***VIA ELECTRONIC FILING***

March 12, 2019

Ms. Kimberly D. Bose, Secretary

Federal Energy Regulatory Commission

888 First Street, N.E.

Washington, D.C. 20426

RE: Comments on the Pre-Application Document and Study Requests for the Lowell Tannery Hydroelectric Project (FERC No. 4202)

Dear Secretary Bose:

The Maine Department of Environmental Protection (Department or DEP) received and reviewed a Pre-Application Document (PAD), submitted on September 26, 2018 by Kruger Energy, KEI (USA) Power Management Inc. (applicant), for the Lowell Tannery Hydroelectric Project (Project) (FERC No. 4202). Department staff attended the joint agency meeting on January 11, 2019, and reviewed appropriate Project documents to prepare the following comments and study requests.

The proposed relicensing of the Lowell Tannery Project is subject to water quality certification provisions 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 Department is the certifying agency for projects located wholly or partially in organized towns and cities, and as such has jurisdiction over the Project.

The existing Lowell Tannery Project consists of a 230-foot-long, 27-foot-high concrete gravity dam with a crest elevation of approximately 178.8 feet[[1]](#footnote-1) topped with 3.5-foot-high flashboards (for a total of 182.3 feet normal pond elevation), with a principal spillway of 30 feet and an auxiliary spillway of 89 feet, a seven-foot-wide log sluice and a 10-foot-wide tainter gate. The dam impounds a reservoir with a surface area of approximately 68.5 acres at a normal pond elevation. The dam contains a 3-foot-wide Denil fish passage facility and a dedicated downstream fish bypass pipe. A powerhouse integral to the dam contains a single turbine-generator unit with a total generating capacity of 1 MW and an average annual generation of approximately 4,095 MWh. The Lowell Tannery Project operates in a run-of-river mode where upstream water flowing into the project impoundment approximately equals water flowing downstream from the project.

The Department understands that there are no proposed changes in facilities or operations of the Rollinsford Project at this time.

**Comments on the Pre-Application Document (PAD)**

The Department appreciates the effort of the applicant to prepare the PAD. The PAD provides an understanding of the Project facilities, the surrounding resources, and current and proposed project operations. The PAD also provides information from which issues related to relicensing can be readily identified. After review of the available documents, the Department has the following comments on the PAD:

1. **Section 4.0 (p. 4-2)** describes current Project facilities; however, it is unclear whether the normal full pond water elevation is 187.5 feet (listed in the description of the Project Structures, in the description of the Project Reservoir, and in section 4.4, Existing Project Operations) or 182.3 feet (listed as full pond on table 4-1 and in the description of the Dam). The applicant should clarify this.
2. **Section 5.2.9** **(p. 5-18 through 5-20)** summarizes existing water quality data collected in the vicinity of the Lowell Tannery Project, however the PAD does not include a proposal for water quality studies (at section 6.2.2) to demonstrate attainment of Maine’s water quality standards. Water quality studies are necessary to assess whether the project, under current operation, meets Maine’s water quality standards, because Kruger is not proposing changes to its operations under a new license for the Project.
3. **Section 5.2.10** **(p. 5-21)** summarizes benthic macroinvertebrate data collected by the Department in 2016, which indicated that sensitive species were present and that the Passadumkeag Stream attains Class A water quality standards for aquatic life and habitat downstream of the Project. However, the Passadumkeag River is Class AA downstream of the Lowell Tannery dam, therefore a Benthic Macroinvertebrate Study may be necessary to ensure that Maine’s classification standards are met.
4. Under **Section 6.2.2** **(p. 6-3)**, the applicant does not propose any water quality studies. As discussed below in the Water Quality Certification Data Requirements Section, the Department will require several studies to be completed by the applicant to demonstrate attainment of Maine Water Quality Standards in the project area.

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. §§ 464-468). The following classification applies to the waters affected by the Lowell Tannery Project:

“Passadumkeag River and its tributaries – Class A, unless otherwise specified.

1. Pasadumkeag River from the Pumpkinhill[[2]](#footnote-2) Dam to its confluence with the Penobscot River - Class AA”[[3]](#footnote-3)

Class AA waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; agriculture; recreation in and on the water; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as free-flowing and natural.

The aquatic life, dissolved oxygen, and bacteria content of Class AA waters shall be as naturally occurs.

Except as provided in statute, there may be no direct discharge of pollutants to Class AA waters.[[4]](#footnote-4)

Class A waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as natural.

The dissolved oxygen content of Class A water shall not be less than 7 parts per million or 75% of saturation, whichever is higher. The aquatic life and bacteria content of Class A water shall be as naturally occurs.

Except as provided in statute[[5]](#footnote-5), direct discharges to these waters licensed after January 1, 1986 are permitted only if, in addition to satisfying all the requirements of this article, the discharged effluent will be equal to or better than the existing water quality of the receiving waters.

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 classification shall be maintained and protected.[[6]](#footnote-6)

Water Quality Certification Data Requirements

The applicant does not propose any water quality studies for the relicensing of the Lowell Tannery Project; however, water quality studies in the impoundment and tailrace reaches are typically required to evaluate compliance with Maine Water Quality Standards before the Department issues a water quality certification for a hydropower project.

It has been the Department’s practice to determine the metrics, methods, timing, and duration of water quality monitoring necessary to ensure that the water quality studies meet data quality objectives. The Department requests that the applicant conduct water quality studies that include the following parameters and adhere to the Department’s established sampling protocols in support of water quality certification. Formal study requests following FERC’s Integrated Licensing Process (ILP) criteria are attached to this comment letter.

**Impoundment Trophic State Study** –Water quality data presented in the PAD for the Lowell Tannery Project is insufficient to demonstrate that the impoundment exhibits a steady or improving trophic state; therefore the Department is requesting that an impoundment Trophic State Study be conducted to determine if Maine’s water quality standards are met. A Trophic State Study should be conducted in accordance with the protocols established in the DEP SAMPING PROTOCOL FOR HYDROPOWER STUDIES (June 2018), provided with this comment letter.

**Impoundment Aquatic Habitat Study** –The purpose of this study is to determine the character of the impoundment’s littoral zone and the ability of the impoundment to support fish and other aquatic life. The Lowell Tannery Project is operated as a run-of-river facility; therefore, normal operations should not greatly affect the littoral zone. However, bathymetric data is not available for the impoundment and no measurements of the littoral zone have been made. The applicant will need to establish a bathymetric profile of the impoundment and conduct the impoundment aquatic habitat study following the “Habitat Study” protocol under “Lakes, Ponds, and Impoundments” in the DEP SAMPING PROTOCOL FOR HYDROPOWER STUDIES (June 2018), which is provided with this comment letter.

**Downstream Temperature and Dissolved Oxygen Study** – Temperature and dissolved oxygen must be monitored downstream of the Lowell Tannery dam to verify compliance with Maine dissolved oxygen criteria. Data must be collected in accordance with the Department’s “Temperature and Dissolved Oxygen Study” protocol under “Rivers and Streams” in the DEP SAMPING PROTOCOL FOR HYDROPOWER STUDIES (June 2018), which is attached to this comment letter. As noted in the protocol, the applicant must consult with the Department to verify representative sampling locations as the study plan is developed.

**Benthic Macroinvertebrate Monitoring** –Assessment of the benthic macroinvertebrate community is required in order to determine whether current in-stream flow releases are affecting attainment of habitat and aquatic life criteria in the river below the Lowell Tannery dam. As noted above, The Department completed a Benthic Macroinvertebrate Study in the Passadumkeag River in 2016, establishing that the Project meets Class A water quality standards. However, the classification standard downstream of the Lowell Tannery dam is Class AA. Therefore, a Benthic Macroinvertebrate Study is necessary and should be developed in accordance with the DEP METHODS FOR BIOLOGICAL SAMPLING AND ANALYSIS OF MAINE’S RIVERS AND STREAMS (2002, revised April 2014), which is attached to this comment letter. The applicant must consult with the Department to determine the sampling location as the study plan is developed.

**Aquatic Habitat Cross-Section Flow Study -** This study evaluates whether current in-stream flow releases are affecting attainment of habitat criteria for fish and other aquatic life in the Passadumkeag River downstream of the Lowell Tannery dam.It is the Department’s position that there must be both sufficient quality and quantity of habitat for aquatic organisms to meet habitat and aquatic life criteria. The applicant must demonstrate attainment of habitat and aquatic life criteria by conducting an Aquatic Habitat Cross-Section Flow Study following the “Habitat and Aquatic Life Studies” protocol under “Rivers and Streams” in the DEP SAMPING PROTOCOL FOR HYDROPOWER STUDIES (June 2018), which is attached to this comment letter. This study is required in the tailrace reach. The applicant should consult with the resource agencies when establishing the transects for the flow study. All depth, velocity, and wetted width data for each transect should be submitted to the resource agencies and included in any study reports.

Thank you for the opportunity to comment on the Pre-Application Document (PAD) and submit study requests for the Lowell Tannery Project. Please direct any questions regarding these comments and study requests to Kathy.Howatt@maine.gov or 207-446-2642.

Sincerely,



Kathy Davis Howatt

Hydropower Coordinator

Maine Department of Environmental Protection

Encl: Impoundment Trophic State and Aquatic Habitat Study Request

 Downstream Temperature and Dissolved Oxygen Study Request

 Benthic Macroinvertebrate Study Request

 Aquatic Habitat Cross-Section Flow Study Request

DEP Sampling Protocol for Hydropower Studies (June 2018)

Methods for Biological Sampling and Analysis of Maine’s Rivers and Streams

(August 2002)

cc: Lewis Loon, KEI

 Sherri Loon, KEI (email only)

 Andy Qua, Kleinschmidt Associates (email only)

1. Elevations are provided in feet above mean sea level. [↑](#footnote-ref-1)
2. Lowell Tannery facility is also known as Pumpkinhill. [↑](#footnote-ref-2)
3. Title 38 M.R.S. §467 (7)(F)(6) [↑](#footnote-ref-3)
4. 38 M.R.S. § 465 (1)(C) [↑](#footnote-ref-4)
5. Title 38 M.R.S. §465 (2)(C) [↑](#footnote-ref-5)
6. See Title 38 M.R.S.A §464(4)(F) [↑](#footnote-ref-6)