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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PATRICIA W. AHO
COMMISSIONER

February 21, 2013

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

RE: FERC 2727-086, Ellsworth Hydroelectric Project
Pre-Application Document Comment
Scoping Document 1 Comments
Study Request Submission

Dear Secretary Bose:

The Maine Department of Environmental Protection (MEDEP or Department) received and reviewed a Notice of Intent to File License and Pre-Application Document (PAD), dated October 24, 2012, and Scoping Document 1, dated December 20, 2012, for the Ellsworth Hydroelectric Project (FERC 2727-086). MEDEP staff attended a public scoping meeting (January 15, 2013) and an agency scoping meeting (January 16, 2013), and reviewed appropriate project documents to prepare the following comments and recommendations.

The proposed relicensing is subject to Water Quality Certification provision of Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act). By Executive Order of the governor of the State of Maine, The Maine Department of Environmental Protection is the State certifying agency for projects located wholly or in part in organized towns and cities and, as such, has jurisdiction over the Ellsworth Hydroelectric Project.

The existing Ellsworth Hydroelectric Project consists of two developments, including an upstream storage facility (Graham Lake) with a 30-foot-high, 750-foot-long dam and a downstream generating facility (Ellsworth) with a 65-foot-high, 490-foot-long dam on Lake Leonard and two powerhouses with a total installed capacity of 8.9 megawatts. The Graham Lake Development operates as a storage facility to regulate downstream flows for use at the Ellsworth Development, which operates as a peaking facility to meet peak demands for hydroelectric generation. The average annual generation of the

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Ellsworth Project is 29,907 megawatt-hours. No changes are proposed in the PAD to the facilities or operation of the Ellsworth Hydroelectric Project, however at the public scoping meeting Black Bear Hydro Partners, LLC indicated they intend to explore the potential for increased power generation.

Comment on PAD and Scoping Document 1

The Department appreciates the effort of Black Bear Hydro Partners, LLC and their consultants to prepare a Pre-Application Document. The PAD is clearly written and provides a good understanding of the project, the surrounding resources and dam operation. The PAD provides the agencies information from which issues related to dam relicensing can be readily identified. MEDEP has the following specific comment on the PAD or SD-1 documents.

1. Please clarify the inconsistency between the PAD and the SD-1 documents and the scoping meetings with regard to proposed studies for Aquatic Resources. The PAD indicates that water quality data is limited for some parameters and that habitat may be impaired, but that no further studies are needed for aquatic resources; the SD-1 indicates no studies are proposed for Water Quality and Quantity. However, presentations at both scoping meetings offer study proposals to collect baseline water quality data at the impoundment and downstream of the dam to confirm compliance with state water quality standards.

Water Quality Classifications and Standards

Water Quality Standards and the water quality classifications of all surface waters of the State have been established by Maine Legislature (Title 38 M.R.S.A §§ 464-467). The following classifications apply to the water affected by the Ellsworth Hydroelectric Project:

Union River, main stem, from the outlet of Graham Lake to tidewater-Class B

Union River tributaries-Class A unless otherwise specified

1. Tributaries entering below the outlet of Graham Lake-Class B
2. Outlet of Green Lake (Ellsworth)-Class B

Graham Lake, class GPA

Lake Leonard, class GPA

Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply hydroelectric power generation; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired. The dissolved oxygen content of Class B water may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th in order to ensure spawning and egg incubation of

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indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of Escherichia coli bacteria of human and domestic animal origin in Class B water may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the applicant shall assess licensed and unlicensed sources using available diagnostic procedures. Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

The habitat characteristics and aquatic life criteria of Class B are deemed to be met in existing hydropower impoundments so classified if the impounded waters satisfy Class C aquatic life criteria, provided that any reasonable changes are implemented that do not significantly affect existing energy generation capability and would result in improvement in the habitat and aquatic life of the impounded waters, and further provided that, when the actual quality of the impounded waters attains any more stringent habitat characteristic or aquatic life criteria than required under Class C standards, that water quality must be maintained and protected. Class C aquatic life criteria provide that discharges to Class C waters may cause some changes to aquatic life, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving water and maintain the structure and function of the resident biological community.

Antidegradation

The State's antidegradation policy provides that water quality certification may be approved only if the applicable standards of classification of the affected water body are met and existing in-stream uses and the level of water quality necessary to protect those existing uses are maintained and protected. The policy also provides that, where the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality shall be maintained and protected.

Water Quality Certification Data Requirements

In Section 6.2.2.2, (Water Resources) Proposes Studies, Black Bear Hydro Partners, LLC states that "No changes in Project operation are being proposed"; therefore no further studies are being proposed in regard to water resources. Information from previously conducted studies will be utilized to assess issues related to water resources". Anecdotal evidence presented at the public scoping meeting indicated a potential localized algal bloom issue, and presentations at both the public and the agency scoping meetings indicated that Black Bear Hydro Partners, LLC intends to conduct baseline water quality studies at the impounded Graham Lake and Lake Leonard, and downstream of the dam to confirm compliance with state water quality

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standards. This plan should be developed in accordance with the Department's standard operating procedures and protocols to ensure the data collected is adequate to meet the compliance objective. The Department requests that Black Bear Hydro Partners, LLC design the baseline water quality study to include the following parameters in support of water quality certification;

Impoundment Trophic State Data-Dam height at both Graham Lake and Lake Leonard at the Ellsworth Project suggests the potential for stratification to occur within the impoundments. Black Bear Hydro Partners, LLC will need to supply the data identified in the LAKE TROPHIC STATE SAMPLING PROTOCOL FOR HYDROPOWER STUDIES for both lakes; copy is attached. MEDEP prepared a study request to include this data set to meet the WQC compliance objective.

Dissolved Oxygen Study-At the Agency Scoping Meeting, Black Bear Hydro identified dissolved oxygen data collection as part of the baseline water quality study; Black Bear Hydro Partners, LLC proposed, and the Department supports, a water quality study that includes dissolved oxygen monitoring. Data should be collected from both Graham Lake and Lake Leonard in accordance with the Department's "River Sampling Protocol." A copy of the protocol is attached. The Department notes that the Green Lake Fish Hatchery is expected to be conducting monitoring similar to the requirements described above; it may be possible for Black Bear Hydro Partners LLC to coordinate sampling efforts with the Green Lake Hatchery to benefit both parties and avoid duplication of effort.

Impoundment Aquatic Habitat Study-This study should consist of a plan to determine the effect of impoundment drawdowns on the littoral zone of the Graham Lake impoundment and on the ability of the impoundment to support fish and other aquatic life. The studies should consist of field observations of aquatic-dependent wildlife, fisheries conditions, macroinvertebrates, wetlands, and recreation sites on the impoundments under lower than normal water levels during the open water recreation season. It is the Department's position that there must be both sufficient quality and quantity of habitat for aquatic organisms to meet aquatic life and habitat standards. The Department has found that, generally, water levels providing wetted conditions for 3/4th of the littoral zone of a lake or pond, as measured from full pond conditions, are sufficient to meet aquatic life and habitat standards. MEDEP prepared a study request to include this data set to meet the WQC compliance objective.

Outlet Stream Aquatic Habitat Study-This study should consist of a plan to determine whether current in-stream flow releases are affecting attainment of Class B standards for habitat for fish and other aquatic life in the outlet stream below Graham lake dam. It is the Department's position that there must be both sufficient quality and quantity of habitat for aquatic organisms to meet aquatic life and habitat standards. The Department has found that, generally, flows providing wetted conditions in a weighted average of 3/4th of the cross-sectional area of the affected river or stream, as measured

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from bank full conditions, are sufficient to meet aquatic life and habitat standards. This study is not necessary below Lake Leonard dam because the outlet stream is routinely subjected to tidal fluctuations.

Benthic Macroinvertebrate Sampling-Study of the macroinvertebrate community is critical to determine whether current in-stream flow releases are affecting attainment of Classification Standards for habitat for aquatic life in the river below the dam. Black Bear Hydro Partners, LLC proposed to include benthic macroinvertebrate monitoring in the baseline water quality study. Benthic macroinvertebrate sampling is only expected to be conducted at one location in the outlet stream below Graham Lake. The study plan should be developed in accordance with the Department's "Methods for Biological Sampling and Analysis of Maine's Rivers and Streams". A copy of the protocol is attached, and can also be found at:

<http://www.maine.gov/dep/water/monitoring/biomonitoring/materials/finlmeth1.pdf>

Fish Sampling for Mercury-This study is necessary for impoundments that are operated with drawdowns equal to or greater than ten feet. Based on current drawdowns and because MEDEP understands that no changes are proposed in project facilities or operation that would increase project capacity or change drawdowns, the fish sampling for mercury will not be required for this project.

In addition to meeting requirements of the Water Quality Certification process, MEDEP supports study requests prepared by other natural resource agencies, including but not limited to, US Fish and Wildlife (USFWS), Maine Department of Inland Fish and Wildlife (MDIFW), and Maine Department of Marine Resources (MDMR).

Thank you for the opportunity to comment on the Pre-Application Document and Scoping Document 1 for the Ellsworth Hydroelectric Project. Please direct any questions regarding these comments to Kathy.howatt@maine.gov or 207-446-2642.

Sincerely,



Kathy Davis Howatt
Hydropower Coordinator
Division of Land Resource Regulation

Study Plan Request

Impoundment Trophic State and Aquatic Habitat Study

- 1. Describe the goals and objectives of each study proposal and the information to be obtained.**
Trophic state and aquatic habitat are important indicators of water quality within the impoundment. Assessment of these criteria provides information to evaluate the health of the impoundment and the impact of the dam structure and operation on the river. Data collected will be used to determine if the impounded waters satisfy aquatic life criteria.
- 2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.**
The resource management goal is to certify water quality pursuant to the provisions of the *Water Classification Program*, 38 M.R.S.A. Section 464 *et. seq.* and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act)
- 3. If the requestor is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.**
Requestor is a resource agency
- 4. Describe existing information concerning the subject of the study proposal, and the need for additional information.**
Agency file review indicates there is no data in support of these criteria for impounded waters associated with the Ellsworth Dam. The PAD does not reference a study of this nature, although the height of the dam indicates that stratification may occur in the impoundment. If stratification does occur it should be identified and the effects quantified.
- 5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.**
Data collected will identify trophic state and may identify stratification effects on the impounded water and habitat. Information may be used to recommend adjustment to drawdown levels or cycles.
- 6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.**

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Methods to conduct such a study and protocols for data collection are established by Department staff and have been used successfully throughout the state my MEDEP and others.

7. Describe consideration of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

Trophic state samples are collected twice each month for five consecutive months during open water season. An impoundment aquatic habitat study can be completed in one field season. No alternatives to this study are proposed.

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