

119 FERC ¶ 62,243
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Essex Company and Lawrence Hydroelectric
Associates

Project No. 2800-037

ORDER AMENDING LICENSE

(Issued June 19, 2007)

On January 10, 2007, Essex Company and Lawrence Hydroelectric Associates, licensees for the Lawrence Hydroelectric Project, FERC No. 2800,¹ filed an application to amend its license by proposing to replace the existing wooden flashboards on the crest of the project's Essex Dam with an inflatable flashboard system. The project is located on the Merrimack River in Lawrence, Essex County, Massachusetts.

BACKGROUND

The project consists of 900-foot-long stone-masonry gravity dam (Essex or Great Stone Dam) dam with 5-foot high wooden flashboards supported by irregularly spaced steel pins. The impoundment created by the dam and flashboards covers an area of about 655 acres. According to the licensees, maintenance of the flashboard system over the years has been limited almost exclusively to the replacement of flashboards and flashboard pins which are damaged during high flow events. The replacement of the flashboards results in drawdown of impoundment for extended periods of time. In order to reduce the number, extent and duration of impoundment drawdowns, the licensees are proposing to replace the existing wooden flashboards on the crest of the Essex Dam with an inflatable flashboard system.

The proposed flashboard system would consist of multiple-operating-zone inflatable system anchored into the dam crest, separated by at least two concrete piers. By controlling air pressure within the bladder, the flashboard height can be increased or decreased to maintain normal headpond elevation.

¹ 5 FERC ¶61,202 Order Issuing Major License and Authorizing Negotiations for Sale of Securities, issued December 4, 1978.

AGENCY CONSULTATION

By a letter dated October 25, 2006, the licensees requested comments from state and federal resource agencies on their proposal to replace the wooden flashboards with an inflatable flashboard system. Responses were received from the Massachusetts Historical Commission (MAHC), U.S. Fish & Wildlife Service (FWS), Massachusetts Division of Marine Fisheries (MAMF), Massachusetts Division of Fisheries & Wildlife (MAFWS), and Massachusetts Department of Environmental Protection (MADEP).

The MAHC stated that the proposed project is unlikely to affect significant historic or archeological resources. The MADEP expressed its support for the project and reminded the licensees that they need approval from the fishery resource agencies regarding appropriate construction timing, and should comply with the provisions of the Wetlands Protection Act, and notify appropriate conservation commission prior to work. The MAFWS strongly endorsed the licensees' proposal.

The FWS stated that based on their experience at the Holyoke Project, it would be beneficial to have more small bladders than three large ones to provide greater flexibility in the distribution of spill flows across the dam, which is critical for effective upstream fish passage.

The MAMF recommended that construction be completed in the low flow period between July 15 and September 15, outside of spring and fall upstream passage seasons.

REVIEW

The project is operated as run-of-river and has no useable storage capacity. The proposed flashboard system will not change the authorized headpond elevation or the project mode of operation.

Our review found that the inflatable flashboard system would (a) allow the licensees to more consistently maintain water levels and thereby enhancing the efficiency and generation capabilities of the project, (b) improve upstream fish passage, (c) eliminate dangers associated with the replacement of wooden flashboards, and (d) enhance the aesthetics.

Prior to the start of construction of the inflatable flashboard system, the licensees must file for Commission approval contract plans and specifications and cofferdam construction drawings as we are requiring in the ordering paragraphs (C) and (D) of this order. Ordering paragraph (E) of this order requires the licensees to file for review and

comment operating procedures describing how the flashboards will be operated to control water levels.

After the construction is completed, the licensee must file as-built exhibit drawings for Commission's approval as we are requiring in ordering paragraph (F) of this order. The exhibit drawings must be prepared in accordance with Commission's regulations at 18 C.F.R. §§4.39 and 4.41

The Director orders:

(A) The license for the Lawrence Project is amended as provided by this order effective the day this order is issued.

(B) The licensee's request to replace a wooden flashboard system with an inflatable flashboard system is approved. Ordering Paragraph (B) (ii) of the license is revised in part to read as follows:

(ii) Project works consisting of: (1) the existing 33-foot high and 900-foot-long dam of rubble masonry construction with five-foot-high inflatable flashboard system; (2) an existing 9.8-mile-long reservoir having a surface area of 655 acres at normal high water elevation 44.17 feet mean sea level (msl) and a maximum storage capacity of approximately 19,900 acre-feet; (3) the existing South Canal approximately 35 feet wide and 10 feet deep, originating at the south abutment of the Essex Dam and generally paralleling the Merrimack River bed, below the Essex Dam, for a distance of approximately 2,750 feet; (4) the existing North Canal, approximately 95 feet wide and 15 feet deep, originating at the north abutment of the dam and paralleling the Merrimack River below the dam for a distance of approximately 5,300 feet; (5) a fish elevator installed at the dam and a fish ladder; (6) a powerhouse containing two 7.4 MW hydroelectric generating units and a tailrace channel extending into the Merrimack River Channel; (7) a single-circuit overhead 13.8-5V power line to the Massachusetts Electric Company's Lawrence No. 1 substation; and (8) appurtenant facilities

(C) *Contract Plans and Specifications.* At least 60 days prior to the start of construction of the inflatable flashboard system, the licensee shall submit one copy of its plans and specifications and supporting design report to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI-New

York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

(D) *Cofferdam Construction Drawings.* Before starting construction of the inflatable flashboard system, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall make sure construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit one copy to the Commission's D2SI-New York Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam construction drawings and specifications and the letters of approval.

(E) *Operating Procedures.* At least 60 days prior to completing construction of the inflatable flashboard system, the licensee shall submit for review and comment one copy to the Division of Dam Safety and Inspections – New York Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections) of operating procedures describing how the flashboards will be operated to control water levels. The procedures should explain the water surface elevations that will trigger deflating and inflating the system.

(F) *As-built Drawings.* Within 90 days of completion of all construction activities, the licensee shall file for Commission approval, revised exhibit L drawings to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's D2SI-New York Regional Engineer, and the Director, D2SI.

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

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