

LAWRENCE HYDROELECTRIC PROJECT

LIHI APPLICATION

ATTACHMENT F

CULTURAL RESOURCE PROTECTION



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ESSEX COMPANY
A SUBSIDIARY OF ENEL NORTH AMERICA, INC.

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MASS. HIST. COMM

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October 25, 2006

Ms. Brona Simon
Deputy Historic Preservation Officer
MA Historic Commission
220 Morrissey Boulevard
Boston, MA 02125

Re: Lawrence Hydroelectric Project (FERC No. 2800-MA);
Flashboard Replacement Project

Dear Addressee:

The Essex Company ("Essex") with its co-licensee Lawrence Hydroelectric Associates ("LHA") own and operate the Lawrence Hydroelectric Project (FERC No. 2800), a 16.8 MW facility (the "Project") located on the Merrimack River in the City of Lawrence, Massachusetts. The Lawrence Project works include the Essex Dam, a 900-foot long cut granite block structure, wholly owned by Essex, which impounds water for the Project. Essex and LHA are currently evaluating the feasibility of replacing the existing five-foot high wooden flashboards on the dam with an identical height "inflatable dam" or crest gate system. The purpose of this letter is to solicit agency comments regarding this concept.

Essex proposes to replace the wooden flashboards on the crest of the Essex Dam with a multiple-operating-zone inflatable system anchored into the present dam crest, potentially separated by concrete piers. Enclosed are figures of the Essex Dam location and existing configuration, and a preliminary drawing of the new inflatable dam. The proposed system would consist of inflatable air bladders anchored into the entire length of the dam crest. Some potential manufacturers also incorporate hinged steel panels on the upstream side of the bladders. By controlling air pressure within the bladder, and thus increasing or decreasing "flashboard" height, the bladder can be used to maintain the normal headpond elevation at the Project, or other elevations between the normal water level and crest of dam, depending upon river user needs, flow and weather conditions as well as a number of other factors. At least two intermediate piers may need to be installed along the dam's alignment. A compressor system used to inflate the bladder would be installed by Essex within a suitable structure near the dam.

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Management of Merrimack River water levels in the impoundment upstream of the Essex Dam will be maintained as in the past, with the realization that inflatable dam installation will likely result in quicker response times to changing river conditions.

Replacement of the existing flashboard system with an inflatable crest gate system would provide a number of operational and environmental benefits, including but not limited to:

1. Elimination of impoundment drawdowns for flashboard replacement;
2. Improved control (timing and effectiveness) of upstream water levels in both high and low-flow situations;
3. ~~More effective upstream fish passage at the Lawrence Project powerhouse, as flashboard damage and leakage periods, which provide "false attraction" to the dam, will be minimized in extent and duration;~~
4. Enhancing the aesthetics of the historic Essex Dam while incorporating advanced water-control technology and improving the effectiveness and flexibility of the dam as a water retention structure for the Lawrence Project and its impoundment; and
5. Decreased negative visual impacts of the presence of trash floating against the upstream side of the Dam.

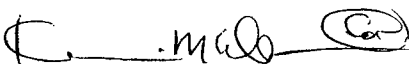
Pending timely approvals, we anticipate that construction to install the bladder system on the dam could occur outside of the fish passage season between July 15 and September 15, 2007, a typically low flow period within the watershed. A partial impoundment drawdown to a safe level below the dam crest would be necessary during the construction period to facilitate installation of the inflatable dam system.

Essex respectfully requests your written comments on this conceptual flashboard replacement project within 30 days of receipt. Following receipt of comments a formal submission to the FERC will be made and pending approval, we will select a contractor and inflatable dam supplier and move towards installation as soon as possible.

We look forward to working with you and other interested parties as we seek to improve operation of the Lawrence Project and offer increased benefits to all users of the Merrimack River. Should you have any questions on this project, please don't hesitate to contact me at (978)-681-1900, x808 or by email at skip.medford@northamerica.enel.it.

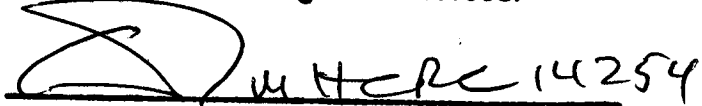
Sincerely,

ESSEX COMPANY



Skip Medford
Regulatory Specialist

After review of MHC files and the materials you submitted, it has been determined that this project is unlikely to affect significant historic or archaeological resources.



Edward L. Bell
Senior Archaeologist

Massachusetts Historical Commission

Date

01 November 2006