

Exhibit A – Flows

On December 30, 1991, Miller Hydro Group, following consultation and negotiation with the Resource Agencies, filed with the Federal Energy Regulatory Commission (FERC) the results of an instream flow study and recommendations for a minimum flow plan based on that study. The plan included a seasonal flow schedule, and offsite mitigation in the form of an annual payment to the Maine Department of Inland Fisheries & Wildlife for a fisheries management program in the Lower Androscoggin River Basin. On January 26, 1994, the FERC issued the attached “Order Approving and Modifying Minimum Flow Releases and Amending License”, which contained the joint recommendations of the Licensee and the participating Resource Agencies. Copies of the 1991 comment letters from the U. S. Fish & Wildlife Service, the Maine Department of Marine Resources, the Maine Department of Inland Fisheries & Wildlife, and the Atlantic Sea Run Salmon Commission. Copies of these letters are attached as part of this exhibit.

This plan was again subject to agency review and request for modification in conjunction with the 1998 license amendment request. No modifications were requested at that time and the license amendment was issued upon the same terms as the flow plan approved in 1994. Comments relating to flows were received from the following Resource Agencies:

Maine Department of Inland Fisheries & Wildlife, April 15, 1998
Maine Department of Environmental Protection, April 16, 1998
U. S. Fish & Wildlife Service, April 27, 1998
Maine Department of Marine Resources, April 27, 1998

Copies of these letters are attached as part of this exhibit.

Wayne -
FYI
Kevin

UNITED STATES OF AMERICA 66 FERC 62, 041
FEDERAL ENERGY REGULATORY COMMISSION

Miller Hydro Group, Inc.

Project No. 3428-029--Maine

ORDER APPROVING AND MODIFYING MINIMUM FLOW RELEASE PLAN
AND AMENDING LICENSE
(ISSUED JANUARY 26, 1994)

On December 30, 1991, the Miller Hydro Group, licensee for the Worumbo Project (FERC No. 3428) filed the results of an instream flow study and, based on study results, recommendations for changing the project's minimum flow requirement. The filing was supplemented by a letter filed January 8, 1992. The filing of this information was required by article 32 of the project license. 1

Article 32 stipulates, in part, that the licensee study the relationship of various minimum flow releases, including the interim minimum flow specified by article 31, 2 to fish habitat in the 850-foot-long bypass reach of the Androscoggin River between the Worumbo Dam and the powerhouse. Article 32 further states that the licensee shall conduct the study as approved by the Commission and file a report, and any recommendations for continuation or modifications of minimum flow releases as deemed necessary.

The study plan was filed on June 2, 1987 and approved by the Commission on August 5, 1987. 3 Following consultation with the agencies, the licensee made habitat improvements below the dam in 1989 and 1990, prior to conducting the study. The study was conducted jointly by the licensee and the agencies in August and September 1990. Following completion of the study and analysis of the results, the licensee and agencies engaged in extensive consultations and negotiations concerning the appropriate flows, including seasonal flows. The licensee's proposal, as described below, represents a negotiated agreement expressing the joint recommendations of the licensee and resource agencies.

1 33 FERC 62,430 (1985)

2 For the protection of fish resources, article 31 requires, in part, that the licensee discharge a minimum flow of 25 cubic feet per second (cfs) as measured immediately downstream of the dam.

3 40 FERC 62,128 (1987)

Study Results

The bypass reach was divided into five sections, and habitat within each section was evaluated at flows of 25, 100, 200, 300, and 400 cfs using a study team Delphi consensus method. Using this method, a team of expert observers viewed each flow level and collectively rated habitat suitability for the species and life stages of concern. Group consensus was reached using numerical rating scales derived from accepted Suitability Index (SI) curves or word models for specific habitat parameters and fishing opportunity.

The species and life stages of interest were adult brown trout, adult smallmouth bass, and juvenile Atlantic salmon. The effect of flows on fishing opportunities was also considered. The study showed, in summary, that a flow of 300 cfs maximizes the amount of habitat for the species/life stages of concern. Fishing opportunities were determined to be greater at the higher flows.

Recommendations

Based on the results of the study and consultations and negotiations conducted during meetings held on January 9, February 6, May 2, and October 1, 1991, the licensee proposes the following six measures relative to minimum flow releases.

(1) Release minimum flows at the project according to the following schedule.

September 1 - October 31	200 cfs
November 1 - November 30	50 cfs 4
December 1 - April 15	50 cfs
April 16 - May 31	300 cfs
June 1 - June 30	200 cfs
July 1 through August 31	100 cfs

(2) Provide funding of \$25,000 per year for the remainder of license term (i.e., until the year 2025) to the Maine Department of Inland Fisheries and Wildlife (DIFW) for a fisheries management program in the lower Androscoggin River basin. This amount will be increased or decreased, as appropriate, by the Consumers Price Index (CPI) for the previous year.

4 Unless the downstream fishway is operational, in which case 85 cfs.

(3) The DIFW will be the lead agency to act as the resource agency contact, with sole authority to permit exception to the proposed bypass flows.

(4) The licensee will modify the dam spillway as necessary to concentrate bypass flows over the crib (i.e., west) side of the dam.

(5) The licensee may deviate from the proposed bypass flows without penalty under any of the following conditions:

- A. operating emergencies;
- B. by order of any jurisdictional government agency; and
- C. as authorized in advance by the DIFW.

(6) In addition, the licensee may undershoot the proposed minimum flow up to 50 percent for periods not to exceed one hour, provided that only one such underrelease may be made in a 24-hour period without authorization from the DIFW.

Agency Comments

The licensee consulted with the DIFW, the Maine Department of Marine Resources (DMR), the Atlantic Sea Run Salmon Commission (ASRSC), and the U.S. Fish and Wildlife Service (USFWS), in the development and implementation of the study, and in the interpretation of study results. This consultation was documented in letters and in minutes of meetings held to discuss study results and to develop flow recommendations.

In general, the DMR deferred comments to the DIFW, since the target species were the jurisdiction of the latter agency. The ASRSC's participation was limited due to lack of personnel resources. By letter dated December 3, 1991, the ASRSC indicated general agreement with the licensee's proposed measures, but stated that two "minor issues" needed to be resolved. However in a second letter, dated December 27, 1991, the ASRSC provided clarification of its December 3, 1991 letter and stated that the proposed measures should provide the opportunity to accommodate all the fishery management goals and objectives on the lower river.

The DIFW and the FWS were intimately involved in the development and implementation of the study, the interpretation of study results, and the development and negotiation of flow recommendations. Consequently, the proposed measures reflect the inputs of these agencies. Agency recommendations included into the proposed measures include designation of the DIFW as the lead agency to act as the resource agency contact and the provision of off-site mitigation, implemented through the licensee's funding

of the agency-developed fisheries management plan. The DIFW and the FWS expressed concurrence with the proposed measures by letters dated December 4, 1991 and December 10, 1991, respectively.

Discussion

The instream flow study indicated that a flow of 300 cfs maximized the amount of quality habitat available in the 850-foot-long bypass reach between the Worumbo Dam and the project's powerhouse. While the licensee agreed that 300 cfs would be desirable at certain times of the year, corresponding to specific needs, the licensee felt that the need for higher flows during other times of the year (e.g., winter) was not well documented. The licensee argued that the year-round release of 300 cfs would seriously impact project economics.

After extensive negotiations, all parties agreed that other off-site mitigation could compensate for loss of habitat resulting from a flow regime whereby less than the optimum amount of habitat was present during some periods of the year. This mitigation would be funded by the licensee's annual payments of \$25,000 to the DIFW.

The proposed measures reflect a compromise wherein the licensee's proposed flow regime would serve to provide optimum habitat at those times when a need has been identified. While the proposed releases provide less habitat at other times of the year, this loss is offset through the funding of off-site mitigation to be directed at identified problems.

However, the licensee's proposed measures do not include a description of how the licensee proposes to measure the minimum flow releases or a schedule for reporting any deviations from the specified flows. Because the licensee does not currently measure project inflows or outflows, it will be probably be necessary to install stream gaging equipment in the bypass reach in order to measure and document compliance with the required minimum flow releases. Consequently, the licensee's proposal should be modified to state that the licensee will develop and file, for Commission approval, a plan for measuring and reporting minimum flow releases in the bypass reach. The plan should be developed in consultation with the DIFW. Although the proposed minimum flows will be effective as of the issuance of this order, the licensee should be granted a reasonable period of time, ninety days, to develop and file the gaging plan.

Additionally, the proposed plan contains no provisions for reporting the mitigative measures undertaken by the DIFW with the \$25,000 annual payments. To ensure that appropriate measures are being undertaken, the licensee should consult with the DIFW and file annual reports, by March 1 each year, describing the

measures implemented during the previous year. The Commission should reserve the right to modify the procedures for identifying and implementing the mitigative measures to be funded with the \$25,000 annual payments, should the reports indicate that such changes would serve to better protect and enhance the fishery resources of the Androscoggin River.

In summary, the licensee's proposed flow regime and related measures, modified as described above, would serve to protect and enhance fisheries resources in the project area. Consequently, the proposed measures, as modified, should be approved.

The Director orders:

(A) The licensee's recommendations for minimum flow releases, filed on December 31, 1991, as modified in paragraphs (C) and (E), below, are approved.

(B) Article 31 is hereby amended to read as follows:

Article 31. For the protection and enhancement of fisheries resources, the licensee shall discharge from the Worumbo Dam Release minimum flows, as measured immediately downstream from the dam, according to the following schedule.

September 1 - October 31	200 cfs
November 1 - November 30	50 cfs 5
December 1 - April 15	50 cfs
April 16 - May 31	300 cfs
June 1 - June 30	200 cfs
July 1 through August 31	100 cfs

These minimum flows may be temporarily modified if required by operating emergencies or by order of any jurisdictional government agency, or as authorized in advance by the DIFW. Further, the licensee may undershoot the stated minimum flow up to 50 percent for a period not to exceed one hour, provided that only one such underrelease may be made in a 24-hour period without authorization from the DIFW.

5 Unless the downstream fishway is operational, in which case 85 cfs.

(C) Within 90 days from the date of issuance of this order, the licensee shall file, for Commission approval, a plan for measuring and documenting compliance with the minimum flow releases required in (B), above, and for reporting any deviations from the scheduled flows.

The gaging plan shall be developed in consultation with the DIFW. The developed plan shall contain documentation of consultation with the DIFW. Upon approval of the plan by the Commission, the licensee shall implement the plan, including any changes ordered by the Commission.

(D) The licensee shall provide funding in the amount of \$25,000 per year for the remainder of license term to the Maine Department of Inland Fisheries and Wildlife (DIFW) for mitigative measures to be implemented through a fisheries management program in the lower Androscoggin River basin. This amount will be increased or decreased, as appropriate, by the Consumers Price Index (CPI) for the previous year.

(E) The licensee shall consult with the DIFW and file annual reports, by March 1 each year, describing the mitigative measures implemented during the previous year with the \$25,000 annual payments. The Commission reserves the right to modify the procedures for identifying and implementing the mitigative measures to be funded with the \$25,000 annual payments, should the reports indicate that such changes would serve to better protect and enhance the fishery resources of the lower Androscoggin River basin.

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

J. Mark Robinson
Director, Division of Project
Compliance and Administration



United States Department of the Interior

RECEIVED DEC 12 1991

FISH AND WILDLIFE SERVICE
400 RALPH PILL MARKETPLACE
22 BRIDGE STREET
CONCORD, NEW HAMPSHIRE 03301-4901

December 10, 1991

REF: FERC #3428

Mr. Mark Isaacson
Miller Hydro Group
P.O. Box 97
Lisbon Falls, Maine 04252

Dear Mr. Isaacson:

We concur with the minimum flows for the bypassed reach at the Worumbo Hydroelectric Project that are proposed in your memorandum, dated November 20, 1991. As demonstrated in your instream studies, the recommended flows will protect and enhance aquatic resources below the dam during times of peak fishing activity in the spring.

We had originally recommended that the peak habitat flows (300 cfs) be maintained throughout the year. Your current proposal calls for discharges below 300 cfs outside of the spring months. Although we believe that this will likely result in reduced use by fish and other aquatic resources in the bypassed reach, we would support off-site mitigation as a means of compensating for unavoidable losses. When combined with the proposed releases at the dam, these off-site measures should ensure that fish and other aquatic resources receive equitable treatment.

As discussed in your October 1, 1991 meeting with the natural resource agencies, we believe that the Maine Department of Inland Fisheries and Wildlife (MDIFW) would be best suited to carry out any off-site mitigation for impacts at Worumbo in conjunction with their regular fishery management activities on the lower Androscoggin River. This will require continuous funding in order to ensure that the mitigation is accomplished and maintained. Therefore, your proposed annual payment to MDIFW of \$25,000 (with adjustment for inflation) throughout the remainder of your license term (i.e., until November 25, 2025) is appropriate.

Your filing to the FERC on bypass flows at Worumbo will reflect a need to include off-site mitigation in addition to discharges at the dam if long-term fishery management objectives for the lower Androscoggin River are to be accomplished. We ask that you stress this point in your filing, and include the agencies in any subsequent negotiations with FERC regarding this matter.

We have no objection to the other conditions mentioned in your memorandum, including those dealing with agency contact and compliance monitoring. If you have any questions regarding these comments, please contact Gordon Russell at (207) 827-5938.

Sincerely yours,

A handwritten signature in black ink, reading "Gordon E. Beckett". The signature is written in a cursive style with a large, stylized initial "G".

Gordon E. Beckett
Supervisor
New England Field Offices

cc: RO/FWE-Reading File
ME Anad. Fish Coord.
FERC, NYRO
FERC, Wash., D.C. (OHL/DPCA)
ME DEP, Augusta (Dana Murch)
ME IFW, Augusta
ME DMR, Augusta
ME ASRSC, Bangor
OEA, T. Martin
FWE:GRussell:12-10-91:(207)827-5938



RECEIVED DEC 13 1991

John R. McKernan, Jr.
Governor

William J. Brennan
Commissioner

DEPARTMENT OF MARINE RESOURCES

Telephone (207) 289-6550
FAX (207) 289-5758

December 5, 1991

Mark Isaacson, Vice President
MILLER HYDRO GROUP
PO Box 97
Lisbon Falls, ME 04252

Re: Worumbo Hydro, FERC #3428
Bypass Flow Agreement

Dear Mr. Isaacson:

This is in response to your request for our concurrence with a bypass flow agreement as outlined in your memo of November 20, 1991, to fishery agency staff of ASRSC, USFWS, IF&W, and DMR. We have determined that the primary species of concern in the Worumbo bypass reach are resident freshwater species and anadromous salmonids. Therefore, we defer to the Department of Inland Fisheries and Wildlife and the Atlantic Salmon Commission on the issue of appropriate minimum bypass flows. We will continue to be actively involved in addressing fish passage needs at the Worumbo Project, including the possibility of future fish passage at the spillway adjacent to the bypass reach. On the issue of bypass flows, we feel that the Department of Inland Fisheries and Wildlife should be the lead contact agency with authority to permit exception to the bypass flow conditions specified.

Thank you for the opportunity to comment on the proposed bypass flow agreement. If you need further information or clarification, please contact Lewis Flagg at 289-5275.

Sincerely,


WILLIAM J. BRENNAN
COMMISSIONER

WJB/jcw

cc: Lew Flagg, DMR
Steve Timpano, IFW
Gordon Russell, USFWS
Ed Baum, ASRSC
Dana Murch, DEP



RECEIVED DEC 6 - 1991

John R. McKernan, Jr.
Governor

William J. Vail
Commissioner

DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

Telephone (207) 289-3371

December 4, 1991

Mark Isaacson
Miller Hydro Group
P.O. Box 97
Lisbon Falls, ME 04252

RE: Worumbo Hydroelectric Project
FERC No. 3428
Worumbo Bypass Flows

Dear Mr. Isaacson:

We have reviewed your memorandum to the agencies, dated November 20, 1991, which outlines the tentative agreement negotiated between Miller Hydro Group and the Resource Agencies regarding bypass flows at the Worumbo Project. The memorandum includes minimum flows to be released to the bypass reach on a variable release schedule by month, and six special conditions.

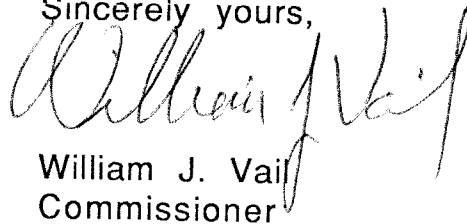
Special condition No. 1 specifies that \$25,000 per year (to be increased each year by the previous years CPI) is to be provided to MDIF&W, for the remaining term of the current license, to implement a fisheries management program in the Lower Androscoggin River. We concur with this condition and note that the agencies are to develop a fisheries management plan for implementation of management goals and objectives on the lower river utilizing this funding.

Special condition No. 2 specifies that the Resource Agencies will designate a single lead agency to act as the contact agency. During the negotiations it was generally agreed that MDIF&W would be the lead agency. We concur with this condition.

We are also in agreement with the rest of the special conditions, as well as the schedule of flow releases, with no further notes beyond an assumption that the FERC will likely require some form of standard compliance monitoring for the bypass flow releases. This will satisfy our concerns for this issue, which was voiced as an afterthought by our department after your memorandum of agreement was received.

We appreciate the efforts which went into reaching this negotiated agreement. If there are any questions regarding these comments please contact Steve Timpano at 289-3286.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "William J. Vail".

William J. Vail
Commissioner

WJV/wb

cc: S. Pierce, MDIF&W
L. Flagg, MDMR
E. Baum, ASRSC
D. Murch, MDEP
G. Russell, USF&WS

John R. McKernan, Jr.
Governor

COMMISSION

William J. Vail, Commissioner
Dept. Inland Fisheries & Wildlife
Chairman

William Brennan, Commissioner
Dept. Marine Resources



ATLANTIC SEA RUN SALMON COMMISSION
P.O. Box 1298
Bangor, Maine 04401

PUBLIC MEMBERS

Richard J. Warren
Bangor, Maine

Paul Fernald
Brunswick, Maine

Peter Wass
Cherryfield, Maine

December 3, 1991

Mark Isaacson
Miller Hydro Group
P.O. Box 97
Lisbon Falls, Maine 04252

RECEIVED DEC 6 - 1991

RE: Worumbo Hydro Project Bypass Flows

Dear Mr. Isaacson:

This letter is to notify you of my general agreement with the proposed Worumbo bypass flows as outlined in the minutes of the October 1, 1991 agency consultation meeting and your Memorandum of November 20, 1991. However, I recommend that the following two minor issues be resolved now or at sometime within the near future:

1. At the October 1 meeting, MHG proposed a $\pm 15\%$ fluctuation in minimum flows for short (0.5 hr) periods, while in the November 20 Memorandum MHG proposes (item 5) to be allowed to "undershoot the minimum requirement by an amount up to 50 % ...for a period not to exceed one hour." In all other minimum flow discussions and/or negotiations that I've been involved in, a minimum flow is just that. Therefore, I recommend that if and when an Atlantic salmon restoration program is initiated on the Androscoggin River, the flows proposed in your October 20, 1991 Memorandum shall be instantaneous minimums.
2. At the October 1 agency consultation meeting, MHG proposed to provide funding to DIFW for enhancement projects that could also benefit Atlantic salmon, while the November 20, 1991 Memorandum (item 1) refers to funding DIFW for a fisheries management program in the Lower Androscoggin Basin. Since the Maine DIFW has no jurisdiction over Atlantic salmon, nor any management authority for that species, the proposed funding probably wouldn't be utilized to benefit salmon. Therefore, I recommend that if and when an Atlantic salmon restoration program is initiated on the Androscoggin River, MHG should be prepared to provide the resources necessary to mitigate for the loss of Atlantic salmon habitat that will occur due to the proposed flow regime (e.g. habitat improvement and/or revised flow regimes, etc.)

Mark Isaacson
December 3, 1991

Page 2

I trust that you will be able to accommodate the above recommendations in the final proposal to the FERC. Thank you for the opportunity to comment upon the proposed Worumbo Bypass Flows.

Sincerely yours,

A handwritten signature in cursive script that reads "E.T. Baum". The signature is written in dark ink and is positioned below the "Sincerely yours," text.

Edward T. Baum
Program Coordinator

cc Flagg, DMR
Murch, DEP
Timpano, IFW
Russell, USFWS

MILLER HYDRO GROUP

P.O. BOX 97
LISBON FALLS, MAINE 04252

TELEPHONE
(207) 353-4111

December 23, 1991

Edward T. Baum, Program Coordinator
Atlantic Sea Run Salmon Commission
P. O. Box 1298
Bangor, Maine 04401

RE: Worumbo Bypass Flows

Dear Mr. Baum:

Thank you for your letter of December 3, 1991 in which you express general agreement with the proposed Worumbo bypass minimum flows as presented in our memo of November 20, 1991. At the meeting held on October 1, 1991, to which you declined invitation to participate, various flow and off-site mitigation scenarios were put forth by the participants for discussion purposes. Discussions also took place concerning compliance and enforcement issues. The meeting ended with the participants agreeing that Miller Hydro Group would draft a minimum flow agreement proposal based upon these discussions. On November 20, 1991 that draft proposal was submitted to the Resource Agencies. Subsequently, all of the agencies have responded with letters of agreement. The purpose of this letter is to respond to the two "minor" issues you raise in your letter.

1. At the October 1, 1991 meeting, during discussions concerning enforcement and compliance issues, Miller Hydro Group suggested that it might request an agreement recognizing that small fluctuations in minimum flow for short periods are occasionally needed for project operations. At that time the figures $\pm 15\%$ and one half hour were mentioned for discussion purposes. The minutes of that meeting indicate no objection to this concept by any of the participating agencies. The actual proposal of November 20, 1991, while differing from the figures used in discussion at the meeting, reflect subsequent internal analysis of the operational situations which may arise from time to time during which it becomes necessary to adjust flows momentarily. In the past, the Resource Agencies have consistently authorized such events. All of the Resource Agencies participating in the October 1 meeting have concurred with the entire proposal including the compliance monitoring and enforcement sections. It should also be noted that a record of all events during which flows are

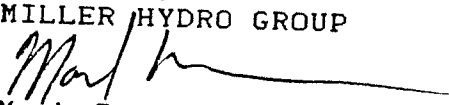
less than minimum, including time frame and purpose, is maintained for FERC inspection and compliance review purposes. This record is, of course, also available for inspection by the lead agency designated to act as the contact/enforcement agency.

2. According to the minutes of the October 1, 1991 meeting, the participants discussed mitigation of seasonal flows less than 300 cfs "...by habitat improvement in the vicinity of the Bypass Channel (say off the mouth of the Little River) and/or by funding of DIFW to conduct fisheries management projects on the lower Androscoggin River." The agencies also suggested the possibility that "...the funding requested for DIFW projects could be used to provide enhancements for Atlantic salmon if that restoration program should be activated ...". The off-site mitigation funding proposed by Miller Hydro Group in its November 20 memo is to be used for fisheries management programs in the Lower Androscoggin River Basin. No further restriction is implied in the proposal. Indeed, it is anticipated that, as stated by the Commissioner of DIFW in his letter concurring with the agreement, "...the agencies are to develop a fisheries management plan for implementation of management goals and objectives on the lower river utilizing this funding". The MHG proposal was formulated with the possible future salmon restoration activities in mind as discussed by the participants at the October 1 meeting. Miller Hydro Group has, in fact, proposed funding equal to the highest level and for the longest period (the entire remaining license period) discussed at the meeting. Miller Hydro Group has not reserved a role in the development of the fisheries management plan, except to require that all such activities take place within the confines of the Lower Androscoggin River Basin, and has no objection to the use of part, or even all, of the funding provided in the agreement for salmon restoration if and when such a program is initiated on the Androscoggin River.

However, we take strong objection to your suggestion that Miller Hydro make an open-ended commitment to provide additional funding for salmon restoration in the future. In short, that is not part of the agreement we have reached with all other agencies who actively participated in the process. This eleventh hour attempt to extract further concessions from Miller Hydro does not accomplish that objective, but it does place in jeopardy the entire agreement which has been reached after two years of difficult negotiations.

A copy of your letter of December 3, 1991 will be included in our report to the Federal Energy Regulatory Commission as will copies of the letters of agreement from the other Resource Agencies. In addition, a copy of this response to your concerns will also be included in our report. If you have any questions, please contact us.

Sincerely,
MILLER HYDRO GROUP


Mark Isaacson
Vice President

Inland Fisheries & Wildlife

Inland Fisheries & Wildlife
284 State Street
41 State House Station
Augusta, ME 04333-0041

Phone: (207) 287-3286
FAX: (207) 287-6395
email: steve.timpano@state.me.us

Wednesday, April 15, 1998

Mark Isaacson, Vice President
Miller Hydro Group
P.O. Box 97
Lisbon Falls, Maine 04252-0097

Re: Worumbo Hydro Project, FERC No. 3428-Maine
Draft Application for Amendment

Dear Mark,

We have reviewed the Draft Application for Amendment for the Worumbo Hydro Project as discussed at the preconsultation meeting held March 30, 1998. The amendment being requested is to raise the headpond by 1.5 feet and to allow headpond fluctuations of that amount to provide for marketing spinning reserve capacity or limited peaking operation. The Draft appears to address most of the issues identified at the meeting, but we would like to offer the following comments and identify items which we feel should be more thoroughly documented or clarified in any final application.

FISHERIES:

Instream Flows: Our principal concern was for maintenance of required flows in the bypass reach, and for provision of adequate downstream flows during any drawdown/refill mode of operation. The Draft Application addresses both of these issues satisfactorily in concept. Bypass flows are to be provided as per the existing license, and a downstream release below the project (bypass and gate or turbine discharge combined) of 1700 cfs, or inflow, whichever is less, will be maintained during any headpond refill periods. Details as to final design and actual operational protocols to assure the specified flows are released can be elaborated upon more fully in the final application.

Impoundment Fluctuations/Fisheries Habitat: The Draft does not contain any description of freshwater fisheries resources. We would recommend at least a brief statement on habitat characterization and description of existing fisheries in any final application. Based upon our current knowledge of this section of the river and discussions at the meeting it appears the proposed 1.5 foot increase in headpond elevation will be unlikely to cause any substantial changes in the existing freshwater fisheries. Present fisheries management is for warmwater species, principally smallmouth bass, pickerel, and yellow perch, and includes forage species such as minnows and white suckers. Brown trout have been experimentally stocked within the project area and assessment is ongoing. The headpond is considered to provide suitable habitat for at least seasonal salmonid management at this time. The additional small amount of riffle/run area at the upstream end of the impoundment which would be partially inundated by raising the headpond 1.5

feet is expected to cause little overall change in suitability for salmonid management purposes. To the best of our knowledge present warmwater gamefish populations are maintaining themselves under current operating regimes. The proposed 1.5 foot headpond elevation change, and periodic fluctuation within that range, are likely to be tolerated by present species in terms of spawning success and maintenance of adequate adult habitat. We would also note that greater fluctuations have been permitted at upstream hydroelectric projects (Gulf Island Pond , Lewiston Falls).

Can the various flow graphs presented in the Draft Application be revised to be more readable or have additional verbal description of what they represent? As presented they are difficult to readily understand and interpret. Also the presentation to answer the question raised at the meeting re: how frequently the project might be operated to supply spinning reserve, and thereby result in headpond drawdown, is difficult to interpret. The copy of the CMP filing which is included as Exhibit C in the Draft appears to simply reference percentage of spinning reserve available at Monty Station and Gulf Island as part of the whole CMP system, not probability or how often they were actually called upon to provide that spinning reserve. Can that be clarified? We understand that predicting frequency of drawdowns also depends upon market and contract provisions which are simply unknown at this time. Given that freshwater fisheries resources are not expected to be substantially affected by the degree of fluctuation the question of "how often" is more a matter of record than an issue for us.

Fish Passage: Fish passage is not required at Worumbo for inland (freshwater) fisheries management at this time. We will defer to the Department of Marine Resources and the U.S. Fish & Wildlife Service review of adequacy of existing facilities under the proposed revised water management regime.

Water Quality: From the discussion at the meeting it is our understanding that the proposed physical and operational changes are unlikely to substantially alter present water quality conditions, and therefore not change fisheries habitat suitabilities. Soil erosion issues regarding riverbank stability with the increased headpond level were also discussed and the consensus was that this was not likely to be a problem. Given the seasonal changes in water elevations the river presently experiences, and that higher headpond levels had been maintained in the past, we believe this issue has been adequately addressed. The proposed future monitoring to identify and remediate any developing problem areas is appropriate.

WILDLIFE:

Endangered & Threatened Species, Essential Habitats; No Endangered or Threatened species of wildlife are known to occur within the Worumbo Project area and no Essential Habitats for endangered species have been designated. There may be occasional transient passage of Bald Eagles or Peregrine Falcons through the project area.

Significant Wildlife Habitats; No Significant Wildlife Habitats as recognized under Maine's Natural Resources Protection Act (e.g. high or moderate value Waterfowl and Wading Bird Habitats, Deer Wintering Areas or travel corridors,etc.) have been identified for the project area.

As noted in the draft application, steep banks along this section of the river limit wetland development. Our Department rates this segment of the river itself as providing low value waterfowl and wading bird habitat. We concur that raising the headpond elevation 1.5 feet is unlikely to substantially affect wetland wildlife habitat. Would attaching a copy of the pertinent section of the National Wetlands Inventory map in the final application be advisable to go along with the narrative?

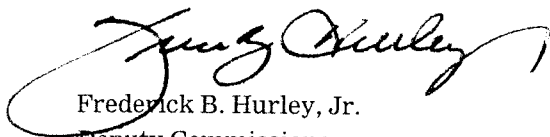
No other wildlife resources have been identified of concern with the proposed project modifications.

PUBLIC RECREATIONAL ACCESS:

Angler Access: It appears the present trailered boat launching facility located at the confluence with the Sabattus River will continue to provide adequate access to the headpond. Based upon the information provided, the ramp will remain useable and clearance under the Rte. 196 and railroad bridges between the launch site and the headpond will also remain satisfactory even with the headpond elevation increase. No changes to downstream walk-in angler access below the Project are anticipated.

Based upon the above considerations, we see no objections or substantial concerns with the amendment as proposed. Thank you for the opportunity to comment on the proposed project modifications. If there are any questions please contact Steve Timpano, Environmental Coordinator, at the above address or by telephone at (207) 287-3286.

Sincerely,



Frederick B. Hurley, Jr.
Deputy Commissioner

cc; FERC Coordinating Committee
Gordon Russell, USF&WS
John Boland/Philip Bozenhard, Gray Regional Hdqtrs.
FBH/sat



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED APR 20 1998

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

April 16, 1998

Mark Isaacson, Vice President
Miller Hydro Group
PO Box 97
Lisbon Falls, ME 04252-0097

RE: Draft Application for Amendment of License
Worumbo Hydroelectric Project
FERC No. 3428

Dear Mark:

The Department has reviewed your letter of April 10 and the accompanying draft application for amendment of license for the existing Worumbo Hydro Project, FERC No. 3428, located on the Androscoggin River in Lisbon Falls.

I understand that Miller Hydro Group is proposing to increase generation at the project by installing crest gates and flashboards to increase the normal full pond elevation of the impoundment by 1.5 feet, while maintaining existing bypass flows.

I also understand that Miller Hydro Group is proposing to increase the value of generation at the project by drawing the impoundment down by up to 1.5 feet to provide a marketable source of reserve capacity, while maintaining a minimum flow release from the project of 1700 cfs or inflow, whichever is less, during impoundment refill.

The Department has concluded that the proposed amendment will not have a significant impact on existing water quality. I understand from the data you have submitted to the Department that the increase in full pond level will increase the volume of the impoundment by about 285 acre-feet from the existing 1700 acre-feet. I also understand that, even at 7Q10 flow (2000 cfs), the impoundment will refill in about 11 hours after being drawn down by a full 1.5 feet. Neither of these conditions will result in any significant increase in travel time through the impoundment; as a result, no adverse water quality impacts are expected.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

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312 CANCO ROAD
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PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

Letter to Mark Isaacson
April 16, 1998
Page 2

The Department will need to approve the proposed amendment in project design and operation as a modification of the Maine Waterway Development and Conservation Act Permit and Water Quality Certification previously issued for the project (DEP #L-10930-35-A-N dated June 12, 1985, and as subsequently modified). An application form is enclosed for your use. When filing the completed application, please include a check for the processing fee of \$103 and two(2) copies of the license amendment application as filed with FERC.

Also, the final amendment application as filed with FERC should discuss any instream work (especially cofferdamming) associated with the installation of the proposed crest gates and hinged flashboards.

Please call if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dana Paul Murch".

Dana Paul Murch
Dams & Hydro Supervisor

\worumbol.doc
Enclosure

cc: Betsy Elder, SPO
Lew Flagg, DMR
Steve Timpano, IF&W
Art Spiess, MHPC
Gordon Russell, USF&WS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

REF: FERC #3428
Worumbo Project
Application for License Amendment

April 27, 1998

Mr. Mark Isaacson
Miller Hydro Group
P.O. Box 97
Lisbon Falls, Maine 04252-0097

Dear Mr. Isaacson:

We have reviewed your draft application for amendment of license for the Worumbo Hydroelectric Project, located on the Androscoggin River in Maine. We understand that you are proposing to modify the dam crest using new flashboards and hinged gates such that the impoundment would be raised from 97.0 to 98.5 ft. MSL. Instead of run-of-river operation as currently required in Article 30 of the license, the project would be cycled occasionally to meet immediate reserve capacity needs which are expected to exist in future energy markets. This would require that the headpond be drawn down as much as 1.5 ft. (i.e., to 97.0 ft.).

We have already provided you with our initial comments on the proposed modification of the Worumbo project in a preconsultation meeting that was held in Augusta on March 30, 1998. As was discussed then, it appears that the changes in dam structures and operations will likely have minimal impacts to fish and wildlife resources based on the following findings:

- 1) Operation of existing fish passage facilities: The existing upstream fish lift and downstream fishway at Worumbo can operate effectively when the headpond elevations are between 97.0 and 98.5 ft. Based on information received at the meeting and on materials attached to the draft application for amendment, it appears that cycling operations would be infrequent during the peak upstream migration period (May - June), thus avoiding impacts to anadromous fish due to pulsed discharges. We have previously recommended meeting with you annually to discuss operation of the upstream and downstream fishways (meeting held on March 3, 1998 to discuss results of downstream passage studies). We suggest incorporating as an agenda item at those future meetings a review of the frequency and timing of cycling operations to determine whether there are any adverse effects on anadromous fish runs.

- 2) Maintenance of instream flow releases: As discussed in the draft amendment application, you plan to continue to comply with the provisions of Article 31, which incorporates an agreement with state and federal resource agencies on instream flow releases in the bypassed reach immediately below the Worumbo dam. We understand that you intend to install flashboards on the portion of the dam where the bypass flows are currently released, and to manage the impoundment level to ensure that the agreed upon discharges continue to occur. We concur with your recommendation to develop a new protocol for monitoring pond levels and flows in the bypassed reach following modification of the project.

As mentioned above, you are proposing to amend Article 30 of your license which requires run-of-river operation of the Worumbo project. We concur with your plan to release the estimated median August flow, 1700 cfs (0.5 cfs/m) +/- 100 cfs from the project, or inflow, whichever is less, as a substitute for run-of-river operation. This aquatic base flow is proportionately the same as what we have agreed to at the Pejepscot project, located immediately downstream from Worumbo, and should be sufficient to protect anadromous fish and other aquatic life in the Androscoggin River.

- 3) Alteration of habitats, including wetlands: The proposed modification of the Worumbo project would increase the extent of the headpond, and potentially reduce the amount and/or quality of riverine habitat, and could result in the inundation of riparian areas, including wetlands. As discussed at the March 30, 1998 meeting, and as described in the draft amendment application, it appears that the inundation of existing riverine habitat and riparian wetlands will be minimal due to the slope of the shoreline and steep gradient at the present upstream limit of the impoundment. We concur with your proposed monitoring of shoreline conditions after the impoundment level increases to determine whether there is any erosion or other modification of riparian habitats.
- 4) Recreational use and access: We concur with your findings that proposed modification of the Worumbo project will have minimal impact on the existing boat launching facility on the impoundment, and should not affect recreational access below the dam.

-3-

We appreciate the opportunity to provide comments on your proposed amendment of license for the Worumbo project. If you have any questions, please contact Gordon Russell at (207) 827-5938.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Michael J. Bartlett', with a stylized, flowing script.

Michael J. Bartlett
Supervisor
New England Field Office

cc: RO/EN (Ben Rizzo)
SOL/NE (Judy Stolfo)
NMFS, Gloucester (Jon Kurland)
EPA, Boston (Ralph Abele)
ME DEP, Augusta (Dana Murch)
ME DOC, Augusta (George Hannum)
ME SPO, Augusta (Evan Richert)
ME IFW, Augusta (Steve Timpano)
ME DMR, Augusta (Lew Flagg)
ME ASA, Bangor (Ed Baum)
Kennebec Coalition (Ron Kreisman)
25 Page St.
Hallowell, ME 04347-1418
Reading File
ES: GRussell:4/27/98:(207)827-5938



STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
21 STATE HOUSE STATION
AUGUSTA, MAINE

ANGUS S. KING, JR.
GOVERNOR

04333-0021

E. PENN ESTABROOK
COMMISSIONER, (ACTING)

April 27, 1998

Mark Isaacson, Vice President
MILLER HYDRO GROUP
PO Box 97
Lisbon Falls, ME 04252-0097

RE: Draft Application for Amendment of License
Worumbo Hydroelectric Project, FERC No. 3428

Dear Mark:

The Department of Marine Resources (DMR) has reviewed the Draft Application for Amendment of License for the Worumbo Hydro Project, FERC No. 3428, located on the Androscoggin River in Lisbon Falls. Miller Hydro proposes to increase generation by installing crest gates and flashboards to increase the normal full pond elevation by 1.5 feet. The existing bypass flows on the Durham side will be maintained under normal operating conditions by installing pneumatically operated, hinged steel crest gates at elevation 98.5 msl over the entire length of the Durham side dam, with conventionally operated hinged flashboards at elevation 99.0 msl over the remaining section to force bypass flow to the Durham side. Seasonally adjusted bypass flow will be maintained as required in Article 31 of the License. During periods of drawdown (to elevation 97.0 feet), the pneumatically operated crest gates would also be lowered to maintain the required bypass flow.

Miller Hydro also proposes to have the authority to draw the impoundment down from elevation 98.5 to elevation 97.0 when necessary to provide a marketable source of reserve power. A minimum flow release of 1700 cfs (approximate Aquatic Base Flow) or inflow, whichever is less, will be maintained during refill.

DMR has had an ongoing restoration program for shad and river herring on the Androscoggin and Little Androscoggin Rivers since 1983, and has been trapping, sorting, and releasing river herring, American shad, and Atlantic salmon from the Brunswick HydroElectric facility since that time. In addition, DMR has trucked alewives to various lake systems above the Worumbo Project since 1983 and has been stocking adult prespawning shad (mostly from the Connecticut River) in the river segment above Worumbo. When the Worumbo Project was redeveloped in 1989, a fish lift was installed to provide for upstream passage of anadromous fish; permanent downstream passage facilities were also installed.

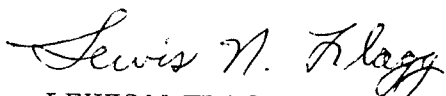
Mark Isaacson
27 April 98
Page 2

Based on our knowledge of the Worumbo fish passage facilities, we do not believe that raising the headpond by 1.5 feet will impact their operation, but we defer to the USF&WS for a more detailed review to see if any modifications to these facilities are needed.

The Licensee proposes to release a minimum flow of 1700 cfs or inflow, whichever is less. The Licensee indicates that the flows normally exceed the project wheel capacity (approximately 9600 cfs) during the alewife and shad run in May and June and thus, would create little chance for fluctuating water flows. DMR has reviewed the mean daily flows in May and June from 1983 through 1996 as recorded at the USGS Auburn gage. Normally, flows drop below 10,000 cfs by mid May and are commonly below 5000 cfs in early June. Flows would be slightly higher at the Worumbo dam because of the larger drainage area (3,382 vs 3,263 square miles). Although DMR believes that the flows will commonly be below 9600 cfs during the alewife and shad runs, because of the limited pond capacity, the duration of the refill should be short. The Licensee also indicates that it is unlikely they will routinely fluctuate the headpond for peaking purposes. The Licensee states they are seeking authority to operate in a peaking mode, but such operation would be occasional or rare. Under these circumstances, DMR does not believe the proposed operational mode will significantly affect the passage of alewives and shad. DMR notes that upstream and downstream passage studies at the Worumbo dam are on "hold" and will be reinitiated in the future when populations of these species have recovered to the extent that these studies would be meaningful. When studies are reinitiated, DMR recommends the operational mode be incorporated into the design.

Based on our review of the Draft Application, DMR does not believe there will be any significant impact on anadromous fish resources; therefore, we have no objections to the proposed amendment. If you have any questions, please feel free to contact Thomas Squiers at (207) 624-6348.

Sincerely,



LEWIS N. FLAGG, DIRECTOR
STOCK ENHANCEMENT DIVISION

LNF/jcw

cc State FERC Coordinating Committee
Jon Kurland, NMFS
Gordon Russell, USF&WS