehearing order, to determine whether, in your opinion, the data are sufficient to demonstrate that DO levels in the powerhouse tailrace meet state water quality standards. Additionally, you are to comment on whether, in light of the data, the requirement for additional long-term (3-yrs) water temperature and DO monitoring that is specified in the license article, can be deleted.

Please review the attached data and respond to this request by August 1, 1997. Should you have any questions on this matter they can be directed to my attention at 715/839-2692.

Very truly yours,

Lloyd Everhart, Administrator

Hydro Licensing

c: Gary Whelan, MDNR

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Excerpted Discussion For License Article 415 From The FERC's March 31, 1997 Order On Rehearing For The Superior Falls Project.

# . Mater Ouality

Article 415 requires Northern States to submit a plan, 12/ developed in consultation with the Fish and Middite Service, Misconsin DNR, and Michigan DNR, to monitor dissolved oxygen (DO) and temperature 13/ downstream of the project during the months of September, October, and November (fall fish spamning period) for at least three years, after which Northern States is to evaluate the need for further monitoring.

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Project No. 2587-003 and Docket No. UL95-6-001

On rehearing, Michigan DNR argues that, although it waived and the Clean Water Gran Mater Act nevertheless regular Northern States to comply with Michigan's water quality standards, as well as Michigan DNR's monitoring recommendations. However, while the Commission often adopts as a license requirement the physical water quality parameters of a state even where the state has waived certification, in such cases the licensee's compliance with state water quality standards is compelled by the license, not state law. 15/

The Director found that, while the state temperature standards for a coldwater fishery (the designated use of the Montreal River 16/) are met during critical periods such as the fall spawning season, the temperatures in the waters both upstream and downstream of the project deviate from state standards for coldwater fishery during some spring and summer months. The temperatures in the project's talized do not increase from those in the project's impoundment; thus, the project is not causing the temperature deviations from state standards. 17/ The Director moneover found that because the reservoir is small, Northern States is unable to modify project operations to enhance water quality conditions. 18/ Therefore, although he required monitoring of DO and temperature for a three-year period, he rejected Michigan DNR's request for year-round continuous temperature monitoring, May-to-October DO monitoring, and periodic water/sediment/fish monitoring.

Northern States argues that the three-year DO monitoring requirement of Article 415 is unnecessary, costly, and time-consuming, and is based on the mistaken assumption that tailwater DO data are unavailable. It states that at Michigan DNR's request it conducted continuous tailwater temperature monitoring during a 12-month period in 1990-1991, which established that the DO levels in the tailrace area meet state standards. The relevant resource agencies have not yet had the opportunity to review and comment on the data. Therefore, we will revise resource agencies regarding the data, and resport to the Commission the results of those consultations. At that point, we will determine whether the DO monitoring requirements should be

<sup>8/</sup> The license does not require a minimum flow on behalf of flahery resources, because any improvement from such flows would be marginal. Id. at p. 64,115.

<sup>2/</sup> Id. at p. 64,118.

Id. at p. 64,111.

<sup>11/</sup> Id. at p. 64,118.

<sup>12/</sup> The deadline for filing the plan was extended to July 1, 1997.

<sup>13/</sup> Michigan DNR erroneously asserts (rehearing request at 12) that Article 415 did not include a requirement to monitor temperature.

<sup>14/</sup> See 70 FERC at pp. 64,084-85, 64,105. The project, although located in both Wisconsin and Michigan, only needs water quality certification from Michigan, as that is the location of the discharge from the project.

<sup>15/</sup> Sea, e.g., Wisconsin Blectric Power Company, 76 PERC \$ 61,183 at p. 62,018 (1996).

<sup>16/</sup> See 70 PERC at p. 64,108.

<sup>17/</sup> Id. at pp. 64,086 and 64,111.

<sup>18/</sup> Michigan DNR does not challenge this conclusion. We also note that the project powerhouse is only 750 feet from Lake Superior, so project discharges quickly mix with lake water.

Dissolved oxygen, temperature and conductivity values collected from the Superior Falls Flowage and tailrace during 1990 and 1991.

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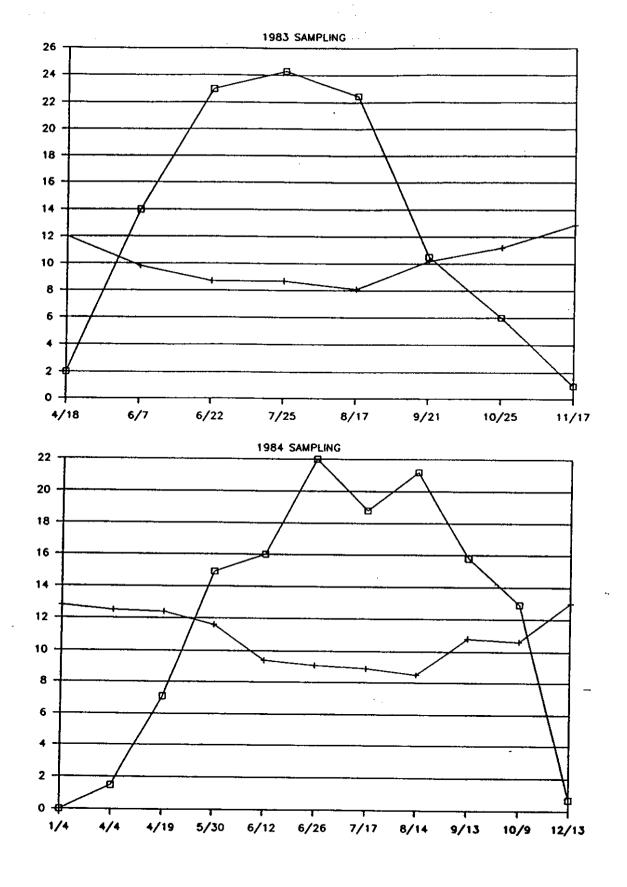


Figure E-1. Instantaneous dissolved oxygen and temperature values for the 1983-1990 sampling.

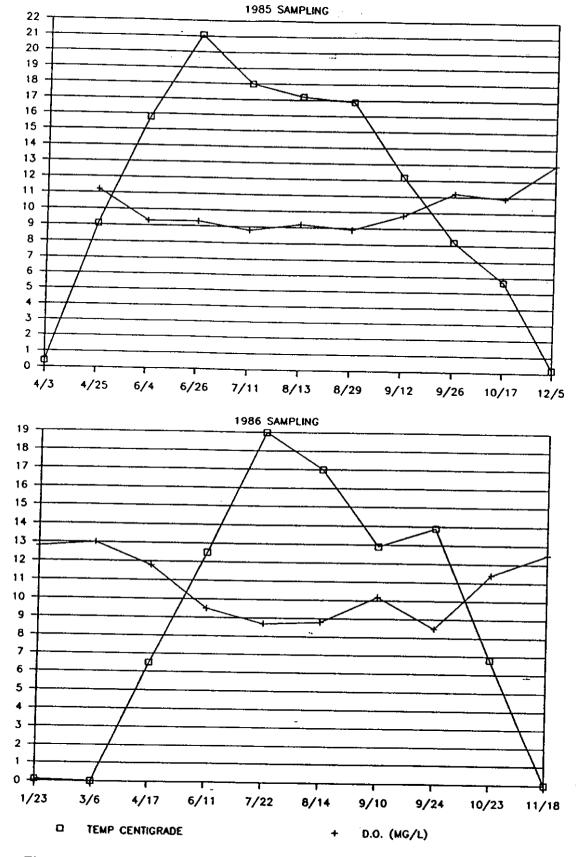


Figure E-1. Continued

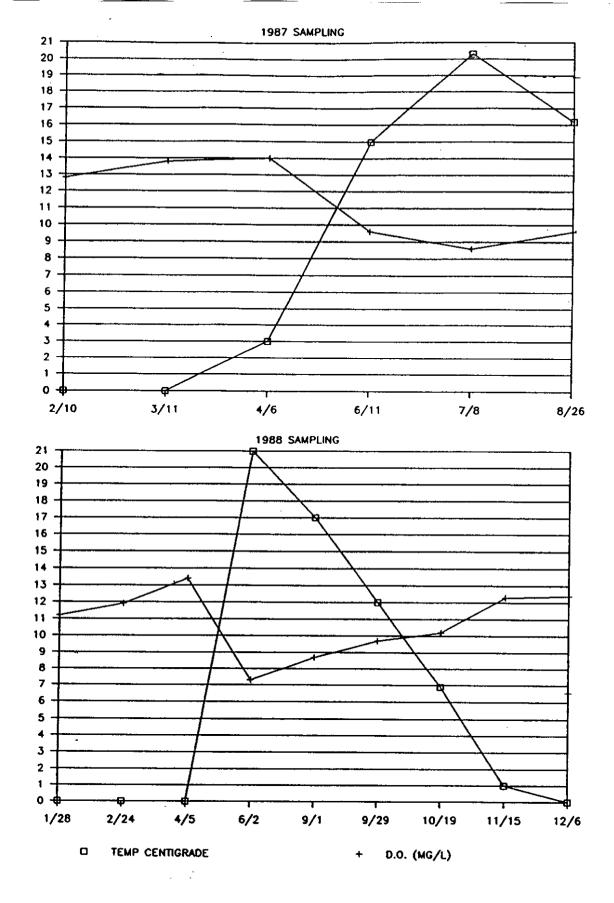


Figure E-1. Continued

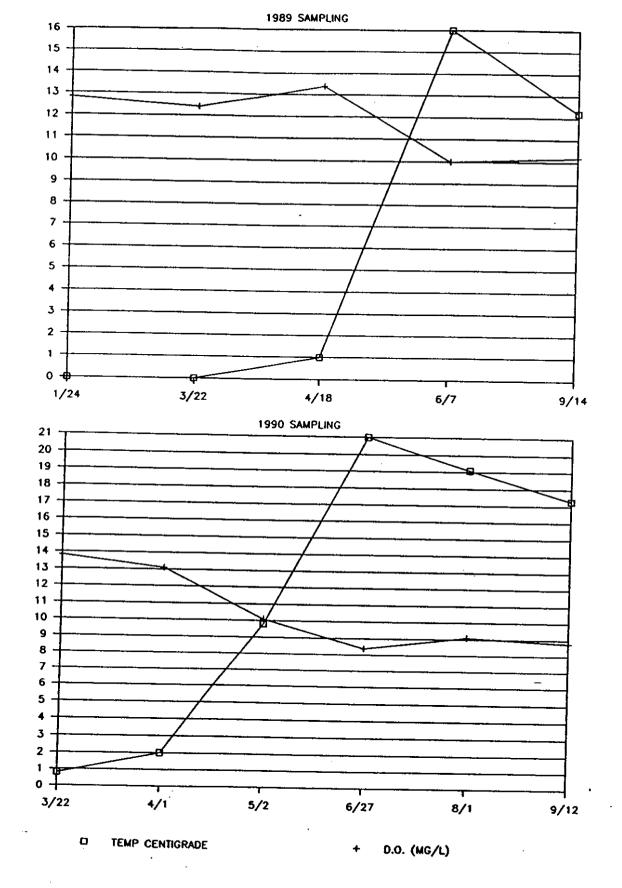
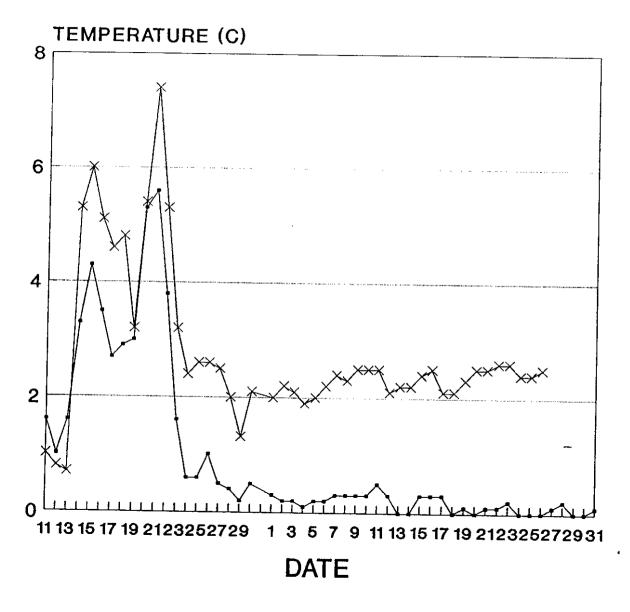


Figure E-1. Continued

### MONTREAL RIVER NOVEMBER AND DECEMBER



- DAILY AVE. (TAILRACE) - DAILY AVE. (USGS)

Figure E-2. Average daily temperatures for the USGS site (upstream) and the Superior Falls tailrace site (downstream).

## MONTREAL RIVER JANUARY AND FEBRUARY

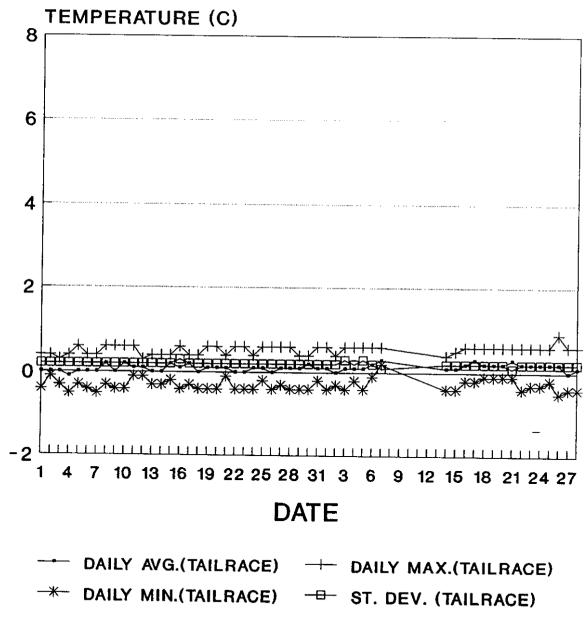
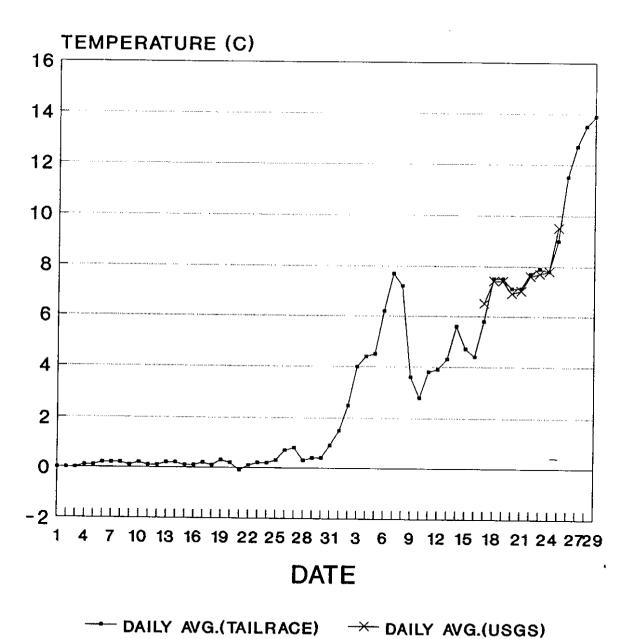


Figure E-2. continued

## MONTREAL RIVER MARCH AND APRIL



DAIL! AVG.(00)

Figure E-2. continued

### MONTREAL RIVER MAY AND JUNE

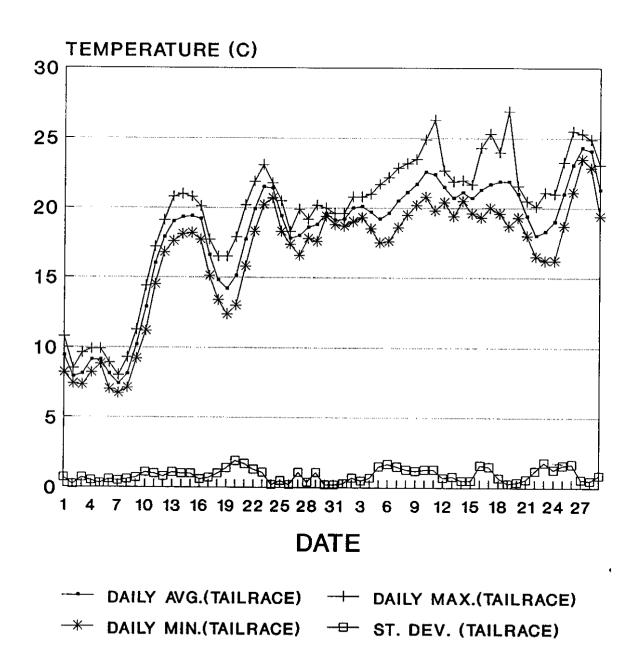
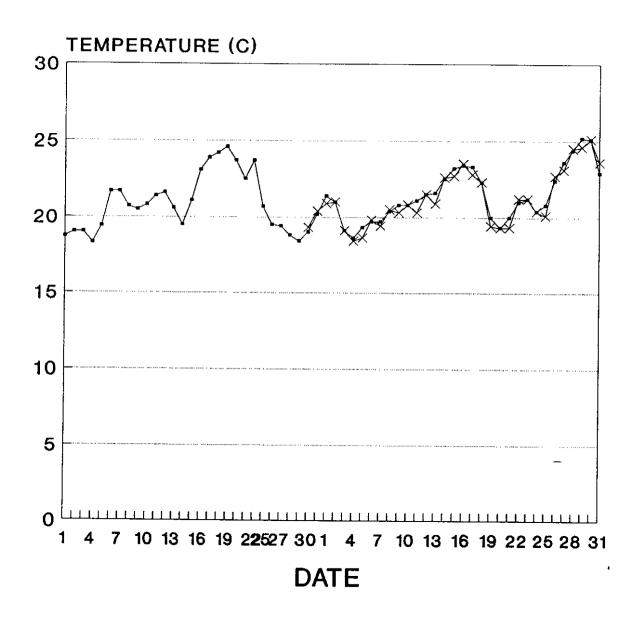


Figure E-2. continued

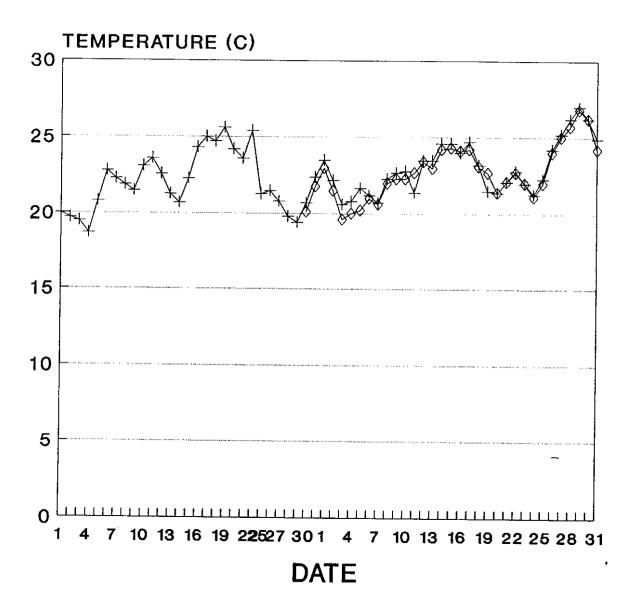
## MONTREAL RIVER JULY AND AUGUST



-- DAILY AVG.(TAILRACE) -- DAILY AVG.(USGS)

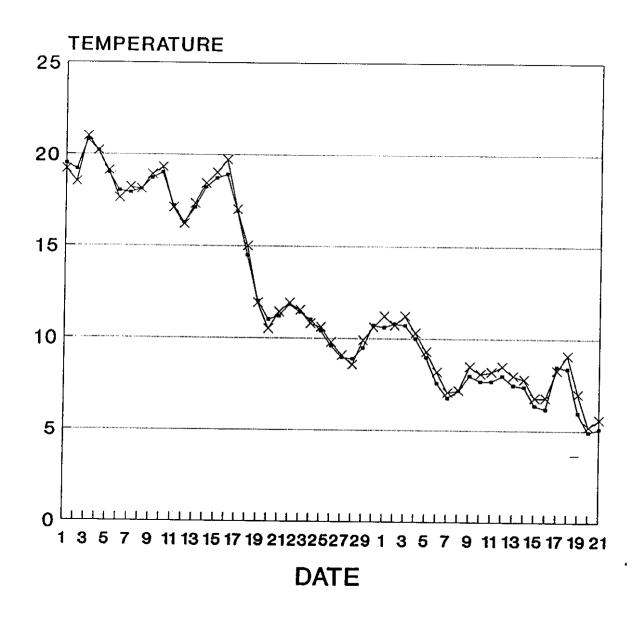
Figure E-2. continued

### MONTREAL RIVER JULY AND AUGUST



--- DAILY MAX.(TAILRACE) --- DAILY MAX.(USGS)

### MONTREAL RIVER SEPTEMBER AND OCTOBER



-- DAILY AVG. (TAILRACE) -- DAILY AVG. (USGS)

Figure E-2. continued



### -United States Department of the Interior -

### FISH AND WILDLIFE SERVICE

Green Bay ES Field Office 1015 Challenger Court Green Bay, Wisconsin 54311-8331 Telephone 414/465-7440 FAX 414/465-7410

June 24, 1997

Mr. Lloyd Everhart Northern States Power Company 100 North Barstow Street P.O. Box 8 Eau Claire, Wisconsin 54702-0008

> re: Review of water quality data pursuant to Lincense Article 415 Superior Falls Hydro Project FERC Project No. 2587

Dear Mr. Everhart:

Your letter of June 3, 1997, requested U.S. Fish and Wildlife Service (Service) review of water quality data for the referenced hydroelectric project.

Due to time, staff, and funding constraints associated with the very large hydroelectric relicensing workload presently facing this office, the Service will not be able to review the water quality data.

We apologize for any inconvenience that this may cause you. If you wish to discuss this further, please call Jim Fossum of my staff at 414-465-7421.

Sincerely,

Janet M. Smith Field Supervisor

cc: Jeff Scheirer, Wisconsin DNR, Park Falls, WI John Suppnick, Michigan DNR, Lansing, MI STATE OF MICHIGAN

#### **NATURAL RESOURCES** COMMISSION

JERRY C. BARTNIK KEITH J. CHARTERS NANCY A. DOUGLAS L. THORNTON EDWARDS, JR. PAUL EISELE WILLIAM U. PARFET LLOYD F. WEEKS



#### JOHN ENGLER, Governor DEPARTMENT OF NATURAL RESOURCES

STEVENS T MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528

K. L. COOL, Director

REPLY TO:

FISHERIES DIVISION LANSING MI 48909-7946

Refer to: 4202.2.22a

August 4, 1997

Mr. Lloyd Everhart Hydro Licensing Northern States Power Company P.O. Box 8 Eau Claire, WI 54702-008

Re:

Superior Falls Hydroelectric Project (FERC No. 2587)

License Article 415 Consultation

Dear Mr. Everhart,

The Department of Natural Resources (Department) has reviewed your letter concerning dissolved oxygen monitoring at the Superior Falls Project dated June 3, 1997 which the Department received by a copy on June 9, 1997. We have completed our review of this information and find it to be wholly inadequate for any determination of the impact of the project on dissolved oxygen for the reasons discussed below.

The dissolved oxygen data reported in this submittal consist of 23 periodic point samples taken during a 14 month period. In addition, the submittal provides a number of historic point samples collected at the upstream USGS station from 1983 to 1990 without any corresponding tailwater information, the key compliance point for determining project impacts. The submittals goes on to compare intake dissolved oxygen values to those in the tailwater and attempts to state that there are no problems with dissolved oxygen at this project. These data are wholly inadequate to fully determine the impact of your facility on downstream organisms for the following reasons: a) the upstream-downstream comparison is incorrect for 1990 as the upstream location should have been above the impoundment's influence zone if you wanted to make a true upstream-downstream comparison, therefore only 9 samples are available for comparison during 1991; b) the sampling could not and did not track the diurnal fluctuation in dissolved oxygen concentrations as no continuous sampling was conducted nor was there sufficient sampling during the key periods; c) one year of data is insufficient given the variability in year to year weather patterns in this part of the country; and d) the USGS data is without any corresponding tailwater information to allow any analysis of project impacts.

It is important to keep in mind that the river below the project is classified as coldwater and the coldwater standard for dissolved oxygen applies to this site which is 7 mg/l of

dissolved oxygen at all times. Even this minimal monitoring shows that the project comes very close to violating coldwater standards in the tailwater during 3 sampling periods with dissolved oxygen saturations falling into the 80-90% range. Additional continuous sampling would have likely found violations during these warm weather periods.

Overall, the data provided with this submittal are very limited in duration and scope and are insufficient to determine that this project will have no impact on water quality. Additionally, these data are insufficient to ensure that this project will meet water quality standards or will protect aquatic life for the life of the license. Given the current inadequate database, the Department recommends that continuous monitoring for dissolved oxygen and temperature on an hourly basis be conducted during the May-October period for three years. This amount of sampling will cover a sufficient range in weather patterns and will have sufficient samples to adequately determine compliance with state water quality standards. A final determination on the frequency of sampling for the rest of the license should be made based upon the data from the three year sampling period.

We appreciate the opportunity to comment on this matter which directly impacts the public trust resources of the State of Michigan for which the Department is responsible. In the future, the Department would appreciate directly receiving such correspondence, instead of receiving a copy, which will improve our response time. If you have any questions on this matter, please contact me.

Sincerely,

Gary E. Whelan

MI DNR FERC Project Coordinator

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FISHERIES DIVISION

(517) 373-1280

cc:

Mr. John Suppnick, MDEQ

Mr. Jeff Scheirer, WDNR

Mr. James Fossum, USFWS

Mr. J. Mark Robinson, FERC



### ~ State-of-Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor George E. Meyer, Secretary William H. Smith, District Director

Park Fails Area Headquarters 875 S. 4th Ave., PO Box 220 Park Fails, WI 54552 TELEPHONE 715-762-3204 FAX 715-762-4348

August 7, 1997

Mr. Lloyd Everhart Northern States Power Company 100 North Barstow Street P. O. Box 8 Eau Claire, WI 54702-008

#### Dear Mr. Everhart:

As directed by the Commission's Order on Rehearing for the Superior Falls Hydro Project (FERC Project No. 2587), Northern States Power Company asked the resource agencies to again review the water quality data to determine whether the existing information is sufficient to demonstrate that project meets Michigan's and Wisconsin's standards for dissolved oxygen in the tailwaters. In addition, NSP also asked us to comment on whether or not the temperature and dissolved oxygen monitoring requirements of Article 415 can be deleted from the license. The following comments summarize Wisconsin's position in this matter.

According to the Lake Superior Basin Water Quality Management Plan (1991), the Montreal River is classified as a coldwater stream capable of supporting a community of coldwater fish and other aquatic life. 1 Downstream of the waterfalls, the Montreal River is classified with the Great Lakes communities because the tributary serves as spawning habitat for anadromous fish from Lake Superior. For these two subcategories, the applicable standards established to protect the coldwater aquatic community place limits on artificial increases in temperature and artificial decreases in dissolved oxygen concentrations. The available dissolved oxygen and temperature data collected upstream and downstream of the project indicate that Wisconsin's water quality standards for cold water communities and Great Lakes communities have been met over the period of record. Since there is no substantial difference between concurrent measurements taken above and below the dam, we agree with the Commission's findings that the impoundment has negligible, if any, effect on water quality or the coldwater aquatic communities in project waters. The run-of-river operational mode authorized for Superior Falls should help to reduce any impacts to water quality by minimizing reservoir retention time. Further, the seasonal minimum flow to the bypassed river reach, required by Article 404 for aesthetic enhancement of visual resources at the waterfalls, may also afford marginal benefits to water quality in the tailwaters by aerating a greater portion of the river's discharge from late spring to early fall when higher temperature could limit dissolved oxygen.

Based on the information at hand, it is our opinion that additional monitoring of dissolved oxygen level and temperature in the tailrace for at least 3 years during September, October, and November would provide little useful information to further verify compliance with Wisconsin's water quality standards. We believe that more benefits could be obtained if future monitoring efforts were instead directed towards ensuring strict adherence to the run-of-river operational mode specified in Article 402. The Department would not object if Article 415 were deleted from the license issued for the Superior Falls Project, provided that the licensee conscientiously follows and closely monitors run-of-river operation over the life of the project.



If you wish to discuss these comments further, please feel free to contact me before you file these consultations with the Commission.

Sincerely, Jeff Scheiner

Jeff Scheirer

Northern Region FERC Project Manager

<sup>1.</sup> In the Final Environmental Assessment, the Commission erroneously stated (at pages 17 and 21): "WDNR requires that the Montreal River and its reservoir meets state water quality standards for recreation, warmwwater fish, and other aquatic life."

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

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

INTERNET: http://www.deq.state.mi.us RUSSELL J. HARDING, Director

June 18, 1997

REPLY TO:

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

Mr. Lloyd Everhart
Hydro Licensing
Northern States Power Co.
100 North Barstow Street
P.O. Box 8
Eau Claire, Wisconsin 54702-0008

Dear Mr. Everhart:

SUBJECT: Superior Falls Hydroelectric Project-FERC Project No. 2587

Review of Water Quality Data Pursuant to License Article 415

We have reviewed the available data on temperature and dissolved oxygen (DO) effects from the Superior Falls Hydroelectric Project as you requested in your June 3, 1997 letter. We do not see a need for further monitoring at this facility. Based on this review, we have concluded that the temperature standard is not naturally met upstream of the project and that the project has an insignificant effect on temperature in the river. Although the DO data are scant, there is no evidence for serious DO depletion from this project and since it only affects a very short stream reach (800 feet) that will not meet the temperature standard for trout naturally, we do not see any need for further monitoring.

If you have any questions about this recommendation, please feel free to contact me.

Sincerely,

John Suppnick

Great Lakes and Environmental

Assessment Section

Surface Water Quality Division

517-335-4192

cc: FERC

Gary Whelan, Fisheries Division Jerry Saalfeld/Superior Falls FERC File

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